

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

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

FORM 20-F

(Mark One)

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

or

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

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

or

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)

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(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:

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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  No

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  No

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  No

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  No

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  Accelerated Filer  Non-accelerated filer

Emerging growth company

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.

†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  International Financial Reporting Standards as issued by the International Accounting Standards Board  Other

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  Item 18

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  No

Please send copies of notices and communications from the Securities and Exchange Commission to:

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## 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](http://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,” “show,” “pursue,” “anticipate,” “estimate,” “expect,” “project,” “intend,” “plan,” “believe” and words and terms of similar substance to identify 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

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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”.

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Selected consolidated income statement data In thousand U.S. dollars (except number of shares and per share data)	For the year ended December 31,				
	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 <sup>(1)</sup>	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 <sup>(2)</sup>	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 <sup>(3)(4)</sup>	0.77	0.45	0.30	—	(0.10 )
Basic earnings (losses) per ADS <sup>(3)(4)</sup>	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

Equity in earnings (losses) of non-consolidated companies include write-downs of our investment in Usiminas, as a (1) 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.

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

International Accounting Standard N° 1 (IAS 1) (revised) requires that income for the year as shown in the income (3) 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.

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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 <sup>(1)</sup>	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 <sup>(2)</sup>	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
<b>Total assets</b>	<b>12,547,862</b>	<b>12,122,566</b>	<b>8,322,870</b>	<b>8,062,593</b>	<b>9,690,159</b>
Capital and reserves attributable to the owners of the parent <sup>(3)</sup>	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
<b>Total liabilities</b>	<b>5,063,286</b>	<b>6,269,795</b>	<b>3,156,277</b>	<b>3,259,596</b>	<b>4,055,456</b>
<b>Total equity and liabilities</b>	<b>12,547,862</b>	<b>12,122,566</b>	<b>8,322,870</b>	<b>8,062,593</b>	<b>9,690,159</b>
Number of shares <sup>(3)</sup>	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

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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 galvanized 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 Previdência 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 United States have been negotiating changes to the imposition of a 25% tariff on steel products exported to United 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

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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 United 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 Faustín'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 galvanized 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'

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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) <sup>1</sup>				Total
		Mexico	Brazil	Argentina	Other	
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
Color-Coating Line	8	620		120	190	930
Slitter	32	2,090		500	310	2,900
Cut to length	36	570		1,000	220	1,790
Roll forming Line	34	510		540	230	1,280
Panel Line	4	80				80
Profile Line	15	140		80	110	330
Tube Line	20	520		190	60	770
Wire drawing Lines	12				100	100
Wire Mesh Lines	2				40	40
Rebar Processing Lines <sup>2</sup>	47				180	180

In this annual report, annual production capacity is 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.

<sup>2</sup> Includes shears, straighteners, stirrup benders and shaping centers.

Mexico. Ternium has 12 steel production and/or processing units in Mexico, consisting of three integrated steel-making plants (two of which produce long steel products and one of which produces flat steel products and includes two steel service centers); five downstream flat steel processing plants, combining hot-rolling, cold-rolling and/or coating facilities (two of which include steel service centers); and four steel service centers. In addition, Ternium has ten distribution centers in this region, aimed at serving customers mainly in the construction sector.



The following table sets forth key items of information regarding Ternium’s principal production units in Mexico:

Unit	Type of plant		Service Distribution		Location
	Integrated <sup>1</sup>	Downstream <sup>2</sup>	center	center	
Guerrero	X		X		San Nicolás d.I.G., Nuevo León
Apodaca	X				Apodaca, Nuevo León
Puebla	X				Puebla, Puebla
Juventud		X	X		San Nicolás d.I.G., Nuevo León
Churubusco		X	X		Monterrey, Nuevo León
Monclova		X			Monclova, Coahuila
Universidad		X			San Nicolás d.I.G., Nuevo León
Pesquería		X			Pesquería, Nuevo León
Apodaca Industrial			X		Apodaca, Nuevo León
Apodaca Comercial			X		Apodaca, Nuevo León
Edificios Metálicos			X		Ciénaga de Flores, Nuevo León
San Luis			X		San Luis, San Luis Potosí
DC Chihuahua				X	Chihuahua, Chihuahua
DC BC				X	Tijuana, Baja California
DC Norte				X	Escobedo, Nuevo León
DC Puebla				X	Puebla, Puebla
DC Guadalajara				X	Guadalajara, Jalisco
DC Mexico				X	Tultitlán, Estado de México
DC Culiacán				X	Culiacán, Sinaloa
DC Veracruz				X	Veracruz, Veracruz
DC Mérida				X	Mérida, Yucatán
DC Tuxtla				X	Tuxtla Gtz, Chiapas

<sup>1</sup> “Integrated” refers to a type of steel plant that includes at least steelmaking and hot-rolling facilities.

<sup>2</sup> “Downstream” refers to a type of steel plant that includes hot-rolling, cold-rolling and/or steel coating facilities.

Guerrero unit: Located in the metropolitan area of Monterrey, Nuevo León, Mexico, the Guerrero unit produces hot-rolled and cold-rolled coils for the industrial, construction and home appliance sectors and for further processing in other Ternium Mexico’s units. It also produces slitted and cut-to-length products for the industrial sector, and profiles and tubes for the industrial and construction sectors. This unit includes two steel service centers, a slab-rolling mill, and an integrated facility based on direct reduced iron, or DRI, mini-mill steelmaking and thin-slab casting/rolling mill technologies that uses iron ore pellets and steel scrap as main raw materials. The facility sources all of the iron ore from Ternium Mexico’s mining operations. In addition, the facility sources its net requirements of slabs from Mexican and international producers, and from Ternium Brasil. Ternium’s procurement policy for these products is described in greater depth in “—B. Business Overview—Raw Materials, Slabs, Energy and Other Inputs.”

Apodaca unit: Located in Nuevo León, Mexico, the Apodaca unit produces billets and rebar for the construction industry. It is an integrated facility based on mini-mill steelmaking technology that uses steel scrap as its main raw material. Ternium’s procurement policy for scrap is described in greater depth in Item 4. “Information on the Company—B. Business Overview—Raw Materials, Slabs, Energy and Other Inputs.”

Puebla unit: Located in Puebla, Mexico, the Puebla unit produces rebar, wire rod and round bar mainly for the construction and industrial sectors, including high-carbon, low-carbon and micro-alloyed wire rod. It is an integrated facility based on DRI and mini-mill steelmaking technologies that uses iron ore pellets and steel scrap as main raw materials. The facility sources all of the iron ore from Ternium Mexico’s mining operations. Ternium’s procurement policy for these products is described in greater depth in “—Raw Materials, Slabs, Energy and Other Inputs.”

Juventud unit: Located in Nuevo León, Mexico, the Juventud unit produces galvanized and color-coated coils for the construction, home appliance and other industries; and has a steel service center that produces slitted and roll-formed





products, panels and tubes for the construction and industrial sectors. This plant processes hot-rolled and cold-rolled coils received from Ternium Mexico's units in Nuevo León.

Churubusco unit: Located in Nuevo León, Mexico, the Churubusco unit produces hot-rolled and cold-rolled coils for the industrial, construction and home appliance sectors and for further processing in other Ternium Mexico's units. It also produces slitted and cut-to-length products for the industrial sector. The facility sources its requirements of slabs from Ternium Brasil, from third party Mexican producers and from the international markets. Ternium's procurement policy for slabs is described in greater depth in "—Raw Materials, Slabs, Energy and Other Inputs."

Monclova unit: Located in Coahuila, Mexico, the Monclova unit produces galvanized and color-coated sheets for the home appliance industry. This plant processes cold-rolled coils mainly received from Ternium Mexico's units in Nuevo León.

Universidad unit: Located in Nuevo León, Mexico, and across the street from the Guerrero unit, the Universidad unit produces galvanized and color coated coils for the construction, home appliance and industrial sectors. This plant, which also has a cold-rolling mill, processes hot-rolled coils received from Ternium Mexico's units in Nuevo León.

Pesquería industrial center: Located in Nuevo León, Mexico, the Pesquería industrial center produces cold-rolled and galvanized coils for the automotive industry, among other industrial sectors. The cold-rolling mill processes hot-rolled coils sourced from Ternium Mexico's Churubusco and Guerrero units, as well as from third parties. Ternium purchases hot-rolled coils mainly from NSSMC; hot-rolled coils are processed at the Pesquería cold-rolling mill and then used in the production of galvanized products.

Ternium is currently building new hot-rolling mill, hot-dip galvanizing and painting facilities in this unit. The new hot-rolling mill will have an annual production capacity of 4.1 million tons. With a total investment estimated at \$1.1 billion, the new line is expected to be operational by the end of 2020. The current plan includes the option to increase the line's production capacity in the future by an additional 0.7 million tons. The new state-of-the-art facility will target the growing industrial and commercial markets, improving customer service and reducing lead-times. The investment will constitute a significant technological upgrade to the country's steel production capacity, enabling the expansion of Ternium's product range to encompass a broader dimensional offering and the most advanced steel grades, with the aim at replacing high-value-added steel imports.

Ternium's new hot-dip galvanizing and painting lines will have an annual production capacity of 350,000 and 120,000 tons, respectively, and are expected to require a total investment of approximately \$280 million. The new lines, which target the household appliances, lighting and metal-mechanic industries in Mexico are expected to be operational during 2019. For further information on Ternium's capital expenditures, see "—B. Business Overview—Capital Expenditure Program."

Apodaca Industrial unit: Located in Nuevo León, Mexico, the Apodaca Industrial unit is a steel service center that produces slitted and cut-to-length products for industrial customers. This plant processes coated coils mainly received from Ternium Mexico's units in Nuevo León.

Apodaca Comercial unit: Located in Nuevo León, Mexico, the Apodaca Comercial unit is a steel service center that produces slitted and roll-formed products, profiles and tubes for the construction industry. This plant processes coated coils mainly received from Ternium Mexico's units in Nuevo León.

Edificios Metálicos unit: Located in Nuevo León, Mexico, the Edificios Metálicos unit produces metal building systems for commercial construction. This plant processes heavy plates procured from the local and international markets and coils received from Ternium Mexico's units in Nuevo León.

San Luis unit: Located in San Luis Potosí, Mexico, the San Luis unit is a steel service center that produces slitted and cut-to-length products for the home appliance and other industries. This plant processes coated coils received from Ternium Mexico's units in Nuevo León.

Southern Region. Ternium's Southern Region covers Argentina, Bolivia, Chile, Paraguay and Uruguay. Ternium has eight steel production and/or processing units in this region, all of which are located in Argentina, consisting of one integrated flat steel-making plant; four downstream flat steel processing plants, comprising cold-rolling, coating or tube-making facilities (three of which include steel service centers); and three additional steel service centers.



The following table sets forth key items of information regarding Ternium's principal production units in Argentina:

Unit	Type of plant	Service Distribution		Location
		Integrated	Downstream	
San Nicolás	X			Ramallo, Buenos Aires
Canning		X	X	Canning, Buenos Aires
Haedo		X	X	Haedo, Buenos Aires
Florencio Varela		X	X	Florencio Varela, Buenos Aires
Ensenada		X		Ensenada, Buenos Aires
Rosario			X	Rosario, Santa Fe
Serviacero III			X	Ramallo, Buenos Aires
Sidercrom			X	Ramallo, Buenos Aires

San Nicolás unit: Located in the Province of Buenos Aires, Argentina, the San Nicolás unit produces slabs, hot-rolled, cold-rolled and tinplate coils for the construction, industrial, packaging and naval sectors, and for further processing in other Ternium Argentina units. The San Nicolás unit includes an integrated facility based on blast furnace and basic oxygen furnace technologies, supplemented with a sinter plant, coking batteries, a co-product plant and a power plant. It uses metallurgical coal and iron ore lumps, pellets and fines as main raw materials. The facility sources all of its coal and iron ore needs from the international markets, shipped to its own port on the banks of the Paraná river. In addition, the facility sources its net requirements of steel products from the international market and Ternium Brasil. Ternium's procurement policy for these products is described in greater depth in "—B. Business Overview—Raw Materials, Slabs, Energy and Other Inputs."

Canning and Haedo units: Located in the Province of Buenos Aires, Argentina, the Canning and Haedo units produce galvanized sheets, slitted and roll-formed products and profiles for the construction and home appliance sectors. In addition, the Canning facility produces color coated sheets for such markets. Both plants process cold-rolled coils received from Ternium Argentina's San Nicolás and Ensenada units.

Florencio Varela unit: Located in the Province of Buenos Aires, Argentina, the Florencio Varela unit produces electrogalvanized sheets, blanks and slitted products for the automotive, construction and other industries. This plant processes cold-rolled coils received from Ternium Argentina's San Nicolás and Ensenada units.

Ensenada unit: Located in the Province of Buenos Aires, Argentina, the Ensenada unit produces cold-rolled coils for the construction and industrial sectors and for further processing in Ternium Argentina's own facilities. This plant processes hot-rolled coils received from Ternium Argentina's San Nicolás unit.

Rosario unit: Located in the Province of Santa Fe, Argentina, the Rosario unit is a steel service center that produces tubes for the construction industry. This plant processes hot-rolled coils received from Ternium Argentina's San Nicolás unit.

Serviacero III unit: Located in the Province of Buenos Aires, Argentina, the Serviacero III unit is a steel service center that produces cut-to-length products for the construction and industrial sectors. This plant processes hot-rolled coils received from Ternium Argentina's San Nicolás unit.

Sidercrom unit: Located in the Province of Buenos Aires, Argentina, the Sidercrom unit is a steel service center that produces cut-to-length and slitted products for the packaging sector. This plant processes tinplate coils received from Ternium Argentina's San Nicolás unit.

Other Markets. Ternium has 14 steel production and/or processing units in Brazil, Colombia, Central America and the United States, consisting of two integrated steel-making plants (one of which produces flat steel products and the other long steel products), two downstream flat steel processing plants comprising coating facilities (one of which includes a steel service center), and ten steel service centers. In addition, Ternium has seven steel retail distribution centers aimed at serving customers mainly in the construction sector.

The following table sets forth key items of information regarding Ternium's principal production locations and production units:

Unit	Country	Type of plant		Service Center	Distribution Center	Location
		Integrated	Downstream			
Rio de Janeiro	Brazil	X				Santa Cruz, Rio de Janeiro
Shreveport	USA		X			Shreveport, Louisiana
Manizales Steel	Colombia	X				Manizales, Caldas
Barranquilla	Colombia			X		Malambo, Atlántico
Bogotá	Colombia			X		Bogotá, Cundinamarca
Cali Tubes	Colombia			X		Puerto Tejada, Cauca
Cali Services	Colombia			X		Cali, Valle del Cauca
Itagüí	Colombia			X		Itagüí, Antioquía
Manizales Services	Colombia			X		Manizales, Caldas
Montería	Colombia			X		Montería, Córdoba
DC Bucaramanga	Colombia				X	Bucaramanga, Santander
DC Medellín	Colombia				X	Medellín, Antioquía
Villa Nueva	Guatemala	X	X	X		Villa Nueva, Guatemala
DC Norte	Guatemala				X	Guatemala, Guatemala
DC Occidente	Guatemala				X	Mazatenango, Suchitepéquez
DC Petén	Guatemala				X	Petén, Guatemala
DC Huehuetenango	Guatemala				X	Huehuetenango, Guatemala
DC Jutiapa	Guatemala				X	Jutiapa, Guatemala
San Salvador	El Salvador			X		San Salvador, San Salvador
Managua	Nicaragua			X		Managua, Managua
San José	Costa Rica			X		San José, Costa Rica

Rio de Janeiro unit: Located in the State of Rio de Janeiro, Brazil, this unit produces slabs for further processing in other Ternium units in Mexico and Argentina, and for sale to third parties. The Rio de Janeiro unit includes an integrated facility based on blast furnace and basic oxygen furnace technologies, supplemented with a sinter plant, coking batteries and a power plant. It uses metallurgical coal and iron ore pellets, lumps and fines as main raw materials. The facility sources all of its coal needs from the international markets (shipped to its own port on the Atlantic ocean coastline), and its iron ore needs from the local market (shipped to its own yards through a railroad system). Ternium's procurement policy for these products is described in greater depth in "—B. Business Overview—Raw Materials, Slabs, Energy and Other Inputs."

Shreveport unit: Located in Louisiana, United States, the Shreveport unit produces galvanized and color coated sheets. It processes cold-rolled coils procured mainly from Ternium Mexico or the U.S. market.

Manizales Steel unit: Located in Caldas, Colombia, the Manizales Steel unit produces billets and rebar for the construction industry. It is an integrated facility based on mini-mill steelmaking technology that uses steel scrap as its main raw material. The facility sources all of its scrap and electricity needs from local suppliers. Ternium's procurement policy for these products is described in greater depth in "—B. Business Overview—Raw Materials, Slabs, Energy and Other Inputs."

Barranquilla unit: Located in Atlántico, Colombia, the Barranquilla unit is a steel service center that produces slitted, cut-to-length, drawn wire, wire mesh and customized rebar-based products for the construction industry. This plant processes wire rod purchased in the international market, rebar received from the Manizales unit and rebar purchased in the international markets. Hot-rolled and cold-rolled coils are received mainly from the units in Nuevo León.

Bogotá, Cali Services, Manizales Services and Montería units: The Bogotá unit in Cundinamarca, the Cali Services unit in Valle del Cauca, the Manizales Services unit in Caldas and the Montería unit in Córdoba are steel service



centers located in Colombia that produce customized rebar-based products for the construction industry. These plants process rebar received from the Manizales Steel unit and rebar purchased in the international markets.

**Cali Tubes unit:** Located in Cauca, Colombia, the Cali Tubes unit is a steel service center that produces profiles, tubes and structural beams for the construction industry. This plant processes hot-rolled and cold-rolled coils received mainly from units in Nuevo León and purchased in the international markets.

**Itagüí unit:** Located in Antioquía, Colombia, the Itagüí unit is a steel service center that produces drawn wire, wire mesh and customized rebar-based products for the construction industry. This plant processes wire rod purchased in the international markets, rebar received from the Manizales Steel unit and rebar purchased in the international markets.

**Villa Nueva unit:** Located in Guatemala, Guatemala, the Villa Nueva unit produces galvanized sheets for the construction industry and for further processing in other units in Central America. It also has a steel service center that produces slitted, roll-formed and cut-to-length products, and profiles for the construction industry. This plant processes hot-rolled, cold-rolled and coated coils received from Ternium Mexico's units in the Nuevo León area and from the international markets.

**San Salvador and Managua units:** The San Salvador unit in San Salvador, El Salvador, and the Managua unit in Managua, Nicaragua, are steel service centers that produce roll-formed products for the construction industry. These plants process coated coils received mainly from the Villa Nueva unit.

**San José unit:** Located in San José, Costa Rica, this is a steel service center that produces roll-formed products and profiles for the construction industry. This plant processes hot-rolled, cold-rolled and coated coils received from Ternium Mexico's units in Nuevo León and from the Villa Nueva unit.

In addition, Ternium is building a steel bar and coil mill in Palmar de Varela, Atlántico, Colombia. With annual production capacity of 520,000 tons and total investment of approximately \$90 million, the new steel bar and coil mill will increase Ternium's upstream integration in the country. The new mill, expected to be completed during 2019, will enable us to expand our market share in Colombia's dynamic construction sector by offering an alternative to imports in the country's northern region.

#### Mining Production Facilities

Ternium has iron ore production facilities in Mexico. We have a 100% interest in Las Encinas, and a 50% interest in Consorcio Peña Colorada, and conduct our mining activities through these companies. In 2018, the substantial majority of our iron ore production was consumed internally at Ternium's steelmaking facilities in Mexico. The following table provides an overview of Ternium's active mining operations:

Company	Mine	Location	Type of Mine
Las Encinas	Aquila	Aquila, Michoacán	Open pit
Las Encinas	Las Palomas	Pihuamo and Tecalitlán, Jalisco	Open pit
Consorcio Peña Colorada	Peña Colorada	Minatitlán, Colima	Open pit

In addition, Las Encinas owns two other mines which are substantially exhausted: El Encino and Cerro Nahuatl.

The following table provides an overview, by type of facility, of Ternium's production capacity as of December 31, 2018:

Production facility	Las Encinas		Consorcio Peña Colorada <sup>(1)</sup>	
	Quantity	Capacity <sup>(2)</sup>	Quantity	Capacity <sup>(2)</sup>
Crushing Plant <sup>(3)</sup>	2	4,500	1	18,000
Concentration Plant <sup>(3)</sup>	1	3,500	1	16,300
Pelletizing Line	1	1,900	2	4,100

(1) Figures correspond to total capacity. Ternium has a 50% interest in Consorcio Peña Colorada.

(2) In thousands of tons per year. Crushing capacity for Las Encinas includes crushing lines located close to the Aquila and El Encino mines.

(3) The capacity figures for the crushing and concentration plants refer to the plants' iron ore processing capacity. The plants' actual iron ore concentrate production depends on the iron ore grade of the processed material.

The following table provides a description of Ternium's tailings dams as of December 31, 2018:

Dam / pond	Las Encinas			Consorcio Peña Colorada <sup>(1)</sup>		
	Cerro Náhuatl	Alzada / 1	Alzada / 2	Guásimas	Arrayanal / 1	Arrayanal / 2
Type of structure	Downstream	Downstream <sup>(3)</sup>	Downstream	Combined <sup>(4)</sup>	Downstream <sup>(3)</sup>	Downstream
Status	Idled	Operative	In construction	Closing procedure	Operative	Operative
Deposits volume <sup>(2)</sup>	9	10	—	51	17	1

(1) Figures correspond to total capacity. Ternium has a 50% interest in Consorcio Peña Colorada.

(2) In million cubic meters.

(3) Includes upstream embankments in non-relevant zones.

(4) Six out of a total 14 embankments were built upstream. Four embankments were built centerline and another four were built downstream.

#### Las Encinas

Las Encinas produces iron ore pellets and magnetite concentrate in Mexico. At present, Las Encinas operates the Aquila and Las Palomas open pit mines located in Michoacán and Jalisco, respectively.

Las Encinas facilities include two crushing plants (located close to each of the Aquila and El Encino mines), and a concentration and pelletizing plant located in Alzada, Colima, approximately 160 kilometers from the Aquila mine. Its major processing facilities (crushing, concentration and pelletizing facilities) include two primary crushers and a dry cobbling plant located close to the Aquila mine, and horizontal and vertical ball mills and several stages of magnetic separation in the Alzada facilities. Las Encinas has an operational tailings dam in Alzada and an idled tailings dam located in Cerro Náhuatl. Las Encinas is in the process of expanding its tailings deposit capacity in its tailings dam in Alzada.

The iron ore pre-concentrate is transported from the Aquila mine to a transfer station at Tecoman, Colima, by truck and from Tecoman to the Alzada facilities by rail and truck for processing in the concentration plant. The iron ore extracted from the Las Palomas mine is currently transported by truck to El Encino to be processed in our crushing facility. In addition, El Encino and our plant located in Alzada may receive, from time to time, magnetite iron ore purchased by Las Encinas from other local concessionaires. The crushed iron ore is transported from El Encino to the Alzada facilities by truck for processing in the concentration plant in Alzada. The iron ore pellets produced in the Alzada facilities are transported by rail to Ternium Mexico's integrated facilities in Monterrey and Puebla, Mexico. The Aquila and El Encino operations and the Alzada facilities receive electrical power from the Comisión Federal de Electricidad, or CFE, the Mexican state-owned electric utility company.

#### Active mines

At the Aquila site, Las Encinas holds all the mining rights for the extraction of iron ore. The Aquila operations (including an open pit mine and crushing facilities) stand on 383 hectares, which are leased to Las Encinas by the local community of San Miguel de Aquila. The lease agreement allows Las Encinas to perform all mining activities, including the extraction of iron ore, necessary to exploit the ore located in mining rights granted to Las Encinas by the Mexican federal authorities until the permanent closure of the mine. Las Encinas has operated this mine since 1998. Aquila is a mine composed predominantly of magnetite with a hematite roof and sulphides and silicates gangue. The form of mineralization is massive and disseminated (mineralized hornfels, endoeskarn), with mineralized gaps. The mine site is hosted along a large failure line and between the contact of an intrusive diorite and limestone, and the shape of the deposit is slightly amorphous, crossed by a countless number of dams and mainly controlled by geological structures.

At the Pihuamo-Tecalitán site, Las Encinas holds mining rights for the extraction of iron ore over 376 hectares. The Las Palomas operations (an open pit mine) stand on an area owned by Las Encinas, which started operating this mine in 2017.

Las Palomas is a skarn mine with calcareous-pelitic ferrous type. It is formed by massive, and bordered by disseminated mineral. The bodies are disposed in concordant tabular horizons with a northwest and southeast-oriented pseudo stratification and northeast-oriented dip. The mineralization is predominantly magnetite and the gangue mineral is composed of garnet, pyrite and calcite. The surrounding rocks are skarn (calcareous protolyte, clayey calcareous and Cretaceous sandy) or hornfels (clayey protolyte). The stratigraphic sequence is affected by dyke intrusions of monzonitic and granite composition.

#### Mines under exploration

Las Encinas holds mining rights over other areas scattered throughout Michoacán, Jalisco and Colima, Mexico. Las Encinas has developed and may continue pursuing the development of small to mid-sized mining operations similar to Las Palomas, as a way to diversify its sources of iron ore and to make effective use of its mining rights in the region.

#### Exhausted mines

The El Chilillo open pit mine was operated until 2015. The El Chilillo core reserves were exhausted, the mine's operations were suspended and the land returned to the owners. Ternium has already completed the requisite restoration works and is seeking closure approval from the applicable environmental authorities.

The El Encino open pit and underground mine was operated until 2011. The El Encino core reserves were exhausted and the mine's operations have been suspended. Ternium is currently evaluating the steps required to proceed with its permanent closure. The crushing and transfer facilities at El Encino are still in operation and will remain active to receive, process and transfer to the Alzada pelletizing plant iron ore that Las Encinas buys from time to time from other local concessionaires.

The Cerro Nahuatl open pit mine located in Colima, Mexico, operated until 2008. The Cerro Nahuatl core reserves were exhausted and the mine's operation has been suspended. Ternium is currently following the steps required to proceed with its permanent closure.

#### Consorcio Peña Colorada

Consorcio Peña Colorada, a company owned 50% by Ternium and 50% by ArcelorMittal S.A. or ArcelorMittal, produces iron ore pellets and magnetite concentrate in Mexico. Consorcio Peña Colorada operates the Peña Colorada open pit mine as well as a concentrating facility and a two-line pelletizing facility. Consorcio Peña Colorada owns part of the property where its mine and processing facilities stand, and leases 1,204 hectares adjacent to the mine to deposit removed material and, in the future, to exploit ore reserves as part of the regular short-term and long-term life of mine plan.

Consorcio Peña Colorada has operated since 1974 and holds mining rights over 39,980 hectares. The Peña Colorada mine is a complex polyphase iron ore deposit. Several magmatic and hydrothermal events produced iron mineralization as skarns or skarnoids, and late dikes and faults that crosscut the mineralized bodies. The main mineralization events are a massive ore body and a disseminated ore body, within polymictic breccia zones.

The concentration plant is located at the mine in Minatitlán, Colima, and the pelletizing plant is located near the Manzanillo seaport on the Pacific coast in Colima, 50 kilometers from Minatitlán. Consorcio Peña Colorada's major processing facilities include a primary crusher, a dry cobbing plant, one autogenous mill, horizontal and vertical ball mills, several stages of magnetic separation and two pelletizing lines. The concentrate is sent as a pulp through a pipeline from the mine and mineral processing plant in Minatitlán to the pelletizing plant in Manzanillo. Consorcio Peña Colorada has an operational tailings dam in Arrayanal, Colima, and a tailings dam in the process of closure located in Guásimas, Colima, with limited use. The Peña Colorada mine and the pelletizing plant receive electrical power from CFE. Peña Colorada is doing the preparatory works necessary to extract iron ore from new iron ore bodies at the mine.

Ternium is required to buy from Consorcio Peña Colorada half of the mine's annual production. For further information, see “—Raw Materials, Slabs, Energy and Other Inputs—Mexico—Iron Ore.” Iron ore concentrate and pellets sold to Ternium are shipped by rail from the mine to Ternium's facilities in Mexico or exported to third parties through the



Manzanillo port.

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## Iron ore reserves

The table below details Ternium's estimated proven and probable iron ore reserves as of December 31, 2018. The classification of the iron ore reserve estimates as proven or probable is based on drill hole spacing and reflects the variability in the mineralization at the selected cut-off grade, the mining selectivity and the production rate and ability of the operation to blend the different ore types that may occur within each deposit. Reserves are reported as Run of Mine (ROM). Tonnage is reported on a wet metric ton basis.

Iron ore reserves <sup>(1)</sup> as of	December 31, 2018				December 31, 2017			
	Proven		Probable		Total		Total	
	Million tons	% Fe	Million tons	% Fe	Million tons	% Fe	Million tons	% Fe
Las Encinas <sup>(2)</sup>	20	40	—	—	20	40	22	40
Peña Colorada <sup>(3)</sup>	106	22	103	21	209	22	230	21

In Peña Colorada, proven iron ore reserve estimates are based on drill hole spacing ranging from 25m x 25m to (1) 100m x 100m, and probable iron ore reserve estimates are based on drill hole spacing ranging from 50m x 50m to 300m x 300m. In Las Encinas, drill hole spacing may be greater.

(2) Includes exclusively the Aquila and the Las Palomas mines.

(3) Reported figures represent the total reserves at the Peña Colorada mine. Ternium has a 50% interest in Consorcio Peña Colorada.

The table below provides additional information on iron ore production and average estimated mine life.

Operations/Projects	% Ownership	In Operation Since	2018 Run of	2018	Estimated Mine Life (Years) <sup>(2)</sup>
			Mine Production (Million tons)	Saleable Production (Million tons) <sup>(1)</sup>	
Las Encinas <sup>(3)</sup>	100	1970	2.7	1.8	7
Consorcio Peña Colorada <sup>(4)</sup>	50	1974	13.3	4.0	13

(1) Saleable production consists of a mix of direct shipped ore (DSO), concentrate, pellet feed and pellet products which have an iron content of approximately 65% to 66%.

Mine life is derived from the life of mine plans and corresponds to the duration of the mine production scheduled from ore reserve estimates only. The production varies for each operation during the mine life and, as a result, the

(2) mine life is not necessarily the total reserve tonnage divided by the 2018 production. Both the Aquila and Las Palomas mines may extend their life beyond the estimated mine life indicated above as a result of iron resources not yet included as proven or probable reserves.

(3) Includes exclusively the Aquila and Las Palomas mines.

(4) Reported figures represent the total production of Consorcio Peña Colorada, in which Ternium has a 50% interest.

## Changes in iron ore reserve estimates (2018 versus 2017)

Las Encinas's iron ore reserve estimates as of December 31, 2018 were 20 million tons on a run-of-mine basis (with a 40% average iron grade), decreasing by 3 million tons compared to those recorded as of the end of 2017. This decrease in tonnage was mainly due to the depletion of reserves during 2018.

Peña Colorada's iron ore reserve estimates as of December 31, 2018 were 209 million tons on a run-of-mine basis (with a 22% average iron grade), decreasing by 21 million tons compared to those recorded as of the end of 2017. This decrease in tonnage was principally due to the depletion of reserves during the year and changes in our mining plan. The estimates of proven and probable ore reserves at our mines and the estimates of the mine life included in this annual report have been prepared by Ternium's experienced engineers and geologists. Ternium has not commissioned an independent verification of the methods and procedures used to determine reserves, nor has it commissioned independent audits on iron ore reserve estimates.



The reserve calculations were prepared in compliance with the requirements of SEC Industry Guide 7, under which: Reserves are the part of a mineral deposit that could be economically and legally extracted or produced at the time of the reserve determination.

Proven reserves are reserves for which (a) quantity is computed from dimensions revealed in outcrops, trenches or working or drill holes; grade and/or quality are computed from the results of detailed sampling; and (b) the sites for inspection, sampling and measurement are spaced so closely and the geologic character is so well defined that size, shape, depth and mineral content of reserves are well established.

Probable reserves are reserves for which quantity and grade and/or quality are computed from information similar to that used for proven reserves, but the sites for inspection, sampling and measurement are farther apart or are otherwise less adequately spaced. The degree of assurance, although lower than that for proven reserves, is high enough to assume continuity between points of observation.

The demonstration of economic viability is established through the application of a life of mine plan for each operation or project providing a positive net present value on a cash forward-looking basis. Economic viability is demonstrated 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. Ore reserve estimates are updated annually in order to reflect new geological information and current mine plan and business strategies. 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. For a description of risks relating to reserves and reserve estimates, see Item 3. “Key Information—D.Risk Factors—Risks Relating to our Mining Activities—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.”

Our mining leases are of sufficient duration (or convey a legal right to renew for sufficient duration) to enable all ore reserves on the leased properties to be mined in accordance with current production schedules. Our ore reserves may include areas where some additional approvals remain outstanding but where, based on the technical investigations we carry out as part of our mine planning process and our knowledge and experience of the approvals process, we expect that such approvals will be obtained as part of the normal course of business and within the timeframe required by the current life of mine schedule.

Our tailings dams stability was assessed taking into consideration international standards and seismic design recommendations of CFE's 2015 civil works design manual. In addition, we have launched supplementary studies under stricter conditions to confirm the stability of selected dams. As some of our tailings dams were built more than twenty years ago, there could be less available information on these structures than on those built more recently.

#### Property, Plant and Equipment

The table below details Ternium’s mining segment property, plants and equipment value as of December 31, 2018.

In millions of U.S. dollars Property, Plant and Equipment

Las Encinas	123.5
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Consorcio Peña Colorada	223.9
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#### Production process

Ternium specializes in manufacturing and processing finished steel products. In addition, Ternium extracts and processes iron ore and produces electricity.

Ternium’s facilities use different technologies and have different levels of integration. The basic inputs for steel production are iron ore and energy. Iron ore is used in three different formats: fines and lumps, which are purchased in the marketplace, and pellets, which are partly purchased in the marketplace and partly produced by Ternium.

Ternium’s steel production processes consume energy mainly in the form of natural gas, coal and electricity.

Iron ore extraction and processing. The iron ore pellet production process begins with the extraction of iron ore from open pit mines owned and operated by Ternium in Mexico. The extraction process consists of removing waste and ore



from the surface with explosives, loading it and transporting it by truck to the crushing facilities where it is resized to a specified size.

After crushing, the ore goes through several grinding and concentration stages. Grinding reduces the size and changes the shape of the ore while concentration, through magnetic drums, separates the iron from the sterile material to obtain an iron ore concentrate with high iron content. This process is carried out using water as an auxiliary element. Excess water is afterwards eliminated through a filtering process, leaving only the necessary humidity for the formation of pellets using pelletizing disks. Pellets are separated according to their size and are then hardened in ovens and shipped to the steel producing facilities.

**Steel production.** Ternium produces semi-finished steel in the form of thin slabs, slabs, billets and round bars through the blast furnace and the electric arc furnace methods.

Under the blast furnace method, which is used in Brazil and Argentina, iron ore pellets, lumps, sinter (a mixture of iron ore fines and limestone produced in sinter facilities) and coke (a solid residue obtained from the distillation of coal produced in coking batteries) are mixed in the blast furnaces in a process that melts and reduces the iron ore, obtaining pig iron. The molten pig iron is then mixed with steel scrap and other products in a basic oxygen furnace through a process that removes impurities from the pig iron by injecting pure oxygen at high pressure into the molten metal, burning-off carbon and other elements. The molten steel is then cast using the continuous casting method, into slabs.

Under the electric arc furnace method, which is used in Mexico and Colombia, the iron metal charge is heated with other elements to obtain molten steel. The molten steel is then cast, using the continuous casting method, into billets and thin slabs. The iron metal charge in the Apodaca and Manizales plants is steel scrap, and the iron metal charge in the Monterrey and Puebla plants is a mix of DRI and steel scrap. The DRI results from the conversion of pellets in the DRI modules. One of Monterrey's DRI plants includes Hytemp® technology, which permits the hot discharge of the DRI to the electric arc furnace, generating significant energy savings and improving productivity.

**Steel processing.** Semi-finished steel is then processed into finished products using hot-rolling, cold-rolling, coating, tubing, paneling, slitting and cut-to-length facilities among other processes. In addition, in Mexico and Argentina Ternium has been processing steel slabs produced in Ternium Brazil and/or purchased in the marketplace, as in Mexico its steel processing capacity is higher than its steel production capacity and, in Argentina, its steel processing capacity utilization has been higher in recent years than its steel production capacity. Ternium may purchase hot-rolled, cold-rolled and coated products as well for further processing in its lines.

Thin-slabs, slabs and billets are processed in the hot-rolling mills in Mexico, Argentina and Colombia to obtain hot-rolled products using different technologies. In the case of flat products, hot-rolled coils are obtained from thin or conventional slabs. Thin slab hot-rolling, a technology Ternium uses only in Mexico, requires less energy than conventional slab hot-rolling, as it does not require a roughing section at the mill and does not need to be reheated from room temperature to reach rolling temperature. In the production of long products, which is carried out in Mexico and Colombia, billets are reheated and taken to rolling temperature. The softened steel is processed in the rolling trains to obtain wire rods and rebars as finished long products and, depending on their final use, rebars can be further processed into stirrups and other customized shapes in our service centers in Colombia.

Depending on its final use, the hot-rolled coils are then tempered and/or pickled, both in Mexico and Argentina, before being sent for sale as coils or cut into steel sheets. Alternatively, the hot-rolled coils may be sent to a cold-rolling mill where they are put under a deformation process at room temperature to reduce their thickness and obtain cold-rolled coils. Cold-rolled coils can be sold in crude form to the market (full hard) or processed in the reheating ovens, annealing bays and temper lines to modify their metallurgic and physical characteristics. The tempered products can be sold as coils or sheets or further processed by adding coatings.

Cold-rolled coils can be further processed into tin plate at Ternium Argentina's facility (by adding a thin layer of tin), into galvanized or electrogalvanized sheets at several of Ternium's facilities in Mexico, the United States and Guatemala and at Ternium Argentina's facility (by adding a thin layer of zinc to the products through different processes) or into pre-painted products. Some of these products can be further processed into slitted, cut-to-length and tailor-made products according to customers' needs at Ternium's service centers, which are located in several countries. In addition, coated, cold-rolled and hot-rolled coils can be further processed into tubular products, such as welded

pipes, insulated panels and architectural panels, among other products.

## Sales

## Net Sales

Ternium is organized into two reportable segments: Steel and Mining. The Steel segment includes the sales of steel products and other products like electricity and pig iron. The Mining segment includes the sales of iron ore products, which are primarily consumed internally. We report steel shipments under three geographical regions: Mexico, the Southern Region and Other Markets. For further information on our reportable operating segments and geographical information, see note 5 to our consolidated financial statements included elsewhere in this annual report. Ternium primarily sells its steel products in Latin America and the United States, where it can leverage its strategically located manufacturing facilities to provide specialized products, delivery services to its customers and reduced freight costs. In 2018, the substantial majority of our iron ore production was consumed at Ternium's steelmaking facilities in Mexico.

Our total consolidated net sales of steel and mining products amounted to \$11.5 billion in 2018, \$9.7 billion in 2017 and \$7.2 billion in 2016. For further information on our net sales of steel and mining products, see Item 5. "Operating and Financial Review and Prospects—A. Results of Operations."

The prices of our steel products generally reflect international market prices for similar products. We adjust prices for our products periodically in response to changes in the import prices of foreign steel, export prices, and supply and demand. For further information, see Item 5. "Operating and Financial Review and Prospects—Overview." The actual sales prices that we obtain for our products are also subject to the specifications, sizes and quantity of the products ordered.

The following table shows Ternium's net sales by reportable operating segment, Steel and Mining, for the years indicated:

In millions of U.S. dollars	For the year ended		
	December 31,		
	2018	2017	2016
Mexico	6,134.0	5,378.6	4,477.6
Southern Region	1,933.4	2,313.6	1,865.9
Other Markets	3,023.6	1,699.0	864.4
Total steel products net sales	11,091.0	9,391.2	7,208.0
Other products (1)	362.4	309.1	13.8
Total steel segment net sales	11,453.4	9,700.3	7,221.8
Total mining segment net sales	282.0	271.5	204.9
Intersegment eliminations	(280.6 )	(271.4 )	(202.7 )
Total Net Sales	11,454.8	9,700.3	7,224.0

(1)The item "Other products" primarily includes Ternium Brasil's and Ternium Mexico's electricity sales.

The following table shows, where applicable, Ternium's shipment volumes by reportable operating segment, Steel and Mining, for the years indicated:

In thousands of tons	For the year ended		
	December 31,		
	2018	2017	2016
Mexico	6,544.8	6,622.8	6,405.2
Southern Region	2,301.1	2,456.0	2,220.8
Other Markets	4,105.2	2,517.7	1,138.1
Total steel products sales volumes	12,951.1	11,596.6	9,764.0
Total mining segment sales volumes	3,616.3	3,551.1	3,309.6





## Steel

### Mexico

Sales to customers in Mexico accounted for 55% of Ternium's net sales of steel products during 2018, 57% during 2017 and 62% during 2016. For further information, see Item 5. "Operating and Financial Review and Prospects—A. Results of Operations—Fiscal Year Ended December 31, 2018 compared to Fiscal Year Ended December 31, 2017—Net Sales" and "—Fiscal Year Ended December 31, 2017 compared to Fiscal Year Ended December 31, 2016—Net Sales." Most of Ternium's Mexican customers are located near its plants. Flat steel non-coated products are mainly sold in Mexico to construction companies, industrial customers in the automotive, packaging, electric motors and service center industries, as well as distributors. The principal segments in the Mexican coated steel market are construction, automotive, home appliances and manufacturing (air conditioning, lamps and furniture). Ternium serves industrial customers, who require high-quality specifications, as well as commercial customers through service centers and warehouses. Rebar and wire rod markets in Mexico are characterized by a large number of orders of small volume, and competition is largely based on price. The customer base for bar and rod products in Mexico consists primarily of independent dealers and distributors, who in turn retail the products to their customers in the construction industry. Ternium markets its tubular products mainly through Mexican independent distributors, and the balance is sold directly to industrial customers.

### Southern Region

Sales to customers in the Southern Region accounted for 17% of Ternium's net sales of steel products during 2018, 25% during 2017 and 26% during 2016. The vast majority of sales in the Southern Region are made to customers in Argentina. For further information, see Item 5. "Operating and Financial Review and Prospects—A. Results of Operations—Fiscal Year Ended December 31, 2018 compared to Fiscal Year Ended December 31, 2017—Net Sales" and "—Fiscal Year Ended December 31, 2017 compared to Fiscal Year Ended December 31, 2016—Net Sales." Ternium's sales in this region are oriented toward the construction and agriculture sectors, the automotive industry, the packaging sector (for food, paints, sprays and petrochemicals), the tube and pipe sector (related to liquids and gas transportation and distribution networks), the capital goods sector and the home appliances sector. The customer base in the Southern Region consists primarily of independent small and medium-sized companies and distributors, which in turn process or retail products to their customers in different market sectors. In addition, Ternium serves large industrial customers, such as customers in the automotive industry, which require customized products and services that Ternium can provide through its service centers and finishing facilities. Ternium's principal customers in the Southern Region are located near Ternium Argentina's production facilities in Argentina. Ternium's net sales in Argentina represent approximately 16% of our total net sales. We also sell a small portion of our production to customers in Bolivia, Chile, Paraguay and Uruguay.

### Other Markets

Sales to customers in other markets, which include mainly shipments to the United States, Brazil, Colombia and Central America, accounted for 27% of Ternium's consolidated net sales of steel products during 2018, 18% during 2017 and 12% during 2016. For further information, see Item 5. "Operating and Financial Review and Prospects—A. Results of Operations—Fiscal Year Ended December 31, 2018 compared to Fiscal Year Ended December 31, 2017—Net Sales" and "—Fiscal Year Ended December 31, 2017 compared to Fiscal Year Ended December 31, 2016—Net Sales." Following the acquisition of Ternium Brasil and related transactions in September 2017, we started shipping steel slabs to tkAG's former re-rolling facility in Calvert, Alabama, United States, and to Usiminas in Brazil. For further information on the acquisition of Ternium Brasil see note 3 to our consolidated financial statements included elsewhere in this annual report.

Finished steel customers in the United States are served directly through the Shreveport plant and through Ternium Internacional's Houston, TX, commercial office. The Gulf Coast and a large portion of the West Coast in particular, are regions for which our Mexican facilities have distribution advantages. Our main markets in the United States are the construction industry and the energy related sectors.

Customers in Colombia are served directly through Ternium Colombia. Ternium offers a variety of customized products through its various service centers in the country. Our main local markets are the construction industry and the energy related sectors.

Customers in Central America are served directly through Ternium's facilities in Guatemala, El Salvador, Nicaragua and Costa Rica. Ternium offers a variety of customized products through its various service and distribution centers in the region. Our main market in Central America is the construction industry.

#### Mining

Ternium's shipments of iron ore mainly include those made by Las Encinas and 50% of those made by Consorcio Peña Colorada. Iron ore shipments are destined mainly for internal consumption within Ternium's Steel segment and surpluses, if any, are destined for the export market. For further information, see Item 5. "Operating and Financial Review and Prospects—A. Results of Operations—Fiscal Year Ended December 31, 2018 compared to Fiscal Year Ended December 31, 2017—Net Sales" and "—Fiscal Year Ended December 31, 2017 compared to Fiscal Year Ended December 31, 2016—Net Sales."

#### Marketing

##### Steel

Our marketing strategy in our steel segment is to expand higher margin value-added products and services in Ternium's sales mix. Over time, we expect to increase Ternium's offerings of value-added products, such as cold-rolled sheets and coated and tailor-made products, and services, such as just-in-time deliveries and inventory management. In order to do so, Ternium will increase processing capacity and will continue to work with its customers to anticipate their needs and develop customized products for particular applications and maintain a strategic presence in several steel markets through its network of commercial offices. A principal component of Ternium's marketing strategy is establishing lasting and close relationships with customers. This allows Ternium to provide assistance to its customers in their use of steel products and to obtain downstream information that can be applied to future product development. Ternium adapts its marketing strategy according to the different regions it serves. Its sales force specializes in different regional requirements, ranging from product specifications to transport logistics.

In order to strengthen Ternium's positioning in regional markets and offer services to customers, Ternium manages its exports from countries where it has manufacturing facilities through a network of commercial offices. Ternium operates through strategically located subsidiaries, providing customers with services and support. Ternium has extensive experience promoting steel products. Its marketing expertise helps us expand our position in current markets and to develop new ones.

##### Mexico

Several local and foreign steel producers direct part of their sales efforts to the Mexican market and, as a result, Ternium engages significant marketing efforts in this country. Ternium's steel customers in Mexico are in the construction, automotive, metal-mechanic and home appliances sectors, among other industries. In Mexico, we offer customized services through our network of service and distribution centers.

Through our service centers, located in northern and central Mexico, Ternium can cut and roll-form its products to specific client requirements. Customized products include metallic roofing, sheets and strips used in the automotive industry and cut-to-length products used in the home appliance and construction industries. Ternium has several distribution centers and commercial offices in the country, which provide services such as logistics, stock management and customer assistance, as well as analysis of businesses opportunities in their respective markets. Ternium Mexico has a department focused on the development of small and medium-sized companies in Mexico under a program created by the Techint Group, a group of international companies controlled by San Faustin, for the development of its local customers and suppliers named Propymes. The objective of the program is to improve their competitiveness, to increase their exports and to allow them to substitute imports with local products. Approximately 680 companies are part of this program in Mexico, which provides support for industrial, training, and institutional requirements of the participating companies.

Ternium's experienced sales force specializes in the needs of each market sector and focuses on value-added products and services. In this competitive and end-user oriented market, the extensive use of well-known commercial brands



allows customers to clearly recognize Ternium's products. Ternium seeks to increase its competitive advantage by providing value-added services, including the technical assistance related to steel use and production, and developing new steel products.

#### Southern Region

Ternium's sales efforts in this region are oriented toward serving the specific needs of different market sectors, such as the construction industry, the automotive industry, the home appliances sector, the packaging sector (for food, paints, sprays and petrochemicals), the agricultural equipment and capital goods sector, the tube and pipe sector (related to liquids and gas transportation and distribution), and steel processors.

Through Ternium Argentina's service centers, Ternium can cut, paint or roll-form its products to specific client requirements. Customized products include metallic roofing, auto parts, steel for agricultural machinery, different types of tin used to produce sprays and food containers and cut-to-length products used in the home appliance and construction industries.

In this region, Ternium has commercial offices in Argentina and Uruguay. These offices provide services such as market development, analysis of businesses opportunities, and customer support in their respective countries. Propymes was implemented in Argentina in 2002, with the objective of promoting the local industry. Approximately 900 companies are part of this program, which provides support for industrial, training, commercial, financial and institutional requirements of the participating companies.

#### Other Markets

Following the acquisition of Ternium Brasil and related transactions in September 2017, we started shipping steel slabs to tkAG's former re-rolling facility in Calvert, Alabama, United States, under an agreement to supply a total of 3.5 million tons of slabs through December 2020, and to Usiminas in Brazil. For further information on the acquisition of Ternium Brasil see note 3 to our consolidated financial statements included elsewhere in this annual report.

Ternium's finished steel customers in Other Markets are mainly in the construction and energy-related industries in Colombia, the United States and Central America. In Colombia and Central America, we offer customized services through our network of service and distribution centers.

Through Ternium's facilities and service centers located in Colombia, Costa Rica, El Salvador, Guatemala, Nicaragua and southern United States, Ternium can cut, paint or roll-form its products to specific client requirements mainly in the construction industry. In addition, Ternium has a commercial office in Houston, TX, which enables Ternium to offer differentiated services to various customers.

A small share of Ternium's shipments is destined for steel markets outside the Americas. Sales to Europe, Asia and Africa are carried out mainly through Ternium's commercial office in Spain. This office is focused on trading activities, including the development of commercial and marketing activities.

#### Mining

Ternium's mining activities are mainly aimed at securing the supply of iron ore for our steel-making facilities in Mexico. Surplus production of iron ore, if any, is commercialized to third parties. We export iron ore through the Manzanillo port that is located on Mexico's Pacific coast, mainly to customers in the Chinese iron ore market.

#### Competition

##### Steel

The steel industry operates predominantly on a regional basis, with large industry participants selling the bulk of their steel production in their home countries or regions, where they have natural advantages and are able to more effectively market value-added products and provide additional customized services. Despite the limitations associated with transportation costs, as well as the restrictive effects of protective tariffs and other trade restrictions, international trade of steel has increased in the last two decades with production shifting towards low-cost production regions. In addition, since 2002, several large steel manufacturers have merged with each other or acquired steel companies in other parts of the world. This wave of consolidation has resulted in a number of large, global producers with significant operations in several regions and/or continents, contributing to the increasing globalization of the steel industry. Considered as a whole, however, the steel industry still remains considerably fragmented, compared with



market conditions characterizing certain of our suppliers and customers, e.g. iron ore suppliers and the automotive industry.

Steel consumption has historically been centered in developed economies, such as the United States, Western Europe and Japan. However, in the last two decades steel consumption in Asia, and in particular China, has increased significantly.

There has been a trend toward steel industry consolidation among Ternium's competitors. Below is a summary of the most significant transactions:

• June 2006: Mittal Steel Company, N.V. and Arcelor S.A. merge to create ArcelorMittal, the world's largest steel company.

• March 2007: Votorantim S.A. acquires Colombia's Acerias Paz del Rio S.A.

• April 2007: Tata Steel Limited, or Tata Steel, completes the acquisition of Corus Group Plc.

• July 2007: Gerdau Ameristeel Corporation acquires Chaparral Steel Company.

• August 2007: United States Steel Corporation, or US Steel, acquires Stelco Incorporated.

• March 2008 to May 2008: OAO Severstal acquires WCI Steel Incorporated, Esmark Incorporated and a mill located in Sparrows Point (subsequently, during 2011, it divests Sparrows Point, Warren and Wheeling facilities).

• October 2012: Nippon Steel Corporation and Sumitomo Metal Industries Limited merge to form NSSMC, the world's second largest steel company at the time.

• February 2014: ArcelorMittal and NSSMC acquire ThyssenKrupp Steel USA LLC, a steel processor based in Alabama, through a 50/50 joint venture.

• September 2014: AK Steel Holding Corporation and Steel Dynamics Incorporated acquire OAO Severstal's U.S. Dearborn and Columbus operations, respectively.

• June 2016: Hebei Iron and Steel Group, or HBIS, acquire Serbian Zelezara Smederevo steel mill, becoming the world's third largest steel producer.

• December 2016: Baosteel Group Corporation and Wuhan Iron and Steel Corporation merge to create China Baowu Steel Group Corporation, or Baowu Steel Group, which became the world's second largest steel producer.

• March 2017: NSSMC acquires a majority stake in Nisshin Steel Company Limited, a Japanese steel company.

• May 2018: Tata Steel acquires a controlling stake in bankrupt Indian steel company Bhushan Steel Limited.

• June 2018: tkAG and Tata Steel signed a 50/50 joint venture to combine European steel activities, creating the second largest flat steel supplier in Europe.

• October 2018: the committee of creditors of Essar Steel India Limited approve a resolution plan submitted by ArcelorMittal, a step to gain control over the bankrupted steel company.

Despite this trend, the global steel market remains highly fragmented. In 2017, the most recent year for which statistics are available, the five largest steel producers, ArcelorMittal, Baowu Steel Group, NSSMC, HBIS and Posco Iron and Steel Company, or Posco, accounted for 18% of total worldwide steel production, compared to 15% for the five largest steel producers in 2000.

Steel prices in general have exhibited significant volatility in the last decade. From 2000 to 2002, the industry, especially in North America, experienced fluctuating capacity utilization, low-demand growth levels and other adverse conditions, which led to depressed steel prices, adversely impacting many steel producers' profitability. Since 2003, steel prices strengthened worldwide, due to higher economic growth in most regions, particularly China and other developing countries, as well as higher raw material prices (for iron ore, ferroalloys and energy). During the first quarter of 2008, steel prices went up significantly due to higher demand for steel products and higher input costs resulting from constraints in the availability of raw materials. However, this trend reversed beginning in the second half of 2008 due to a global economic downturn, with prices and costs declining steeply. Since 2009, a number of events have contributed to continuously volatile steel price cycles, such as spikes and depressions in raw material

prices, new steelmaking capacity additions (at a pace higher than steel demand growth), the idling and restart of steelmaking capacity, adverse economic conditions in Europe in 2012 and decreasing apparent steel use in China in 2014 and 2015. Particularly during 2015, the steel industry continued to exhibit overcapacity combined with lower steel consumption in China, which together contributed to a record level of low-priced Chinese steel exports (112 million tons), in many cases under unfair trade conditions, that exerted significant pressure on global steel prices. However, during the rest of 2016 and 2017, steel prices followed an upward trend and fluctuated at higher levels thereafter as a result of higher industry steel production costs and improved steel demand as well as declining Chinese steel exports. Chinese steel exports in 2018 were 69 million tons, 43 million tons lower than the 2015 exports peak.

#### Mexico

Ternium competes in the Mexican steel market with domestic, United States and other foreign steel producers. According to the Mexican chamber of the iron and steel industry (Cámara Nacional de la Industria del Hierro y el Acero, or Canacero), imports of flat steel products into Mexico accounted for approximately 7.9, 8.6 and 7.6 million tons in 2018, 2017 and 2016, respectively.

Our largest Mexican competitor in the flat products market is Altos Hornos de México S.A.B. de C.V., or AHMSA, an integrated steel producer located in Monclova, Coahuila, which produces a wide variety of steel products. AHMSA focuses on low-value-added products such as plate and commercial quality hot-rolled and cold-rolled coils. Other significant competitors with facilities in the country are Galvasid S.A. de C.V. (controlled by Grupo LM), a producer of galvanized coils that has announced new investments in galvanizing and painting lines; Zincacero S.A. de C.V. (controlled by Grupo Villacero), a producer of galvanized and pre-painted coils; Posco, a Korean steel company with a galvanizing facility; and Talleres y Aceros S.A. de C.V., or TYASA, which has a flat steel Castrip® mill and has commenced works in order to start up cold-rolling, galvanizing and painting facilities during 2019.

Our largest foreign competitors in the flat products market are ArcelorMittal, which has commenced works in order to start up a new hot-rolling mill in Mexico during 2020; Nucor Corporation, which is also building a new steel galvanizing facility in the country to start up during 2019 through a joint venture with JFE Steel Corporation; and US Steel. In addition, Steel Dynamics Incorporated has officially announced plans to build a new steel mill in southern United States including hot-rolling, cold-rolling, galvanizing and painting facilities; and Big River Steel LLC has also officially announced plans to build a new steel mill in southern United States including hot-rolling, cold-rolling and galvanizing facilities.

In the rebar market, Ternium's largest competitor is ArcelorMittal. To a lesser extent, Ternium also faces competition from Deacero S.A. de C.V., or Deacero, and from Grupo Simec S.A.B. de C.V., or Simec, controlled by Grupo ICH. In the low-carbon wire rod market, Ternium's main competitors are Deacero, ArcelorMittal and, to a lesser extent, TYASA and Simec.

In the small diameter welded pipe market, Ternium's main competitors are Productos Laminados de Monterrey S.A. de C.V., or Prolamsa, Grupo LM, Tubería Laguna S.A. de C.V., Maquilacero S.A. de C.V., or Maquilacero, and imports. Orders in this market are usually small and cover a wide range of product specifications.

#### Southern Region

Ternium's most significant market in the Southern Region is Argentina, which in 2018 accounted for approximately 93% of sales in the Southern Region. Ternium Argentina is the main producer of flat-rolled steel products in Argentina. Its main competition in the Argentine flat steel market are imports, particularly from Brazil. The main Brazilian producers of flat steel value-added products are Usiminas, Companhia Siderúrgica Nacional and ArcelorMittal. Ternium maintains a leading position in the flat steel market of Paraguay and is present in the flat steel markets of Bolivia, Chile and Uruguay, where the location of Ternium's facilities in neighboring Argentina provides a logistical advantage to supply these markets vis-à-vis its foreign competitors.

#### Other Markets

Within the Other Markets region, Ternium's most significant markets for finished steel products are Colombia, the southern United States and Central America. In addition, Ternium sells steel slabs mainly to ArcelorMittal and NSSMC's Calvert facility in the United States, and to Usiminas in Brazil.

Our subsidiary Ternium Colombia is the main flat steel processor in Colombia and is also a long steel producer. Its main competitors in the Colombian steel market are Acerías Paz del Río, Gerdau Diaco, Acerías de Colombia,



Siderúrgica Nacional and Siderúrgica del Occidente, and it also faces competition from imports.

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Ternium has a very small participation in the U.S. steel market in comparison with U.S. domestic steel manufacturers and importers. It successfully competes in the Gulf Coast and a large portion of the West Coast where its facilities have logistical advantages.

Ternium maintains a significant position in the coated flat steel market of Central America, supported by logistical advantages provided by nearby facilities located in Costa Rica, El Salvador, Guatemala, Nicaragua and Mexico. Despite these advantages, Ternium has been facing strong competition in Central America from importers in an oversupplied steel market.

In addition, Ternium keeps a presence in other markets in the Americas where it has also been facing strong competition from other importers.

#### Mining

The majority of iron ore supplies to the international seaborne market come from Australia and Brazil, from the major global miners Vale, Rio Tinto and BHP Billiton, as well as from iron ore junior companies in these countries. In Mexico, the main iron ore producers are AHMSA, ArcelorMittal and Ternium, which are, at the same time, major steel-making companies and iron ore consumers. Only a small portion of the iron ore obtained by these three companies is made available for sale in the Mexican or export market. There are also other small iron ore mining concessionaries that sell their production mostly to local steel-making operations.

#### Capital Expenditure Program

The main objectives of Ternium's current capital expenditure program are to:

- increase steel processing capacity;
- increase product range;
- reduce production costs;
- replace equipment;
- improve product quality, equipment reliability and productivity;
- comply with applicable safety and environmental standards; and
- provide enhanced customer services.

Capital expenditures in Ternium's facilities during 2018 amounted to \$520 million. The current status of the most significant projects is described below.

#### Steel

Mexico. During 2018, Ternium's capital expenditures in the steel segment in Mexico amounted to \$297 million and were mostly related to the following projects:

New hot-dipped galvanizing and painting lines. During 2018, Ternium made progress on its project to build new hot-dipped galvanizing and painting lines in its Pesquería unit. Expected to be completed during 2019, the new lines will have an annual production capacity of 350,000 and 120,000 tons, respectively.

New hot-rolling mill. During 2018, Ternium made progress on its project to build a new hot-rolling mill in its Pesquería unit. Expected to be completed by the end of 2020, the new line will have an annual production capacity of 4.1 million tons.

Environmental and safety projects. During 2018, Ternium advanced various environmental and safety projects mainly in the Guerrero, Churubusco and Puebla units. In the Guerrero unit, Ternium made progress on the replacement of pickling tanks, on improvements in the processing and handling of steel slag, on improvements in the treatment of sludge, on the upgrading of raw material storage yards, on the upgrading of conveyors' dusting extraction systems, and on improvements in vehicular circulation, among other projects. In the Puebla unit, Ternium concluded the construction of a new bag house for a steel shop.

Southern Region. During 2018, Ternium's capital expenditures in Argentina amounted to \$68 million and were mostly related to the following projects:

Enhancement of hot-rolling capacity. During 2018, Ternium Argentina made progress in the revamping of its hot-strip mill in the San Nicolás unit. Upon completion of this investment, annual slab processing capacity is expected to increase by 310,000 tons to a total of 3.2 million tons. The project includes new hardware and software for all the equipment and the replacement of the main electrical engines and of the strip cooling system.

Environmental and safety projects. During the year, Ternium Argentina made progress on several projects aimed at further improving environmental and safety conditions. Ternium concluded, among other projects, the revamping of the steel shop's primary de-dusting system; and a runoff water collection system and sedimentation treatment for the metallurgical coal and coke yards that enable the recycling of recovered material and the reduction of water pollution risks. Ternium also made progress on a new acid regeneration plant for a pickling line that enable an increase in acid processing capacity and the incorporation of best available technology for the recycling of metallic waste, among other projects.

Other Markets. During 2018, Ternium's capital expenditures in our facilities located in other countries amounted to \$102 million and were mostly related to the following projects:

New steel bar and coil mill in Colombia. During 2018, Ternium made progress in the construction of a new steel bar and coil mill in Palmar de Varela, Atlántico, Colombia. Expected to be completed during 2019, the new facility will have annual production capacity of 520,000 tons of reinforcing bars.

Several projects in Ternium Brasil's facilities. During 2018, Ternium made progress on several projects aimed at improving product quality and equipment reliability. In addition, Ternium completed, among other projects, the construction of a new water pipeline and pumping station to reduce water supply risks; and the pavement of roads and operational sites to improve the quality of the air.

#### Mining

During 2018, Ternium's capital expenditures in its mining segment in Mexico were \$53 million. Las Encinas' capital expenditures amounted to \$10 million in the year, mainly related to the construction of a new pond in its tailings dam in Alzada and maintenance activities. Ternium's share in Consorcio Peña Colorada's capital expenditures amounted to \$43 million, mainly related to preparation works at a new iron ore body in the Peña Colorada mine and maintenance activities.

#### 2019 Capital Expenditures

Ternium's capital expenditures for 2019 are expected to reach between \$0.9 billion and \$1.0 billion. The main capital expenditure projects will relate to the following:

progress in the construction of the above-mentioned new hot-rolling mill in the Pesquería unit in Mexico, with an estimated total investment of approximately \$1.1 billion;

completion of the construction of the above-mentioned new hot-dip galvanizing line and new painting lines in the Pesquería unit, with total investment of approximately \$280 million;

completion of the construction of the above-mentioned new steel bar and coil mill in Palmar de Varela in Colombia, with total investment of approximately \$90 million;

projects aimed at further improving environmental and safety conditions throughout our main facilities; and

the expansion of service center capacity in several locations.

#### Raw Materials, Slabs, Energy and Other Inputs

The main inputs for Ternium's facilities are the following: in Mexico, slabs, iron ore, steel scrap, electricity and natural gas; in Brazil and Argentina, iron ore and metallurgical coal; and in Colombia, steel products, steel scrap and electricity. Below is a more complete description of the supply conditions for raw materials, slabs, energy and other inputs at Ternium's facilities in these countries. For a description of some of the risks associated with Ternium's access to raw materials, energy and other inputs, see Item 3. "Key Information—D. Risk Factors—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."

## Mexico

In Mexico, Ternium's manufacturing of finished steel products relies on the supply of crude steel from its steelmaking facilities, which are based on the mini-mill technology, and on the purchase of crude steel slabs from third parties or from other Ternium subsidiaries. The mini-mill technology melts a variable combination of DRI and steel scrap to produce thin slabs, billets and round bars. Ternium's production process in Mexico requires extensive use of natural gas and electricity. Purchased slabs are the largest component of production costs; iron ore, scrap, electricity and natural gas costs are also significant.

**Slabs.** Ternium's Mexican subsidiaries have some non-integrated steel processing facilities that consume large quantities of slabs purchased from third-party suppliers or from other Ternium subsidiaries. Currently, slabs are purchased both in Mexico (primarily from ArcelorMittal) and in the international markets, including from Ternium Brasil and, from time to time, Ternium Argentina. Slab consumption could vary significantly from year to year in accordance with market conditions. Our Mexican subsidiaries purchased, either from third parties or from other Ternium facilities, 3.3 million, 3.7 million and 3.5 million tons of slabs in 2018, 2017 and 2016, respectively. Slab purchase prices are market-based.

**Iron ore.** As described under “—Production Facilities and Processes—Mining Production Facilities” above, Ternium's subsidiaries own interests in two mining companies in Mexico: 100% of the equity of Las Encinas and a 50% equity stake in Consorcio Peña Colorada. In 2018, Ternium's Mexican facilities sourced 100% of their iron ore pellet requirements from these two companies. Under our arrangement with Consorcio Peña Colorada, effective since January 1, 2013, we are committed to off-take 50% of the annual production of the Peña Colorada mine. In 2018, the substantial majority of the iron ore production available to Ternium went to our own direct reduction plants. On average, we consume approximately 1.0 tons of iron ore to produce one ton of crude steel at our mini-mill facilities in Mexico.

**Steel scrap.** In 2018, approximately 69% of Ternium's scrap requirements was obtained in the Mexican market through its own steel scrap collecting and processing operations and approximately 31% was purchased in the United States. Scrap is purchased at market prices. On average, we consume approximately 0.5 tons of scrap to produce one ton of crude steel at our mini-mill facilities in Mexico.

**Electricity.** Electric arc furnaces consume large quantities of electricity. In Mexico, Ternium purchases electricity from Techgen S.A. de C.V., or Techgen, CFE and Iberdrola Energía Monterrey, S.A. de C.V., or Iberdrola.

Techgen owns a gas-fired combined cycle power plant in the Pesquería area of the State of Nuevo León, Mexico. Techgen is a joint venture company in which Ternium participates and contracts 78% of Techgen's capacity of approximately 900 megawatts, or MW. As the capacity contracted by Ternium is significantly higher than the capacity currently required, Ternium resells unused electricity to the Mexican market. For further information on the Techgen investment, see “—C. Organizational Structure—Other investments—Techgen”.

Ternium purchases electricity from Iberdrola under supply contracts, with electricity purchases under these contracts being made at market prices less certain agreed discounts. For further information on Ternium's commitments with Iberdrola, see note 25(ii) (e) to our consolidated financial statements included elsewhere in this annual report. On average, we consume approximately 0.7 megawatts-hour, or MWH of electricity to produce one ton of crude steel at our mini-mill facilities in Mexico.

**Natural gas.** Natural gas is mainly used as a reducing agent for the production of DRI and for the reheating of slabs and billets before the hot-rolling process. In the past, Ternium could purchase natural gas in Mexico solely from Petroleos Mexicanos S.A. de C.V., or Pemex, the Mexican state-owned oil and gas company. Based on new Mexican rules and regulations effective since July 1, 2017, Ternium secured with Centro Nacional de Control del Gas Natural, the Mexican national center for natural gas control, natural gas transportation capacity on Sistema de Transporte y Almacenamiento Nacional Integrado de Gas Natural, the Mexican natural gas transportation grid. Ternium has also natural gas distribution agreements with Gas Industrial de Monterrey S.A. de C.V., or GIMSA, Compañía Mexicana de Gas S.A. de C.V. and Gas Natural Mexico S.A. de C.V.

In addition, Ternium has a renewable one-year natural gas supply agreement with BP Energía México S. de R.L. de C.V., or BP Energía México, a subsidiary of British Petroleum, which is, under the new rules and regulations, one of various natural gas marketers. Natural gas prices in Mexico are mainly based on the Houston Ship Channel reference

price plus transportation, distribution and service costs depending on the location of the delivery points in Mexico. The natural gas that marketers source from Pemex includes an extraordinary fee on its price, as authorized by the Comisión Reguladora de Energía (Energy Regulatory Commission), to compensate for the incremental cost of

liquefied natural gas imports at prices that are higher than those based on the Houston Ship Channel reference price. Such extraordinary fees could be eliminated if current bottlenecks in Mexico's natural gas grid transportation capacity are resolved. The extraordinary charge set for February 2018 was \$0.0842 per million btu. Currently, only a fraction of the natural gas consumed by Ternium is sourced by PB Energía México from Pemex. On average, we consume approximately 8.1 million btu of natural gas to produce one ton of crude steel at our mini-mill facilities in Mexico. For additional information regarding inputs affecting our operations in Mexico, see Item 3. "Key Information—D. Risk Factors—Risks Relating to the Countries in Which We Operate—Mexico" and "—Risks Relating to our Mining Activities."

Brazil and Argentina

In Brazil and Argentina, Ternium produces crude steel through the use of blast furnace technology. The principal raw materials used to produce steel are iron ore, metallurgical coal and, in Ternium Brasil, pulverized coal. The manufacturing process also requires significant quantities of electricity and natural gas.

**Iron ore.** Iron ore is purchased under long-term agreements from suppliers in Brazil. Prices under these contracts are determined in accordance with market conditions. Our main suppliers of iron ore, in the form of lumps, pellets and sinter feed fines, are Vale and Vetria Mineração S.A. Our geographic location in Brazil provides favorable access to high quality iron ore pellets, lumps and fines produced in Brazil's iron ore mines in the Southeast Region mainly, and our geographic location in Argentina provides favorable access to high quality iron ore lump and fines produced in Brazil's iron ore mines in the Pantanal Region (Mato Grosso do Sul state). In addition, Ternium Argentina's steelmaking facility receives iron ore pellets and fines from ports located on Brazil's ocean coast. We consume approximately 1.6 tons of iron ore to produce one ton of crude steel in Brazil and approximately 1.3 tons of iron ore to produce one ton of crude steel in Argentina.

**Metallurgical coal and related materials.** Ternium Brasil and Ternium Argentina obtain their coke through the distillation in their coke ovens of metallurgical coal and, in Argentina, petroleum coke. The facilities require different types of coal to produce coke. In addition, Ternium Brasil purchases pulverized coal to inject in the blast furnace. Metallurgical and pulverized coal are purchased under short-term contracts and on the spot market from several major international suppliers based mainly in Australia and the United States. Prices under contracts are determined in accordance with market conditions. Ternium Argentina purchases petroleum coke produced in Argentina by oil companies such as Axion Energy Argentina S.A. and YPF S.A. The volume purchased from each supplier mainly depends on the technical quality requirements of the blast furnace operations. We consume approximately 0.6 tons of metallurgical and pulverized coal to produce one ton of crude steel in Brazil and 0.5 tons of metallurgical coal and petroleum coke to produce one ton of crude steel in Argentina.

**Electricity.** Ternium Brasil and Ternium Argentina consume large quantities of electricity for their manufacturing activities. The electricity required by Ternium Brasil is self-generated on site by its thermoelectric plant with an installed power capacity of 490 MW, with excess electricity production sold in the Brazilian wholesale market. Part of the electricity required by Ternium Argentina's San Nicolás facility is self-generated on site by a wholly-owned thermoelectric plant with an installed power capacity of 108 MW that operates with an utilization rate of approximately 75%. These thermoelectric plants use steam primarily generated from co-product gases obtained in the steelmaking process (blast furnace and coke oven gases).

Additional fuel requirements for steam production are covered with natural gas purchased from different market vendors and/or, in the case of Ternium Argentina, fuel oil bought at market prices. Ternium Argentina covers electricity shortfalls or sells surpluses, as the case may be, at spot prices with CAMMESA, the Argentine wholesale electricity market manager. Over the course of the last several years, demand for electricity in Argentina increased substantially, outpacing supply and resulting in shortages of electricity to residential and industrial users during periods of high demand. During these periods, Ternium Argentina's energy purchases to cover its energy shortfalls suffered restrictions. However, in the last two years new power facilities came online and investments in new distribution capacity increased, reducing the structural electricity deficit. During 2016, Argentina promulgated a new law providing for mandatory minimum shares of renewable energy in total electricity consumption. The new law requires large energy consumers to increase the share of renewable energy consumption to 8% by 2018 and 20% by 2025. CAMMESA is responsible for meeting the law's renewable energy consumption targets. We purchase approximately 0.1 MWH of electricity to produce one ton of crude steel in Argentina.

Natural gas. Ternium Brasil and Ternium Argentina also consume substantial volumes of natural gas, particularly to operate their steel plants and power generation facilities. Ternium Brasil purchases natural gas at market prices from Companhia Distribuidora de Gás do Rio de Janeiro, or CEG. Ternium Brasil has a natural gas transportation and

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distribution agreement with CEG that expires in December 2019. We consume approximately 0.7 million btu of purchased natural gas to produce one ton of crude steel in Brazil.

Ternium Argentina purchases natural gas at market prices mainly from Tecpetrol S.A., a company in which San Faustin holds a controlling interest, Pluspetrol S.A., and natural gas traders, including MetroEnergía S.A., Rafael G. Albanesi S.A., Energy Traders S.A., Gas Patagonia S.A., Naturgy S.A., Gas Meridional S.R.L. and Energy Consulting Services S.A., a company in which San Faustin holds a significant but non-controlling interest. Over the course of the past several years, natural gas demand in Argentina increased significantly, outpacing supply and thus the provision of natural gas to industrial users (including Ternium Argentina) suffered restrictions during periods of high demand. However, in the last two years natural gas supply increased, and the restrictions were reduced.

For its San Nicolás facility, Ternium Argentina has a long-term natural gas transportation agreement with Transportadora de Gas del Norte S.A, or TGN and a renewable one-year natural gas distribution agreement with Litoral Gas S.A. TGN and Litoral Gas S.A. are companies in which San Faustin holds significant but non-controlling interests. For its other facilities Ternium Argentina's natural gas transportation and distribution needs are covered by the corresponding regional distributors Camuzzi Gas Pampeana S.A., Gas Natural Fenosa S.A. and Metrogas S.A. We consume approximately 3.7 million btu of purchased natural gas to produce one ton of crude steel in Argentina.

Other inputs. Ternium Brasil and Ternium Argentina have on-site oxygen, nitrogen and argon separation plants in order to extract these gases for use in the steelmaking process. Ternium Brasil's separation plants are managed by a consortium formed by Air Liquide Brasil Ltda., AirSteel Ltda., White Martins Gases Industriais Ltda., White Martins Steel Ltda. and ThyssenKrupp MinEnergy GmbH under a long-term contract for the supply of air, oxygen, nitrogen and argon. Ternium Argentina's separation plants are managed by Air Liquide Argentina S.A., or ALASA, under a long-term contract for the supply of oxygen, nitrogen and argon.

#### Colombia

In Colombia, Ternium's manufacturing of finished steel products relies on two sources: (a) the production of steel in its steelmaking facilities, which are based on the electric arc furnace technology; and (b) the purchase of steel products, both from our overseas subsidiaries and from third parties. The electric arc furnace technology melts steel scrap to produce steel billets, which are then rolled into various long products. Ternium's production process requires extensive use of electricity. Steel products are the largest component of production costs; scrap and electricity costs are also significant.

Steel products. Ternium's operations in Colombia include non-integrated facilities that process steel supplied by Ternium's overseas subsidiaries and steel purchased from third-party suppliers procured in the domestic and international markets. We purchased from third parties approximately 240,000 tons of steel products in 2018, 280,000 tons of steel products in 2017 and 400,000 tons of steel products in 2016.

Steel scrap. Scrap is the main raw material for producing steel in our steelmaking facilities in Colombia. Ternium sources 100% of its steel scrap needs from the local scrap market. We consume approximately 1.1 tons of scrap to produce one ton of crude steel in Colombia.

Electricity. Manizales is our main electricity consuming unit in Colombia, mainly due to its electric arc furnace-based steel production operations. Manizales purchases electricity from Isagen S.A. E.S.P., a Colombian power company, under a supply contract expiring in December 2021. The electricity price is based on a fixed rate adjusted by the wholesale price index with certain pre-set premiums or discounts in the event prevailing market prices reach a level above or below certain thresholds. We consume approximately 0.6 MWH of electricity to produce one ton of crude steel in Colombia.

#### Product Quality Standards

Ternium develops its products and services with a philosophy of continuous improvement and seeks to excel in its internal quality control of its products and processes. Ternium's products are manufactured in accordance with proprietary standards and the requirements of customers, and within the specifications of recognized international standardization entities including the International Organization for Standardization, or ISO, the American Society for Testing and Materials, the European Standards, the Japanese Industrial Standards, the Society of Automotive Engineers and the standards of the American Petroleum Institute. Ternium also has product certifications based on international or local standards depending on the markets served.





Ternium established and implemented a Quality Management System, or QMS, and continuously improves its effectiveness in compliance with the requirements of the applicable ISO 9001:2015 and IATF 16949:2016, intended for production of automotive supplies, and other specific requirements. Ternium's QMS operates with aligned strategies, objectives and criteria throughout Ternium's subsidiaries. To keep its ISO multisite certification, the QMS is audited annually by Lloyd's Register Quality Assurance. During 2018, Ternium completed successfully a Ternium corporate Quality Assurance project to obtain a QMS upgraded certification for its facilities, including the recently acquired Rio de Janeiro unit. The upgraded certificates under this project, launched in connection with a new Quality Management reference standards version upgrade (ISO 9001:2015 and IATF 16949:2016 for automotive market), were obtained finally as Multisite Certification in March 2018.

Ternium Mexico's and Ternium Argentina's metallurgical testing laboratories are accredited for the performance of various relevant technical tests in accordance with ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories or equivalent standards. During 2018, Ternium launched a project to upgrade its laboratories' accreditation to the newest version of ISO/IEC 17025:2017, under the time span defined by ISO/IEC, through national accreditation bodies recognized by the International Laboratory Accreditation Cooperation.

Research and Development; Product Development

Steel is a highly versatile metal, that offers unique opportunities for product innovation. For example, over 70% of the structural steel parts used to build a car today involve solutions that did not exist 20 years ago. Ternium's production strategy is based on offering a complete range of value-added, high-end products, with an emphasis on creating and manufacturing increasingly sophisticated steel for new applications and industries.

The specifications of steel products required by our customers are usually the result of a combination of the steel's metal composition and the process used to obtain the finished product. Ternium has identified synergies in collaboration with its customers in the early stages of their projects. Anticipating our customers' upcoming steel product requirements, through our participation in joint development projects, is key not only to build customer relationships but also to plan and develop new processes, which may sometimes require the incorporation of new equipment and technology.

At Ternium, we conduct applied research efforts in different ways. We develop steel products through in-house programs, joint projects with leading industrial customers, joint efforts with recognized universities or research centers, and through our participation in international consortiums.

Ternium's research programs are open to a broad-based international network of industry consortiums, with over 50 universities and research laboratories representing both the public and private sectors. The goal is to find and develop the best solutions to support an agenda aimed at achieving better and more sustainable steel. Our research covers the entire production cycle, from primary steelmaking and metallurgy, to rolling and galvanizing. In 2018, Ternium became full member of WorldAutoSteel, an organization comprising 22 of the world's major steel producers. The group is dedicated, under the auspices of the World Steel Association, or worldsteel, to inform the automotive industry of upcoming new steel capabilities available to meet their design and manufacturing requirements.

Over the last five years, Ternium has achieved an average of 100 product development projects per year in partnership with industrial customers, and a total of 40 research projects involving university researchers and students from some of the world's most prestigious institutions. We have been increasingly engaging universities in our research efforts in order to expand and further diversify Ternium's research network and capabilities. This initiative fosters the development of fundamental knowledge and know-how at participating universities while enabling the optimization of Ternium's in-house research resources. In 2018, this program included the participation of approximately 20 under-graduate and post-graduate students pursuing degrees in engineering, materials science and metallurgy.

The Ternium Industrial Center in Pesquería, Mexico, inaugurated in 2013, led to an intensive product development period. We widened the range of our product offering to include sophisticated high-end steel products required by the manufacturing industry, particularly automotive manufacturers. These developments were possible as a result of the incorporation of new technologies to our industrial system through the new Pesquería unit. Furthermore, the installation in 2015 of state-of-the-art cooling technology in the hot strip mill of our Churubusco unit in Mexico, opened up the possibility of developing and processing new advanced high-strength steel grades, including dual phase, ferrite-bainite, martensitic and complex phase grades. Based on these new capabilities, we further widened our

high-end product portfolio for customers in the automotive, metal-mechanic, home appliance, HVAC, oil & gas and electric motors industries.

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## Regulations

### Environmental Regulation

Ternium's operations (including mining activities in Mexico) are subject to a broad range of environmental laws, regulations, permit requirements and decrees relating to the protection of human health and the environment, including laws and regulations relating to land use; air emissions; wastewater treatment and discharges; the use, handling and disposal of hazardous or toxic materials and the handling and disposal of solid wastes. Laws and regulations protecting the environment have become increasingly complex and more stringent and expensive to implement in recent years. International environmental requirements may vary. Ternium's corporate environmental policy commits each of its business units to comply with all applicable environmental laws and regulations and aims to achieve the highest standards of environmental performance as a basis to enhance sustainable development. Compliance with environmental laws and regulations, and monitoring regulatory changes, is addressed primarily at the regional level.

Ternium reports carbon dioxide emissions data on an annual basis to worldsteel to contribute to the association's initiative to collect emissions data from member companies. We support the steel industry's ongoing effort to develop innovative solutions to reduce GHG emissions over the life cycle of steel products. According to the Intergovernmental Panel on Climate Change, the steel industry makes for approximately 8% of all human-made GHG emissions.

The ultimate impact of complying with existing and expected 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.

Ternium has not been subject to any material penalty for any environmental violations in 2018, and we are not aware of any current material legal or administrative proceedings pending against Ternium with respect to environmental matters which could have an adverse material impact on Ternium's financial condition or results of operations. Below is a summary of relevant legislation applicable to Ternium.

#### Mexico:

Mexican environmental laws establish the "polluter pays" principle, pursuant to which the individual that causes an environmental breach is responsible for restoring the environment to its pre-pollution condition and face economic and, in some cases, criminal liabilities. Mexican regulations also establish an annual report scheme of GHG emissions. In addition, Mexican regulations provide for carbon dioxide emission taxes. Several fuels are subject to taxes, with rates reviewed annually, depending on their efficiency in terms of carbon dioxide emission per unit of energy obtained. The carbon dioxide emission tax for natural gas is currently zero. Mexico is also in the process of creating a trade market for carbon dioxide emissions. Ternium Mexico is a large consumer of natural gas. For further information see "—Raw Materials, Slabs, Energy and Other Inputs."

#### Brazil:

The Company's activities are subject to wide-ranging Brazilian environmental legislation at the federal, state and municipal levels that govern, among other aspects, the dumping of effluents, atmospheric emissions and the handling and final disposal of dangerous waste, as well as the obligation to obtain operating licenses for the installation and operation of potentially polluting activities.

Brazilian environmental legislation imposes criminal and administrative penalties on natural persons and legal entities that commit environmental crimes or infractions, as well as for the obligation to repair the environmental damage caused. Environmental crimes or infractions could subject the Company to penalties that include:

· fines that at the administrative level could reach as high as BRL50 million, depending on the violator's economic capacity and past record, as well as the severity of the facts and prior history, with the amounts potentially doubled or tripled in the case of repeat offenders;

·suspension of or interference in the activities of the respective enterprise; and

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loss of benefits, such as the suspension of government financing and the inability to qualify for public bidding processes and tax breaks.

In addition, strict liability is applicable to environmental crimes for both natural persons and legal entities.

Environmental legislation also provides for disregarding the legal status of a company's controlling shareholders whenever such status represents an impediment to receiving restitution for environmental damages.

In the civil sphere, environmental damage results in joint and several liability as well as strict liability. This means that the obligation to repair the environmental damage may affect all those directly or indirectly involved, regardless of any proof of who is to blame. As a result, the hiring of third parties to intervene in its operations to perform such services as final disposal of solid waste does not exempt the Company from liability for any environmental damage that may occur.

Argentina:

Argentine environmental laws and regulations require the renewal of environmental licenses and emission permits every two years. Although such renewals may take longer than expected and the renewal process may extend beyond the due date of the then current licenses and permits, no shut down orders against the Company have ever been issued while the renewal processes are ongoing. In addition, Argentine environmental laws and regulations require mandatory environmental insurance to cover facilities that use hazardous materials and the observance of predefined air quality standards. Such regulations are currently under review, and more stringent air quality standards are expected to be imposed in the long term.

During 2016, Argentina issued new legislation providing for mandatory minimum shares of renewable energy in total electricity consumption. For further information see “—Raw Materials, Slabs, Energy and Other Inputs—Brazil and Argentina—Electricity”.

In December 2017, the Argentine Congress approved a new tax on carbon emissions. The tax does not apply to metallurgical coal and natural gas provided that these products are used as raw materials in the production process, as is the case of Ternium Argentina.

Mining regulations in Mexico

Because our operations in Mexico include mining, we are also subject to Mexican regulations relating to mining and mining concessions. Under Mexican law, mineral resources belong to the Mexican nation and a concession from the Mexican federal government is required to explore for or exploit mineral reserves. Pursuant to Mexico's Mining Law, mining concessions may only be granted to Mexican individuals and to legal entities incorporated under Mexican law. Foreign investors may hold up to 100% of the shares of such entities.

A mining concession allows its holder to perform both exploration works (including identifying mineral deposits and quantifying and evaluating economically minable reserves) and exploitation works (including detaching and extracting mineral products from such deposits). Mining concessions are granted for a 50-year period from the date of their recording in the Public Mining Registry; following the expiration of the initial concession term, the concessions are renewable for an additional 50-year term in accordance with, and subject to, the procedures set forth in the Mining Law.

Mining concessions grant several specified rights to the concessionaire, including:

- the right to dispose freely of mineral products obtained as a result of the exploitation of the concession;
- the right to obtain the expropriation of, or an easement with respect to, the land where the exploration or exploitation will be conducted; and
- the use of water in the mine to facilitate extraction.

In addition, a holder of a mining concession is obligated, among other things, to explore or exploit the relevant concession (including the achievement of minimum investment targets), to pay for any relevant mining rights, to comply with all environmental and safety standards, and to provide information to and permit inspections by the Secretariat of Economy. Mining concessions may be terminated if the obligations of the concessionaire are not satisfied.



A company that holds a concession must be registered with the Public Mining Registry. In addition, mining concessions and permits, assignments, transfers and encumbrances must be recorded with the Public Mining Registry to be enforceable. We believe that our material mining concessions are duly registered in the Public Mining Registry. For information regarding amendments to the Mining Law and regulations in Mexico, see Item 3. “Key Information—D. Risk Factors—Risks Relating to our Mining Activities—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.”

#### Trade regulations

Intense global competition in the steel industry lead many countries, from time to time, to increase duties or impose restrictions on steel product imports to protect their domestic industries from trades that are not made under market conditions or that are otherwise unfair. Such measures protect domestic producers from increased imports sold at dumped or subsidized prices.

During a period of intense competition in 2001, the national governments in some markets such as the United States and Europe implemented these measures as well as other measures known as safeguards. While safeguards were lifted in December 2003, antidumping and countervailing duties remain in place. More recently, a new wave of protective measures has emerged due to increased steel imports from many countries, mainly China. Moreover, during 2018, under Section 232 of the Trade Expansion Act of 1962, the U.S. President imposed a 25% tariff on steel imports; however, Australia was exempted from the tariff; although Argentina, Brazil and South Korea were also exempted, they were subject to quota system agreements covering steel imports from those countries. At the same time, bilateral or regional free trade agreements have liberalized trade among some countries, providing for reduced or zero tariffs for many goods, including steel products. The entry into force of various free trade agreements and certain countries’ imposition of trade remedy measures can and have both benefited and adversely affected Ternium’s home markets and export sales of steel products, as described below. For further information, see also Item 3. “Key Information—D. Risk Factors—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.” Relevant free trade agreements and trade remedy measures, by country, are described below:

#### Mexico

##### Imports of steel products to Mexico:

The Mexican government has imposed certain antidumping measures on imports of steel products that are similar to the ones produced by Ternium Mexico. The following is a description of measures currently in effect and ongoing investigations:

**Hot-rolled products:** On March 28, 2000, the Mexican government imposed antidumping duties on the Russian Federation and Ukraine of 30.31% and 46.66%, respectively, on hot-rolled products. The measure was extended three times for five years each, on March 17, 2006; on September 8, 2011 (modifying the duties to 21% and 25% for Russia and Ukraine respectively) and on January 28, 2016. On July 19, 2013, the Mexican government initiated an anti-circumvention investigation on imports of boron-alloyed hot-rolled products from Russia. On March 21, 2014, Mexico’s Secretariat of Economy published the final resolution on the investigation, by which boron-alloyed hot-rolled products from Russia are now subject to a 21% antidumping duty. Furthermore, on December 22, 2015, the Mexican government published the final antidumping resolution imposing definitive and specific antidumping duties on China (\$354.92 per ton, except for imports from Tangshan Iron and Steel Group Company Limited, which were fixed in \$335.60 per ton), Germany (\$166.01 per ton, except for imports from ArcelorMittal Bremen GmbH, which were fixed in \$137 per ton) and France (\$75.59 per ton, except for imports from ArcelorMittal Méditerranée S.A.S., which were fixed in \$67.54 per ton), on hot-rolled products.

**Plate in coils:** Since June 1996, an antidumping duty of 29.3% has been in place on imports from Russia. The measure has been extended four times, in June 2003, June 2007, November 2012 and May 2017. On July 5, 2013, the Mexican government initiated an anti-circumvention investigation on imports of boron-alloyed plate in coil imports from Russia. On February 19, 2014, Mexico’s Secretariat of Economy published the final resolution on the investigation by which boron-alloyed plate in coil imports are now subject to a 29.3% antidumping duty. Such resolution has been



appealed and judicial procedures are ongoing in Mexican courts.

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**Cold-rolled products:** In June 1999, Mexico imposed antidumping duties on cold-rolled steel sheets from the Russian Federation and Kazakhstan of 15% and 22% respectively. The measure has been extended three times, in December 2005, December 2010 and July 2015, and will be in place until July 2020. In addition, on October 1, 2012, the Mexican government initiated a dumping investigation on cold-rolled steel imports from South Korea. On December 26, 2013, Mexico's Secretariat of Economy published a suspension agreement under which Korean exporters, Posco and Hyundai Hysco Company Limited, or Hyundai, voluntarily undertook to limit their cold-rolled products exports to the Mexican market. On May 25, 2016, the Mexican authorities initiated a changed circumstances review of this suspension agreement, and on June 13, 2017, the Secretariat of Economy issued a final determination increasing Posco's and Hyundai's quotas for 2017 and 2018. On August 23, 2018, the Mexican government initiated a sunset review of the agreement. Furthermore, on June 19, 2015, Mexico imposed antidumping duties on cold-rolled steel products from China of between 65.99% and 103.41%, with rates depending on the Chinese exporting company. On December 2015, Mexico initiated a circumvention inquiry against cold rolled steel products with boron added from China. On July 11, 2016, the Mexican government issued a final determination confirming China's circumvention practice and thus, extending the antidumping duties.

**Coated flat products:** On December 17, 2015, the Mexican government initiated an antidumping investigation on coated flat products from China and Taiwan. On July 29, 2016, Mexico imposed provisional antidumping duties on Chinese exports of between \$192 and \$438 per ton, and of \$563 per ton on Taiwanese products. On June 5, 2017, Mexico imposed final antidumping duties on Chinese exports of between 22.22% and 76.33%, and of between 22.26% and 52.57% on Taiwanese products. On November 21, 2017, Mexico amended final antidumping duties applicable to products sold by Chinese companies, one of which was imposed duties for \$187 per ton, while others face duties ranging between 22.26% and 76.33% of the products' price.

**Reinforcing bars:** Since 1995, imports of reinforcing bars from Brazil are subject to an antidumping duty of 57.69%. Subsequent sunset reviews determined the continuation of the antidumping duty for additional five-year periods. On July 31, 2015, the fourth sunset review was initiated, and on September 9, 2016, the Mexican authority determined the continuation of the antidumping duty for an additional five-year period.

**Wire rod:** Since September 2000, imports of wire rod from Ukraine are subject to an antidumping duty. The initial antidumping margin was 30.52%. In June 2006, the first sunset review resolution determined the continuation of the antidumping duty for five more years. On September 7, 2010, a second sunset review was initiated, and on March 7, 2012, the Mexican government increased the antidumping duty to 41% until September 2015. The Mexican government initiated the third sunset review on September 4, 2015, and extended the measures for an additional five-year period on September 2, 2016. In addition, on September 2, 2015, the Mexican government initiated an antidumping investigation on wire rod from China. After a preliminary determination published on December 22, 2015, on July 28, 2016 the Mexican government imposed a specific antidumping duty of US\$0.49 per kilogram for five years.

**Welded Tubes:** On December 7, 2016, the Mexican government initiated an antidumping investigation on welded tubes of circular, square or rectangular cross section from China. On March 8, 2018, Mexico imposed final antidumping duties on Chinese exports of between US\$356 and US\$618 per ton.

On February 9, 2010, the Mexican Government issued a decree reducing the import tariffs on several steel product groups. The tariff for finished products was set at 0% starting in 2012 (from 3% in 2011, 5% in 2010 and 7% in 2009). The tariff for semi-finished products was set at 0% starting in 2012 (from 3% in 2011 and 2010, and 5% in 2009) and the tariff for welded pipe products was set in a range from 0% to 5% starting in 2012 (from 7% in 2011 and 2010, and 10% in 2009). Three companies (including Ternium) and an industry related labor union sought an injunction (acción de amparo) against these government decisions in early 2012 when the tariffs went to 0%. The legal action taken by the companies was rejected by the courts, but the legal action taken by the labor union had a positive preliminary outcome. As a result, the government reestablished on August 1, 2012, a 3% tariff on some semi-finished, flat, long and pipe and tube steel products. At the beginning of May 2015, the tariffs were removed again. However, on October 7, 2015, the Mexican Government issued a decree imposing a temporary 15% import tariff on several steel product groups for a period of six months. The measure has been renewed several times for subsequent six-month periods, the most recent of which became effective on March 26, 2019. In the most recent renewal, steel product groups included

plate, hot-rolled, cold-rolled, coated, tubular, structural and wire rod.

Exports of steel products from Mexico:

U.S. authorities have imposed a number of measures on steel import products from Mexico, thereby restricting Ternium's exports to that country. The following is a description of measures currently in effect and ongoing investigations:

Carbon and alloy steel wire rod: Mexican wire rod exports are subject to an antidumping duty of 20.11% pursuant to an antidumping duty order on carbon and certain alloy steel wire rod. On July 3, 2014, as a result of the most recent sunset review, such duty was extended for five more years, until July 2019.

Pipe and tube: During 2007, U.S. authorities initiated an antidumping investigation of light-walled rectangular pipe and tube, or LWRPT, from, among other countries, Mexico. On June 13, 2008, the authorities made a final determination of sales at less than fair value in the investigation of LWRPT from Mexico and, consequently, imposed antidumping duties. On February 18, 2011, the authorities published the final results of the first administrative review by which Mexican LWRPT exports were subject to an antidumping duty of 6.13% until May 23, 2014, when U.S. authorities made a final affirmative sunset review of 2.40% for Maquilacero and 3.76% for certain other companies subject to the review, including Ternium Mexico. On March 12, 2018, U.S. authorities published the final results of the 2015-2016 administrative review, which did not impose any antidumping duties on Prolamsa and Aceros Cuatro Caminos S.A. de C.V., but imposed an antidumping duty of 3.76% on other exporters. On August 10, 2015, U.S. authorities initiated an antidumping investigation on imports of heavy-walled rectangular pipe and tube, or HWRPT, from Korea, Turkey and Mexico. On September 13, 2016 the authorities issued an antidumping duty order on imports of HWRPT, imposing an antidumping duty range of between 2.34% and 3.82% for Korea, 17.83% and 35.66% for Turkey, and in the case of Mexico 3.83% for Maquilacero, 5.21% for Productos y Laminados de Monterrey and 4.91% for Ternium Mexico and others.

Welded pipes: Since 1992, pursuant to an antidumping duty order on circular welded non-alloy steel pipe -or standard pipe- from various countries, including Mexico, standard pipes manufactured by Hylsamex and Grupo Imsa were subject to antidumping duties. In 2007, such measures were extended for five more years. In August 2009, U.S. authorities published the final results of a changed circumstances review, concluding that Ternium Mexico is the successor-in-interest to Hylsamex for purposes of determining antidumping duty liability. In accordance with the latest administrative review, the applicable duty for Ternium Mexico is 24.17%. The measure has since been extended two more times, in 2012 and February 2018.

Reinforced bars: On November 6, 2014, U.S. authorities made a final determination on reinforced bar imports from Mexico, imposing antidumping duties between 20.58% and 66.70%.

Fabricated Structural Steel: On February 26, 2019, the U.S. authorities announced the initiation of antidumping and countervailing duty investigations of imports of fabricated structural steel from Mexico.

Trade agreements:

Mexico has signed trade agreements with several countries or trade blocs aimed at liberalizing trade between them: NAFTA was signed among Canada, Mexico and the United States and came into effect on January 1, 1994. NAFTA provided for the progressive elimination over a 10-year period of duties on, among other things, steel products traded between or among Mexico, the United States and Canada. As a result, zero tariffs applied to steel products traded within NAFTA countries. This zero tariff situation changed in 2018 following the above-mentioned imposition of a 25% tariff on steel imports from Mexico to the United States, under Section 232 of the Trade Expansion Act of 1962, which triggered complaints filed by Mexico and Canada under the WTO dispute settlement system and Mexico's subsequent imposition of tariffs to some steel imports from the United States to Mexico. Currently, Mexico, the United States and Canada are in the process of ratifying the USMCA, a new trade agreement that will replace the NAFTA agreement. In addition, Mexico and the United States have been discussing further mechanisms for trade enforcement to avoid steel circumvention in the North American region.

The Mexican-European Free Trade Agreement, or MEFTA, became effective on July 1, 2000. MEFTA provided for the phase-out and eventual elimination of Mexican and European duties on all industrial goods, including finished steel products. The European Union eliminated all import duties on Mexican industrial goods, including finished steel products, as of January 1, 2003, while Mexico eliminated all import duties on European industrial goods, including finished steel products, as of January 1, 2007. During April 2018, the European Union and Mexico concluded

negotiations to bring the MEFTA up to date. The amended agreement, which is not yet effective, does not provide for changes in steel trade conditions.

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The Economic Partnership Agreement between Japan and Mexico came into force on April 1, 2015. The new agreement provides for a phase-out and eventual elimination of Mexican and Japanese duties on all industrial goods within a ten-year period. Beginning on April 1, 2015, all duties on steel products were eliminated. Until March 31, 2015, an import duty of 3% was applicable to Japanese steel imports.

In November 2003, Mexico and Argentina signed an Economic Complementation Agreement, or ACE 6, whereby reciprocal tariff preferences were granted. In 2006, Mexico and Argentina modified the ACE 6 Agreement, reducing to zero import duties on imports of certain steel products from the other country. Zero import duties included exports from Mexico to Argentina and from Argentina to Mexico for up to 90,000 tons per year of slabs, 60,000 tons per year of cold rolled coils and 30,000 tons per year of corrosion resistant coils, including hot dip galvanized and pre-painted sheets.

Mexico is also a party to trade agreements with Colombia, Japan, Chile, Bolivia, Nicaragua, Costa Rica, Uruguay and the European Free Trade Association, an intergovernmental organization set up by Liechtenstein, Norway, Iceland and Switzerland among others. In addition, on March 8, 2018, Mexico, together with Australia, Brunei, Canada, Chile, Japan, Malaysia, New Zealand, Peru, Singapore and Vietnam, signed the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, or CPTPP. The CPTPP incorporates by reference most of the provisions of the Trans-Pacific Partnership Agreement, or TPPA. The TPPA was signed on February 4, 2016, but did not enter into force given the withdrawal of the United States.

Argentina

Imports of steel products to Argentina:

In the past, the Argentine government imposed various antidumping measures on imports of certain steel products that compete directly with Ternium's sales in Argentina. After several subsequent revisions of such cases, there are currently no measures in place.

Trade agreements:

Argentina has signed free trade agreements with several countries or trade blocs aimed at liberalizing trade between them, including the following:

In early 1991, Argentina entered, together with Brazil, Uruguay and Paraguay, into the Treaty of Asunción, creating the Mercado Común del Sur (Southern Common Market), or Mercosur, a common market organization that aimed to bring about the free movement of goods, capital, services and people among its member states. In 2004, the Mercosur members entered into the Protocol of Ouro Preto, creating a customs union among them. On January 1, 2013, Venezuela became a full member of Mercosur but was suspended in December 2016. Over time, Mercosur has eliminated or significantly reduced import duties, tariffs and other trade barriers among member states. Since January 1, 2000, zero tariffs apply to steel products traded among them.

Applicable steel import tariffs to Mercosur member countries from non-member countries currently range between 2% and 16%. However, every six months, Mercosur members may exempt from tariffs a limited number of products imported from non-member countries. Uruguay has elected to exempt certain steel products, including cold-rolled sheets and galvanized flat steel products. This exemption regime is expected to be in force until December 31, 2022, but has been extended in the past and, if agreed by Mercosur member countries, could again be extended in the future. In 2004, Mercosur and the Comunidad Andina de Naciones (Andean Community), or CAN, currently including Bolivia, Colombia, Ecuador and Peru, signed a free trade agreement aimed at reducing and eventually eliminating tariffs on steel products traded among member countries. While all tariffs on steel products traded between Argentina and Bolivia and between Argentina and Peru have been eliminated, the elimination of tariffs on steel products traded between Argentina and Ecuador and Argentina and Colombia are subject to a pending agreement on rules of origin specifications. Mercosur entered into a trade agreement with Chile in 2005. As a result, all tariffs on steel products traded between Mercosur and Chile have been eliminated. In addition, Mercosur is negotiating a free trade agreement with the European Union.

In November 2003, Argentina and Mexico signed the ACE 6. For further information, see “—Regulations—Trade Regulations—Mexico.”



## Colombia

### Imports of steel products to Colombia:

The Colombian government has imposed certain antidumping measures on imports of steel products. The following antidumping measures are currently in effect:

Low-carbon wire rods: On October 8, 2013, the Colombian government imposed provisional safeguard duties of 21.29% on imports of low-carbon wire rods from countries belonging to the World Trade Organization (WTO), with the exception of Cuba, Ecuador, the United States and Venezuela. On April 30, 2014, Colombia imposed final safeguard duties of 21.29% on imports of low-carbon wire rod from WTO members with the exception of Argentina, Chile, Ecuador, Costa Rica, the United States and Canada, to remain in force for a period of one year that ended on March 31, 2015. On October 2015, the Colombian government imposed provisional antidumping duties on imports of low-carbon wire rod from China, consisting on a duty calculated based on a price of \$541.06 per ton less the actual FOB import price for such product, in force until the end of March 2016. On May 11, 2016, Colombia imposed final antidumping duties of \$419 per ton less the actual FOB import price, for a five-year period.

- Steel “L” and “U” profiles: On August 24, 2018, the Colombian government imposed provisional antidumping duties on imports of steel “L” and “U” profiles from China, consisting on a duty calculated based on a price of \$473.28 per ton less the actual FOB import price for such product, for a two-year period.

Galvanized flat steel products: On March 5, 2014, Colombia imposed final antidumping measures on imports of galvanized flat steel products from China, to remain in force for a period of three years, consisting of a duty calculated based on a price of \$824.57 per ton less the actual FOB import price for such product. On December 19, 2017, Colombia renewed the antidumping measure for a period of three years, changing the duty to 47.62%.

On March 13, 2018, the Colombian government imposed a temporary 8.5% import tariff on steel reinforced bars for a period of two years.

### Trade agreements:

Most steel imports to Colombia from countries with whom Colombia does not have a free trade agreement in place, are subject to import tariffs of between 5% and 10%.

Colombia has entered into free trade agreements with several countries or trade blocs aimed at liberalizing trade between them.

CAN is a trading bloc, currently including Bolivia, Colombia, Ecuador and Peru, established during 1993 and approved in 1994 for the purpose of promoting trade relations among its members and between CAN and the rest of the world. The treaty formalized a customs union among CAN’s member states. Over time, CAN has eliminated or significantly reduced import duties, tariffs and other trade barriers among member states. In particular, zero tariffs have applied to steel products imported from other member states since January 1, 2000. CAN and Mercosur have signed a free trade agreement. For further information, see “—Regulations—Trade Regulations—Argentina.”

During June 1994, Colombia and Mexico signed a free trade agreement. For further information on this agreement see “—Regulations—Trade Regulations—Mexico.”

On August 9, 2007, Colombia, El Salvador, Guatemala and Honduras established the Triángulo Norte (North Triangle), or TN, free trade agreement. Members of the TN signed multilateral agreements related to funds transfers and local and most favored nation statuses, and signed bilateral agreements aimed at reducing trade duties. Colombia’s free trade agreement with Guatemala started on November 12, 2009; with El Salvador on February 1, 2010; and with Honduras on March 27, 2010. Under TN, zero tariffs apply to several steel products imported from other member states.

Colombia’s free trade agreement with the United States became effective in October 2011. Under this agreement, steel import tariffs from Colombia to the United States will remain at 0% and steel import tariffs from the United States to Colombia will decrease from a range of between 5% and 10% in 2011 to 0% in one, five or 10 years according to the product category. In particular, wire rods import tariffs became 0% beginning in 2012 and rebar import tariffs will decrease gradually, reaching 0% in 2021. On March 8, 2018, the U.S. president imposed a 25% tariff on steel imports, in force since March 23, 2018. See Item 4. “Information on the Company—B. Business Overview—Regulations—Trade Regulations—United States.”





In addition, Colombia has signed free trade agreements with Chile, Canada, Costa Rica, the European Union and South Korea, in effect since May 2009, August 2011, August 2016, August 2013 and July 2016, respectively, and has signed free trade agreements with Israel and Panama, which are not yet effective. Colombia is currently negotiating free trade agreements with Japan and Turkey.

#### United States

U.S. authorities have imposed a number of measures on steel import products. Below is a description of measures currently in effect and ongoing investigations:

#### Imports of steel products to the United States:

Hot-rolled products: During November 2001, the U.S. government imposed antidumping and countervailing duties on certain hot-rolled carbon steel flat products from China, India, Taiwan, Thailand, Russia, Indonesia and Ukraine. Current antidumping duties range between 12.34% and 90.83% for China, 36.53% and 44.40% for India, 20.28% and 29.14% for Taiwan, 4.41% and 20.30% for Thailand and 73.59% and 184.56% for Russia, with rates depending on the exporting company; antidumping and countervailing duties are set at 47.86% for Indonesia and 90.33% for Ukraine. Current countervailing duties range between 540.78% and 563.50% for India and are set at 10.21% for Indonesia and 2.38% for Thailand. These measures were confirmed in February 2014 and are currently under sunset review. In addition, on September 24, 2015, the U.S. government initiated antidumping and countervailing investigations on hot-rolled products from Australia, Brazil, Japan, Korea, the Netherlands, Turkey and the United Kingdom. On October 3, 2016, the government issued antidumping and countervailing duty orders for a five-year period. Antidumping duties were imposed at the following rates: 29.58% for Australia; between 33.14% and 34.28% for Brazil; between 4.99% and 7.51% for Japan; between 4.61% and 9.49% for Korea; 3.73% for the Netherlands; between 4.15% and 6.77% for Turkey; and 33.06% for the United Kingdom. Countervailing duties were imposed on imports as follows: between 29.07% and 30.51% for Brazil; and between 0% and 9.49% for Korea.

- Cold-rolled products: On July 14, 2016, the U.S. government imposed antidumping duties on cold-rolled steel products, of 265.79% for China and 71.35% for Japan, and countervailing duties of 256.44% for China. On September 20, 2016, the U.S. government imposed countervailing duties on cold-rolled steel products of between 11.09% and 11.31% from Brazil, 10% from India and between 3.89% and 59.72% from Korea. In addition, on September 20, 2016, the U.S. government imposed antidumping duties on cold-rolled products of between 19.58% and 35.43% from Brazil, 6.78% from India, 7.60% from Korea, and between 5.40% and 25.17% from the United Kingdom.

Corrosion-resistant flat products: On July 25, 2016, the U.S. government imposed countervailing duties on corrosion-resistant flat products of 39.05% to 241.07% on imports from China, of 8% to 29.49% on imports from India, of a de minimis to 38.51% on imports from Italy, and of a de minimis to 1.19% on imports from Korea. In addition, on July 25, 2016, the U.S. government imposed antidumping duties on corrosion-resistant flat products of 209.97% from China, between 3.05% and 4.43% from India, 12.63% and 92.12% from Italy, 8.75% and 47.80% from Korea, and 10.34% from Taiwan.

Wire rod: On October 29, 2002, the United States imposed antidumping duties to wire rod imports from Brazil (from 74.35% to 94.73%), Indonesia (4.05%), Moldova (369.10%) and Trinidad and Tobago (11.40%), and countervailing duties to Brazilian wire rod imports of between 2.31% and 6.74%. On January 8, 2015, the United States imposed antidumping duties (between 106.19% and 110.25%) and countervailing duties (between 178.46% and 193.31%) on wire rod from China, with rates depending on the exporting company. On January 24, 2018, the United States imposed antidumping duties on wire rod from Russia (between 436.80% and 756.93%), Belarus (280.02%) and the United Arab Emirates (84.10%). On March 14, 2018, the United States imposed antidumping duties on wire rod from South Africa (between 135.46% and 142.26%) and Ukraine (between 34.98% and 44.03%). On March 19, 2018, the U.S. Department of Commerce published its final antidumping and countervailing determinations on imports of wire rod from Italy (antidumping duties of between 12.41% and 18.89% and countervailing duties of between 4.16% and 44.18%), South Korea (antidumping duties of 41.10%), Spain (antidumping duties of between 11.08% and 32.64%), Turkey (antidumping duties of between 4.74% and 7.94% and countervailing duties of between 3.81% and 3.86%) and the United Kingdom (antidumping duties of 147.63%).

U.S. authorities have imposed a number of measures on steel product imports from Mexico, including carbon and alloy steel wire rod, pipe and tube, and welded pipes. For further information, see “—Regulations—Trade Regulations—Mexico.”

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In April 2017, the U.S. government initiated an investigation under Section 232 of the U.S. Trade Expansion Act. The investigation analyzed the effects of imports of steel products on national security. Based on the result of such investigation and on the resulting Commerce Secretary recommendations, on March 8, 2018, the U.S. president imposed a 25% tariff on steel imports, which entered into force on March 23, 2018. However, the U.S. administration temporarily exempted imports from Argentina, Australia, Brazil, Canada, the European Union, Mexico and South Korea. Currently, Australia is exempt from the tariff; although Argentina, Brazil and South Korea are also exempt, they are subject to a quota system that limits steel imports from those countries. Under the exclusion procedure, implemented by the United States authorities, Ternium has filed multiple exclusions requests that have not yet been addressed by the U.S. Department of Commerce.

#### Insurance

Our subsidiaries carry insurance policies covering accidental loss or physical damage to its property and equipment (including machinery breakdown and business interruption arising from an insured event), general liability (including third party, employer, product, sudden and accidental pollution and port liability) and other insurance, including marine cargo, construction all risk, life and workers' compensation and automobile insurance. These insurance policies have coverage, limits and conditions, that we believe are customary in the steel products industry and in line with legal and domestic market requirements. Nevertheless, the limits, deductibles and/or self insured retentions of these insurance policies could not be sufficient to recover all losses suffered from such events. In addition, some particular events could not be covered under these insurance policies.

#### Disclosure Pursuant to Section 13(r) of the Exchange Act

The Iran Threat Reduction and Syria Human Rights Act of 2012, created a new subsection (r) in Section 13 of the U.S. Securities Exchange Act of 1934, as amended (the "Exchange Act"), which requires a reporting issuer to provide disclosure if the issuer or any of its affiliates engaged in certain enumerated activities relating to Iran, including activities involving the Government of Iran. Ternium is providing the following disclosure pursuant to Section 13(r).

#### Tenaris

Tenaris is indirectly controlled by San Faustin and, accordingly, is deemed an "affiliate" of Ternium, as that term is defined in Exchange Act Rule 12b-2. In response to our inquiry, Tenaris provided the disclosure included below. In July 2015, the Islamic Republic of Iran entered into the Joint Comprehensive Plan of Action, or JCPOA, with China, France, Germany, Russia, the United Kingdom and the United States, which resulted in the partial lifting in January 2016 of certain sanctions and restrictions against Iran, including most U.S. secondary sanctions against such country. On May 8, 2018, the United States announced that it would cease participation in the JCPOA and would begin reimposing nuclear-related sanctions against Iran after a wind-down period. Following the United States withdrawal, the European Union updated Council Regulation (EC) No. 2271/96 of 22 November 1996, or the EU Blocking Statute, to expand its scope to cover the reimposed U.S. nuclear-related sanctions. The EU Blocking Statute aims to counteract the effects of the U.S. secondary sanctions.

Tenaris believes that its activities concerning Iran, described below, do not violate any U.S. or foreign law. In the cases described below, all deliveries of products and services and any other relevant activities by Tenaris ceased by the end of October 2018, that is, during the wind-down period and before the reimposing of the U.S. secondary sanctions. In addition, in all cases, Tenaris collected amounts owed for sales of goods or performance of services in accordance with OFAC regulations. Tenaris has procedures in place designed to ensure that such activities comply with all applicable U.S. and other international export control and economic sanctions laws and regulations. Currently, Tenaris does not intend to continue exploring commercial opportunities with potential Iranian business partners nor does it intend to participate in tender offers by, or issue offers to provide products or services to, Iranian companies or their subsidiaries.

#### Previous pending payments:

In January 2010, Tenaris Global Services S.A., or TGS, a Tenaris subsidiary, entered into an agreement with the National Iranian Drilling Company, or NIDC, a company controlled by the Government of Iran, for a total value of €9.4 million (approximately \$10.1 million). TGS made all deliveries and collected most of its account receivables under the NIDC agreement prior to 2012. As of December 31, 2018, TGS was owed €0.2 million (approximately \$0.2 million) under this agreement, although such amount has been written off for accounting purposes.



TGS is also a party to an April 2011 agreement with Global Procurement General Trading FZE, or Global FZE, a company incorporated in United Arab Emirates, for the provision of OCTG for an amount of AED16.5 million (approximately \$4.5 million). TGS has been informed by Global FZE that the end users of the products delivered under this agreement are Oil Industries Engineering and Construction Group and Pars Oil and Gas Company, which are controlled by the Government of Iran. All sales of goods and services to Iran under the agreement with Global FZE were fully performed by 2012. Tenaris collected the outstanding amount of AED0.9 million (approximately \$0.2 million) owed under this agreement during 2018. No delivery obligations under this agreement remained outstanding as of December 31, 2018.

2018 transactions and related activities:

Between January and May 2018, TGS participated in several tenders issued by the National Iranian Oil Company, or NIOC, and its subsidiaries for the supply of OCTG casing, tubing, line pipe and accessories for oil and gas projects in Iran. Moreover, between January and May 2018, TGS and other non-U.S. subsidiaries of Tenaris issued offers to NIOC and other Iranian companies for the provision of goods and/or services. Except as otherwise specified below, none of such tenders or offers were accepted by NIOC or resulted in agreements with NIOC. As of May 2018, Tenaris ceased to participate in tenders and issuing offers to NIOC, its subsidiaries or other Iranian companies through TGS or other non-U.S. subsidiaries of Tenaris.

In October 2016, TGS entered into an agreement for the provision of technical field service assistance to Petropars Ltd, or Petropars, for its project located in the Salman gas field in Iran, for a total value of EUR0.04 million (approximately \$0.04 million). TGS has been informed that Petropars operates the Salman project pursuant to a service contract with Iranian Offshore Oil Company, a subsidiary of NIOC. All services required to be performed by TGS for the benefit of Petropars were fully completed by 2016. On February 18, 2018, TGS collected the outstanding amount of EUR 0.004 million (approximately \$0.005 million) owed by Petropars under this agreement. No delivery obligations under this agreement remained outstanding as of December 31, 2018.

In May 2016, TGS was awarded by Toos Payvand Co., a Tehran-based company, a spot purchase order for carbon steel pipes for the Esfahan Refinery project (end user NIOC), for a total value of EUR3.5 million (approximately \$4.0 million). TGS delivered most of the items requested under such purchase order, for which the customer made advance payments, during 2017. By October 2018, during the wind-down period associated with the reimposition of U.S. secondary sanctions, TGS had delivered additional pending items for a total value of EUR0.1 million (approximately \$0.1 million), except for 8 tons of carbon steel pipes valued EUR26 thousand (approximately \$30 thousand). Shipments under this purchase order were suspended as of October 2018. Accordingly, as of December 31, 2018, TGS owes to Toos Payvand Co. an outstanding amount of EUR0.04 million (approximately \$0.04 million) for undelivered goods.

In November 2017, Dalmine S.p.A., or Dalmine, a Tenaris's subsidiary, booked a purchase order with Buhlmann RFS GmbH (a distributor located in Germany) for the provision of line pipes, which were originally intended for use in downstream activities in Iran for the Esfahan Oil Refinery Project (end user NIOC), for a total value of EUR0.6 million (approximately \$0.7 million). During 2018, this order was cancelled and, therefore, no material was delivered for such project. Accordingly, no revenues were recorded for such order as of December 31, 2018.

During 2017, Dalmine booked four orders with Commerciale Tubi Acciaio (a distributor located in Italy) for the provision of line pipes for use in downstream activities in Iran, Kangan Project, for a total value of EUR 0.9 million (approximately \$1.1 million). During 2018, Dalmine received additional new orders for products to be used in that project in Iran for EUR0.5 million (approximately \$0.5 million). By October 2018, Dalmine had delivered the material under the four orders procured in 2017. During 2018 Dalmine collected EUR1.4 million (approximately \$1.6 million) and delivered all items under the new orders received in 2018. No delivery obligations under such purchase orders remained outstanding as of December 31, 2018.

In July, 2017 TGS was awarded a spot order from Azar Ab Industries Co., for seamless tubes for manufacturing of Industrial Boiler for Esfahan Refinery in Iran, for a total value of approximately EUR1.2 million (approximately \$1.4 million), of which EUR0.2 million (approximately \$0.2 million) were collected as of December 31, 2017. By October 2018, TGS had delivered all outstanding items under such purchase order and, during 2018, TGS collected EUR 1.0 million (approximately \$1.1 million), representing the full outstanding amount thereunder. No delivery obligations

under such purchase order remained outstanding as of December 31, 2018.

During 2017, Dalmine was awarded some spot orders from Mapna International FZE, for carbon steel and low alloyed pipes and tubes delivered to Mapna Boiler and Equipment Engineering and Manufacturing Co., or Mapna, for the

manufacturing of boilers for conventional power plants in Iran for a total value of approximately EUR2 million (approximately \$2.4 million). By October 2018, Dalmine had delivered all outstanding items under such purchase order, of which EUR0.4 million (approximately \$0.5 million) were shipped during 2018. Moreover, during 2018 Dalmine collected EUR1.6 million (approximately \$1.8 million), representing the full outstanding amount thereunder. No delivery obligations under such purchase order remained outstanding as of December 31, 2018.

During 2018, Dalmine was awarded new spot orders from Mapna International FZE for a total value of EUR4.1 million (approximately \$4.7 million). By October 2018, Dalmine had delivered all items thereunder. During 2018, Dalmine collected EUR4.0 million (approximately \$4.5 million) under the spot orders; an outstanding balance of EUR0.1 million (approximately \$0.1 million) was due as of December 31, 2018. Dalmine expects to collect such outstanding amounts during 2019 to the extent permitted under OFAC regulations. No other obligations are due under these purchase orders.

In December 2016, TGS entered into a distribution agreement with Fanavaran Energy Part Co. (Part Technologist of Energy Company), or PTEC, a private Iranian company, for pipes used in downstream activities, such as refineries, petrochemical and gas processing. In August 2017, PTEC placed another purchase order for a total value of EUR1.5 million (approximately \$1.7 million). By October 2018, TGS had delivered all outstanding items under such purchase order. During 2018 TGS collected EUR1.5 million (approximately \$1.7 million), representing the full amount thereunder. No delivery obligations under such purchase order remained outstanding as of December 31, 2018. During 2018 TGS entered into several confidentiality agreements for the purpose of sharing information with potential Iranian business partners, some of which were companies controlled by the Government of Iran, with the aim of exploring commercial opportunities relating to the supply of goods and services to NIOC or its subsidiaries. No revenues were attributable to these activities.

In June 2017, TGS renewed its Agency Agreement (initially entered into in June 2016) with Industrials SGC Ltd., or SGC, (a U.K.-based company) which expired on June 12, 2018. The purpose of such agreement was to promote and market certain products manufactured by non-U.S. subsidiaries of Tenaris in the territory of Iran. Revenues attributable to this Agency Agreement for the year ended December 31, 2018, amounted to EUR8.2 million (approximately \$9.7 million).

On February 26, 2018, TGS was awarded by SGC, as customer, a spot purchase order for corrosion resistant alloy pipes for the Phase 12 South Pars Gas Field Project by Petropars, a subsidiary of NIOC, for end use by Pars Oil and Gas Company, another subsidiary of NIOC, for a total value of EUR1 million (approximately \$1.1 million). An export license required for this transaction was timely obtained in May 2018. All material was delivered by October 2018 and payment of the full amount thereunder was collected during 2018.

During 2018 Dalmine received an order from UK-based company BP Exploration Operating Co. Ltd., or BP Exploration, for EUR0.2 million (approximately \$0.2 million) for the provision of casing and coupling to be used in the Rhum Gas Oilfield (located in the United Kingdom). The partners in the Rhum Gas Oilfield are BP Exploration (50%) and Iranian Oil Co. UK Ltd. (50%), a subsidiary of NIOC. All items were delivered by October 2018. An outstanding balance of EUR0.2 million (approximately \$0.2 million) was due by BP Exploration as of December 31, 2018. Dalmine expects to collect such outstanding amounts during 2019 to the extent permitted under OFAC regulations. No other obligations are outstanding under these purchase orders.

Tenaris's total sales revenue for 2018 derived from the foregoing transactions amounted to approximately \$11.2 million. The estimated net profits from such transactions, after internal cost allocation, were in the range of \$3.7 million.

#### Tenova

Tenova S.p.A., or Tenova, an Italian supplier of equipment for the mining and the steel-making industry, is indirectly controlled by San Faustin and, accordingly, is deemed an "affiliate" of Ternium, as that term is defined in Exchange Act Rule 12b-2. In response to our inquiry, Tenova informed us that:

During 2018, Tenova or its subsidiaries supplied equipment and performed engineering services for the steel-making and raw material handling industries to companies believed by Tenova to be subsidiaries of development agencies of the Government of Iran. Moreover, certain employees of Tenova visited Iran during 2018 in order to perform the existing contracts and to discuss prospective commercial opportunities with potential Iranian business partners. All



discussions of prospective commercial opportunities were made on a promotional basis without making or receiving any payment, fee or revenue, other than routine amounts such as travel-related costs and taxes.

Tenova informed us that the start of any commercial discussion is subject to a preliminary validation by Tenova's internal committee to verify whether a customer is subject to any sanction or embargo or not.

None of the activities performed is connected to the activities described in Sections 5(a) or (b) of the Iran Sanctions Act of 1996, or Section 105A(b)(2) of the Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010, nor, at the time of their performance, were any such activities performed in favor of persons whose property and interests in property are blocked pursuant to Executive Order 13224 (terrorists and terrorist supporters) or 13382 (weapons of mass destruction proliferators and supporters).

All Tenova's Iran-related contracts were entered into prior to May 8, 2018. As a result of the reimposition of U.S. secondary sanctions described above, as of October 16, 2018, Tenova has suspended all its activities related to contracts involving sanctioned and/or listed Iranian entities.

Tenova informed us that its total sales revenue for 2018 with regard to the foregoing transactions amounted to \$15.5 million. Tenova also estimated that its net profits from such transactions, after internal cost allocation and taxes, were in the range of \$6 million.

#### Techint CTI

Techint - Compagnia Tecnica Internazionale S.p.A., or Techint CTI; an Italian provider of engineering, procurement, construction, operation and management services mainly in the oil & gas, refining, petrochemical, power, industrial and infrastructure sectors, is indirectly controlled by San Faustin and, accordingly, is deemed an "affiliate" of Ternium, as that term is defined in Exchange Act Rule 12b-2. In response to our inquiry, Techint CTI informed us that:

In December 18, 2017, Techint CTI entered into an agreement for the provision of technical assistance services (e.g. feasibility studies, technology selection) with Ardabil Petrochemical Co., effective as of February 20, 2018. As of December 31, 2018, Techint CTI collected an aggregate amount of approximately EUR38 thousand (or approximately \$44 thousand) for services under this agreement. The agreement was terminated on November 6, 2018, and no obligations are outstanding under this agreement.

During 2018 Techint CTI entered into additional ancillary documents (such as confidentiality agreements, expression of interest, memorandums of understanding and letters of intent) for the purpose of sharing information, among others, with the above-referred Iranian customer and others, mostly private entities. No revenues were attributable to these specific activities, other than the ones described in the above item.

Moreover, during 2018 certain non-U.S. employees of Techint CTI visited Iran in connection with the above-referred agreements and in order to discuss potential commercial opportunities with other Iranian public and private entities.

No fees were paid in connection with such activities, other than routine amounts such as travel-related taxes and fees.

No revenues were attributable to the above-referred activities. Techint CTI informed us that Techint CTI has procedures in place to ensure that any engagement with companies in Iran is done in compliance with applicable export control and economic sanctions laws and regulations.

C. Organizational Structure

Below is a simplified diagram of Ternium's corporate structure as of February 28, 2019.

Ternium

S.A. -

Luxembourg

-----4 Ternium      3-----  
 71.3% Mexico -      28.7%  
 Mexico

-----4 Ternium  
 60.9% Argentina -  
 Argentina

-----4 Ternium  
 100% Brasil -  
 Brazil

-----4 Ternium  
 100% Colombia -  
 Colombia

-----4 Tenigal -  
 51% Mexico

-----4 Ternium      3-----  
 Internacional  
 99.8% Guatemala - 0.2%  
 Guatemala

-----4 Ternium  
 100% USA - USA

For a detail of the companies whose financial statements have been consolidated and accounted for interest, see note 2 to our consolidated financial statements included in this annual report.

Subsidiaries

Ternium operates entirely through subsidiaries. For a complete list of its subsidiaries and a description of its investments in other companies, see note 2 to our consolidated financial statements included elsewhere in this annual report.

**Ternium Mexico.** Ternium Mexico is a leading flat and long steel manufacturer in Mexico, with total annual finished steel production capacity of approximately 7.5 million tons. Ternium Mexico's subsidiaries operate all of Ternium's mining and steel production facilities in Mexico, except for Tenigal's facilities. Ternium Mexico and its subsidiaries produce steel products mainly for the construction and industrial sectors.

**Ternium Argentina.** Ternium Argentina is the main integrated manufacturer of flat steel products in Argentina with total annual finished steel production capacity of approximately 3.0 million tons. The shareholders of Ternium Argentina as of March 31, 2019 are set out in the following table, together with the share percentage owned by each such shareholder as of that date:

Ternium Argentina's Shareholders	Number	Percent
Ternium	2,752,808,188	60.94 %

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ANSeS	1,175,806,541	26.03	%
Public	588,479,294	13.03	%
Total shares issued and outstanding	4,517,094,023	100.00	%

Ternium Brasil. On September 7, 2017, Ternium acquired Ternium Brasil from tkAG. Ternium Brasil is a high-end steel slab producer in Brazil, with annual production capacity of approximately 5.0 million tons. Ternium Brasil produces steel slabs mainly for Ternium's operations in Mexico, for Ternium Argentina and for third-party steel processors.

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**Ternium Colombia.** Ternium Colombia is a leading long and flat steel products processor and distributor in Colombia and a scrap-based long steel manufacturer, with total annual finished steel production capacity of approximately 540,000 tons.

**Tenigal.** Tenigal is a manufacturer of hot-dip galvanized and galvanized steel sheets serving the Mexican automotive industry with total annual finished steel production capacity of approximately 480,000 tons. Ternium and NSSMC hold 51% and 49% participations in Tenigal, respectively.

**Ternium Guatemala.** Ternium Guatemala and its subsidiaries operate all of Ternium's steel processing facilities in Guatemala, El Salvador, Nicaragua and Costa Rica. Ternium Guatemala and its subsidiaries produce hot-dip galvanized steel sheets and other value-added finished steel products mainly for the construction and industrial sectors. Ternium Guatemala has total annual finished steel production capacity of 110,000 tons.

**Ternium USA.** Ternium USA operates Ternium's steel processing activities in the United States and produces galvanized and color coated sheets in its Shreveport unit in Louisiana, United States. Ternium USA has total annual finished steel production capacity of 215,000 tons.

#### Other Investments

**Usiminas.** Usiminas is the largest flat steel producer in Brazil, with total annual crude steel production capacity of 9.5 million tons. Usiminas produces steel products mainly for the automotive, line pipe, civil construction, and electrical equipment manufacturing industries. Usiminas has iron ore mines in the Serra Azul region and industrial facilities in Ipatinga, Minas Gerais and in Cubatão, São Paulo, strategically located near the main consumers of steel in Brazil. In 2018, Usiminas shipped 4.2 million tons of steel products and 6.5 million tons of iron ore, and had net sales of BRL13.7 billion. Usiminas is a publicly-traded company listed on the São Paulo stock exchange, BM&FBOVESPA S.A - Bolsa de Valores, Mercadorias e Futuros.

On January 16, 2012, the Company's wholly-owned Luxembourg subsidiary Ternium Investments, together with Ternium Argentina (and its subsidiary Prosid), and the Company's affiliate TenarisConfab, joined Usiminas' existing control group through the acquisition of a total of 139.7 million ordinary shares of Usiminas, representing 27.7% of Usiminas' voting capital (22.7% corresponding to Ternium and the other 5% corresponding to TenarisConfab), and formed the T/T Group. As a result of such acquisition, Usiminas' control group, which at the time held, in the aggregate, 322.7 million ordinary shares representing approximately 63.9% of Usiminas' voting capital, was formed as follows: NSSMC Group, with approximately 46.1% of the total shares held by the control group; the T/T Group, with approximately 43.3% of the total shares held by the control group (35.6% corresponding to Ternium and the other 7.7% corresponding to TenarisConfab); and Previdência Usiminas, with the remaining 10.6% of the total shares held by the control group. The members of the control group entered into a shareholders' agreement dated January 16, 2012 governing their rights and obligations as shareholders of Usiminas.

On October 30, 2014, Ternium acquired 51.4 million additional ordinary shares of Usiminas. As part of a multi-round capital increase process, on June 3, 2016, Ternium (through Ternium Investments, Ternium Argentina and Prosid) was issued, in the aggregate, 8.5 million preferred shares and TenarisConfab was issued 1.3 million preferred shares; and on July 19, 2016, Ternium (through Ternium Investments, Ternium Argentina and Prosid) was issued, in the aggregate, 76.4 million ordinary shares and TenarisConfab was issued 11.5 million ordinary shares. Following the issuance of these ordinary shares, Ternium (through Ternium Investments, Ternium Argentina and Prosid) owns a total of 242.6 million ordinary shares and 8.5 million preferred shares, representing 20.5% of Usiminas' capital, and 34.4% of Usiminas' ordinary shares, and TenarisConfab owns a total of 36.5 million ordinary shares and 1.3 million preferred shares, representing 3% of Usiminas' capital, and 5.2% of Usiminas' ordinary shares.

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 generally with respect to Usiminas' business strategy.

On February 8, 2018, Ternium Investments resolved the dispute with NSSMC, establishing certain new governance rules for Usiminas as well as certain undertakings for the settlement of legal disputes. Ternium Investments and NSSMC further agreed to implement such new governance rules by seeking the agreement of the other members of the controlling group, and on April 10, 2018, the T/T Group, NSSMC Group and Previdência Usiminas entered into a new shareholders' agreement for Usiminas, amending and restating the January 16, 2012 shareholders' agreement (the "New SHA").

The New SHA reflects the agreed-upon corporate governance rules for Usiminas, including, among others, an alternation mechanism for the nomination of each of the chief executive officer and the chairman of the board of directors, as well as a mechanism for the nomination of other members of Usiminas' executive board. The right to nominate Usiminas' chief executive officer and chairman will alternate between Ternium and NSSMC at every 4-year interval, comprising two consecutive 2-year terms. For the initial four years, Ternium was entitled to nominate the CEO and NSSMC was entitled to nominate the chairman. The executive board is composed of six members, including the chief executive officer and five vice-presidents, with Ternium and NSSMC nominating three members each.

In addition to the Usiminas shares that were bound by the January 16, 2012 shareholders' agreement, the New SHA also covers the shares subscribed for by the members of the T/T Group and the NSSMC Group in connection with Usiminas' 2016 capital increase. As a result, Usiminas' control group now holds, in the aggregate, 483.6 million ordinary shares subject to the New SHA, representing approximately 68.6% of Usiminas' voting capital, with the T/T Group holding approximately 47.1% of the total shares held by the control group (39.5% corresponding to Ternium and the other 7.5% corresponding to TenarisConfab); the NSSMC Group holding approximately 45.9% of the total shares held by the control group; and Previdência Usiminas holding the remaining 7% of the total shares held by the control group.

Finally, the New SHA incorporates an exit mechanism consisting of a buy-and-sell procedure, exercisable at any time during the term of the New SHA after November 16, 2022. Such exit mechanism shall apply with respect to shares held by the NSSMC Group and the T/T Group, and would allow either Ternium or NSSMC to purchase all or a majority of the Usiminas shares held by the other shareholder group.

The 51.4 million ordinary shares of Usiminas acquired by Ternium on October 30, 2014 and 6.7 million ordinary shares acquired by NSSMC prior to execution of the January 16, 2012 shareholders' agreement remain free from any transfer restrictions under the New SHA and will not be subject to the exit mechanism described above.

In connection with the execution of the New SHA, Ternium Investments, Ternium Argentina, Prosid and TenarisConfab amended and restated their separate shareholders' agreement governing their respective rights and obligations as members of the T/T Group to include provisions relating to the exit mechanism and generally to conform such separate shareholders' agreement to the other provisions of the New SHA.

As of December 31, 2018, the closing price of the Usiminas ordinary and preferred shares, as quoted on the BM&F Bovespa Stock Exchange, was BRL11.44 (approximately \$2.95) per ordinary share and BRL9.22 (approximately \$2.38) per preferred share, respectively. Accordingly, as of December 31, 2018, Ternium's ownership stake had a market value of approximately \$736.5 million and a carrying value of \$480.1 million.

Techgen. Techgen is a joint venture company owned 48% by Ternium, 30% by Tecpetrol and 22% by Tenaris. In the fourth quarter of 2016, Techgen started operating a new natural gas-fired combined cycle electric power plant in the Pesquería area of the State of Nuevo León, Mexico, after total investment of \$1.1 billion. Ternium and Tenaris currently contract 78% and 22%, respectively, of Techgen's power capacity of approximately 900 megawatts. As a result, Ternium is securing the supply of electricity to its existing and future facilities in Mexico, and sells unused energy to the Mexican market. For further information on the Company's commitments under the Techgen project, see Item 5. "Operating and Financial Review and Prospects—E. Off-Balance Sheet Arrangements" and note 25(ii)(i), (j) and (k) to our consolidated financial statements included elsewhere in this annual report.

#### D. Property, Plants and Equipment

For further information, see "—B. Business Overview—Production Facilities and Processes" and "—B. Business Overview—Capital Expenditure Program."





#### Item 4A. Unresolved Staff Comments

None.

#### Item 5. Operating and Financial Review and Prospects

The following discussion and analysis of our financial condition and results of operations is based on, and should be read in conjunction with, our consolidated financial statements and the related notes included elsewhere in this annual report. This discussion and analysis presents our financial condition and results of operations on a consolidated basis. Certain information contained in this discussion and analysis is presented elsewhere in this annual report, including information with respect to our plans and strategies for our business, and includes forward-looking statements that involve risks and uncertainties. For further information, see “Cautionary Statement Concerning Forward-Looking Statements.” In evaluating this discussion and analysis, you should specifically consider the various risk factors identified in this annual report and others that could cause results to differ materially from those expressed in such forward-looking statements.

##### Overview

Ternium is Latin America’s leading flat steel producer with an annual crude steel production capacity of 12.4 million tons. We operate 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, construction, capital goods, container, food and energy industries across the Americas. We aim to build close relationships with our customers and recognize that our success is closely linked with theirs.

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.

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

Ternium’s revenues are affected by general global trends in the steel industry and more specifically by the economic conditions in the countries in which it has manufacturing operations and where its customers are located. Ternium’s revenues are also impacted by events that affect the price and availability of raw materials, energy and other inputs needed for its operations. Furthermore, due to the highly cyclical nature of the steel industry, recent results may not be indicative of future performance, and historical results may not be comparable to future results. Investors should not rely on the results of a single period, particularly a period of peak prices, as an indication of Ternium’s annual results or future performance. The variables and trends mentioned below could also affect the results of its investments in steel related companies.

For further information on Ternium’s business strategy, see Item 4. “Information on the Company—B. Business Overview—Our Business Strategy.”

Ternium’s primary source of revenue is the sale of steel products. Management expects sales of steel products to continue to be Ternium’s primary source of revenue. The global market for such steel products is highly competitive, with the primary competitive factors being price, cost, product quality and customer service. The majority of Ternium’s sales are concentrated in the Americas. Specifically, Ternium’s largest markets for finished steel products are

Mexico, Argentina and Colombia, and Ternium's largest markets for slabs are Brazil and the United States.

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Ternium's results are sensitive to economic activity and steel consumption. Ternium's results of operations, which primarily depend on economic conditions in Mexico and Argentina, are also influenced by economic conditions in international and regional markets such as the United States, Mercosur and the Andean Community. Historically, annual steel consumption in the countries where Ternium operates has varied at a rate that is linked to the annual change in each country's gross domestic product and per capita disposable income. The 2008-2009 global economic downturn resulted in an overall decreased demand for Ternium's products. For example, apparent consumption of finished steel products decreased in 2009 by 15% in Mexico and 33% in Argentina. This economic downturn had a pronounced negative effect on Ternium's business and results of operations in 2009. Subsequently, apparent steel consumption recovered in these countries in sync with the recovery of economic activity. A protracted global recession or a depression would have a material adverse effect on the steel industry and Ternium.

Ternium's results are also sensitive to prices in the international steel markets. Steel prices are volatile and are sensitive to supply conditions and to trends in cyclical industries, such as the construction, automotive, appliance and machinery industries, which are significant markets for Ternium's finished steel products. For example, steel prices in the international markets, which had been rising quickly during the first half of 2008, fell sharply beginning in the second half of 2008 as a result of collapsing apparent demand and the resulting excess capacity in the industry. The fall in prices during this period adversely affected the results of steel producers generally, including Ternium, as a result of lower revenues and write-downs of finished steel products and raw material inventories. Beginning in the second half of 2009, steel prices in the international markets rebounded mainly as a result of the increase in the demand for steel in China and other emerging markets, and the subsidence of the worldwide de-stocking process. Since 2009, international steel prices fluctuated within a wide range with an upward trend in the 2009-2011 period, a downward trend in the 2011-2015 period and an upward trend since 2016. In this context, Ternium's operating income increased 45% year-over-year in 2018, 28% year-over-year in 2017 and 79% year-over-year in 2016. A protracted fall in steel prices would have a material adverse effect on Ternium's results, as could price volatility.

Trends in the steel industry may also have an impact on Ternium's results. In addition to economic conditions and prices, the steel industry is affected by other factors such as worldwide and regional production capacity and fluctuations in steel imports/exports and tariffs. Historically, the steel industry has suffered, especially in downturn cycles, from substantial overcapacity. Currently, as a result of the 2008-2009 global downturn, slower global economic growth and the increase in steel production capacity, there is excess capacity in the global steel market that could negatively affect the industry's margins. In Mexico and the southern United States, there are several new steel making and steel processing facilities announced or under construction. For further information on Ternium's competition in the Mexican market see Item 4. "Information on the Company—B. Business

Overview—Competition—Steel—Mexico". Furthermore, there has been a trend toward steel industry consolidation among Ternium's competitors, and current smaller competitors in the steel market could become larger competitors in the future. Intense competition could impact Ternium's share in certain markets and adversely affect its sales and revenue. Ternium's production costs are sensitive to prices of raw materials, slabs and energy, which reflect supply and demand factors in the global steel industry. Ternium purchases substantial quantities of raw materials (including iron ore, coal, ferroalloys and scrap) and slabs for use in the production of its steel products. The availability and price of these and other inputs vary, sometimes significantly, according to general market and economic conditions. In addition to raw materials and slabs, natural gas is an important component of Ternium's cost structure. Ternium generally purchases these inputs at market or market-based prices; accordingly, price fluctuations in these inputs, which may also vary according to general market and economic conditions, impact Ternium's production costs.

Ternium's export revenues could be affected by trade restrictions and its domestic revenues could be affected by unfair competition from imports. During the second half of the 1990s, a period of strong oversupply, several antidumping measures were imposed in several countries in which Ternium operates (including Mexico, Argentina and the United States) to prevent foreign steel producers from dumping certain steel products in local markets. The recovery in global economic conditions during the 2003–2008 period helped normalize international steel trade conditions and, eventually, several countries reduced or eliminated protective measures established in prior years including Argentina, Ternium's second-largest steel market. However, in the face of a protracted period of oversupply since 2009, some countries have been reestablishing antidumping duties and/or other safeguards to protect their domestic markets, including

Mexico, Ternium's largest steel market, adding to measures that remained in place from before. Ternium's ability to profitably access the export markets may be adversely affected by trade restrictions, including antidumping duties and countervailing measures, in those markets. In addition, Ternium's ability to sell some steel products in its principal markets could be affected by unfair competition from imports of those steel products from certain countries, if applicable trade regulations were not in force. For example, during 2018, under Section 232 of the Trade Expansion Act of 1962, the United States imposed a 25% tariff on steel imports; however, Australia was exempted from the tariff; although Argentina, Brazil and South Korea were also exempted, they were

subject to quota system agreements covering steel imports from those countries. This trade measure could stimulate aggressive export offers elsewhere, exerting downward pressure on sales and margins of steel companies operating in other markets and regions, including those in which Ternium operates. For further information, see Item 4.

“Information on the Company—B. Business Overview—Regulations—Trade Regulations.”

Changes in prevailing exchange rates could impact results from subsidiaries with net short or long positions in currencies other than their functional currencies. The functional currency of our Mexican, Brazilian and Colombian consolidated subsidiaries is the U.S. dollar, and the functional currency of Ternium Argentina is the Argentine peso. Ternium’s subsidiaries record foreign exchange results on their net non-functional currency positions when the functional currencies appreciate or depreciate with respect to other currencies. For example, Ternium’s net foreign exchange result was a loss of \$177.6 million in 2018, a loss of \$65.5 million in 2017 and a gain of \$20.3 million in 2016. In addition, Ternium’s Mexican, Brazilian and Colombian subsidiaries record deferred tax results when the U.S. dollar (their functional currency) appreciates or depreciates in relation to the Mexican peso, the Brazilian real or the Colombian peso, respectively, as such fluctuations change, in U.S. dollar terms, the tax base used to calculate deferred tax at such subsidiaries. Fluctuations in the value of such functional currencies against other currencies have had, and may also have in the future, an impact on Ternium’s results.

Changes in prevailing exchange rates have had an impact on Ternium’s comprehensive results in the past and could impact comprehensive results from subsidiaries and investments with a functional currency other than the U.S. dollar in the future. In accordance with IFRS, Ternium records currency translation adjustments in its consolidated statements of comprehensive income. These adjustments do not affect results but, instead, have an impact on net worth. Fluctuations in the Brazilian real (as our participation in Usiminas is denominated in Brazilian reais) and the Argentine peso (as it is the functional currency of Ternium Argentina) against the U.S. dollar have had, and may also have in the future, an impact on Ternium’s comprehensive results. Ternium’s currency translation adjustments resulted in losses of \$450.0 million in 2018, \$104.4 million in 2017 and \$87.8 million in 2016. These adjustments included the effect of the devaluation of the Argentine peso on the value of Ternium Argentina’s net assets as measured in U.S. dollars, amounting to a loss of \$337.5 million in 2018, a loss of \$96.9 million in 2017 and a loss of \$139.6 million in 2016, and the effect of the devaluation of the Brazilian real on the value of Ternium’s investment in Usiminas as measured in U.S. dollars, amounting to a loss of \$72.5 million in 2018, a loss of \$8.6 million in 2017 and a gain of \$54.7 million in 2016.

Argentina is a hyperinflationary economy under the terms of IAS 29 as from July 1, 2018, and, accordingly, Ternium applied IAS 29 as from that date in the financial reporting of Ternium’s Argentine subsidiaries. Under applicable accounting principles, the financial statements of an entity that reports in the currency of a hyperinflationary economy must be stated in terms of the measuring unit current on the date of the financial statements. All statement of financial position amounts that are not stated in terms of the measuring unit current on the date of the financial statements must be restated by applying a general price index. On January 1, 2018, Ternium recognized an initial gain related to the adoption of IAS 29 to its Argentine subsidiaries of \$421.5 million on retained earnings and of \$268.8 million on non-controlling interest in its consolidated statements of changes in equity; and recognized an inflation adjustment gain of \$191.4 million for 2018 in the “Other financial income / (expenses), net” line of its consolidated income statement. For further information on the effects of the adoption of IAS 29 to Ternium’s Argentine subsidiaries, see note 4(cc) to our consolidated financial statements included elsewhere in this annual report.

Critical accounting estimates. This discussion of our operating and financial review and prospects is based on our consolidated financial statements included elsewhere in this annual report, which have been prepared in accordance with IFRS. The use of IFRS has an impact on our critical accounting policies and estimates.

The preparation of financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and the related disclosure of contingent assets and liabilities. Estimates and judgments are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Management makes estimates and assumptions concerning the future. Actual results may differ significantly from these estimates under different assumptions or conditions.

The principal estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

Goodwill impairment test. Assessment of the recoverability of the carrying value of goodwill requires significant judgment. Management evaluates goodwill allocated to the operating units for impairment on an annual basis or whenever there is an impairment indicator. Goodwill is tested at the lowest levels for which there are separately

identifiable cash flows (each, a CGU). Impairment testing of the CGUs is carried out and the value in use determined in accordance with the accounting policy stated in note 4(f) to our consolidated financial statements included elsewhere in this annual report:

Assets that have an indefinite useful life (including goodwill) are not subject to amortization and are tested annually for impairment or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Assets that are subject to amortization and investments in affiliates are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less cost to sell and the value in use.

To carry out these tests, assets are grouped at the level of the CGUs. When evaluating long-lived assets for potential impairment, the Company estimates the recoverable amount based on the value in use of the corresponding CGU. The value in use of each CGU is determined on the basis of the present value of net future cash flows which will be generated by the assets tested.

Determining the present value of future cash flows involves highly sensitive estimates and assumptions specific to the nature of each CGU's activities, including estimates and assumptions relating to amount and timing of projected future cash flows, expected changes in market prices, expected changes in the demand of Ternium products and services, selected discount rate and selected tax rate.

Ternium uses cash flow projections for the next five years based on past performance and expectations of market development; thereafter, it uses a perpetuity rate. Application of the discounted cash flow method to determine the value in use of a CGU begins with a forecast of all expected future net cash flows. Variables considered in forecasts include the GDP growth rates of the country under study and their correlation with steel demand, level of steel prices and estimated raw material costs as observed in industry reports.

Cash flows are discounted at rates that reflect specific country and currency risks associated with the cash flow projections.

As a result of the above factors, actual cash flows and values could vary significantly from the forecasted future cash flows and related values derived using discounting techniques. Based on the information currently available, however, Ternium believes that it is not reasonably possible that the variation would cause the carrying amount to exceed the recoverable amount of the CGUs.

The discount rates used are based on the weighted average cost of capital, which is considered to be a good indicator of cost of capital. As of December 31, 2018 the discount rate used to test goodwill allocated to the Steel and Mining Mexico CGUs for impairment was 11.68% (as of December 31, 2017, 11.49%).

At December 31, 2018, 2017 and 2016, no impairment charges to CGUs with allocated goodwill resulted from the impairment tests performed. Any future impairment charge could have a material adverse effect on Ternium's results of operations, financial condition and net worth.

**Income taxes.** Management calculates current and deferred income taxes according to the tax laws applicable to each subsidiary in the countries in which such subsidiaries operate. However, certain adjustments necessary to determine the income tax provision are finalized only after the balance sheet is issued. In cases in which the final tax outcome is different from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made. Also, when assessing the recoverability of tax assets, management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies. For further information, see note 11 to our consolidated financial statements included elsewhere in this annual report.

**Loss contingencies.** Ternium is subject to various claims, lawsuits and other legal proceedings that arise in the ordinary course of business, including customer claims in which a third party is seeking reimbursement or indemnity. The Company's liability with respect to such claims, lawsuits and other legal proceedings cannot be estimated with certainty. Periodically, management reviews the status of each significant matter and assesses potential financial exposure. If the potential loss from the claim or proceeding is considered probable and the amount can be reasonably estimated, a liability is recorded. Management estimates the amount of such liability based on the information

available and the assumptions and methods it has concluded are appropriate, in accordance with the provisions of IFRS. Accruals for such contingencies reflect a reasonable estimate of the losses to be incurred based on information available, including the relevant litigation or settlement strategy, as of the date of preparation of these financial



statements. As additional information becomes available, management will reassess its evaluation of the pending claims, lawsuits and other proceedings and revise its estimates. The loss contingencies provision amounts to \$643.9 million and \$768.5 million as of December 31, 2018 and 2017, respectively.

Allowance for obsolescence of supplies and spare parts and slow-moving inventory. Management assesses the recoverability of its inventories considering their selling prices or whether they are damaged or have become wholly or partly obsolete. Net realizable value is the estimated selling price in the ordinary course of business, less the costs of completion and selling expenses. The Company establishes an allowance for obsolete or slow-moving inventory in connection with finished goods and goods in process. The allowance for slow-moving inventory is recognized for finished goods and goods in process based on management's analysis of their aging. In connection with supplies and spare parts, the calculation is based on management's analysis of their aging, the capacity of such materials to be used based on their levels of preservation and maintenance, and their potential obsolescence due to technological change. As of December 31, 2018 and 2017, the Company recorded no allowance for net realizable value and \$55.5 million and \$36.2 million, respectively, as allowance for obsolescence.

Useful lives and impairment of property, plant and equipment and other long-lived assets. In determining useful lives, management considered, among others, the following factors: age, operating condition and level of usage and maintenance. Management conducted visual inspections for the purpose of: (i) determining whether the current conditions of such assets are consistent with normal conditions of assets of similar age; (ii) confirming that the operating conditions and levels of usage of such assets are adequate and consistent with their design; (iii) establishing obsolescence levels, and (iv) estimating life expectancy, all of which were used in determining useful lives.

Management believes, however, that it is possible that the periods of economic utilization of property, plant and equipment may be different than the useful lives so determined. Furthermore, management believes that this accounting policy involves a critical accounting estimate because it is subject to change from period to period as a result of variations in economic conditions and business performance.

When assessing whether an impairment indicator may exist, the Company evaluates both internal and external sources of information, such as the following:

- whether significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated;

- whether market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset's value in use and decrease the asset's recoverable amount materially;

- whether the carrying amount of the net assets of the entity is more than its market capitalization;

- whether evidence is available of obsolescence or physical damage of an asset;

- whether significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used.

- These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, plans to dispose of an asset before the previously expected date, and reassessing the useful life of an asset as finite rather than indefinite;

- whether evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected;

- whether it is becoming probable that the investee will enter bankruptcy or other financial reorganization, or is experiencing other financial difficulty;

- whether observable data indicates that there is a measurable decrease in the estimated future cash flows of the investee since the initial recognition; and

- whether the lender of the investee, for economic or legal reasons relating to the investee's financial difficulty, has granted a concession that the lender would not otherwise consider.

Considering the economic situation in Argentina, with increased inflation rates, the devaluation of the Argentine peso and a weaker industrial environment, the Company tested the recoverability of its investment in Ternium Argentina as



of December 31, 2018, resulting in no impairment charges to be recognized. The discount rate used to test the investment in Ternium Argentina was 13.5%.

Considering that no impairment indicators were identified in the rest of the subsidiaries as of December 31, 2018 and 2017, Ternium tested for impairment only the goodwill value, resulting in no impairment charges being required to be recognized. Consequently, during the years 2018, 2017 and 2016, no impairment charges were recorded in connection with assets that have an indefinite useful life (including goodwill). Based on the information currently available to us, as of the date of this annual report, the Company is not aware of any factors that would lead to the recognition of future impairment charges. Any such impairment charges could have a material adverse effect on Ternium's results of operations, financial condition and net worth.

**Allowances for doubtful accounts.** Management makes estimates of the uncollectibility of our accounts receivable. Management analyses the trade accounts receivable on a regular basis and applies the IFRS 9 simplified approach to measuring expected credit losses, which uses a lifetime expected loss allowance for all trade receivables. To measure the expected credit loss, trade receivables are grouped based on shared credit risk characteristics and the days past due. Allowances for doubtful accounts are adjusted periodically in accordance with the results obtained in a provision matrix. To calibrate the provision matrix, management adjusts its historical credit loss experience with current and forward-looking information that might affect the customers' historical default rates. As of December 31, 2018 and 2017, allowance for doubtful accounts totaled \$14.3 million and \$16.5 million, respectively.

Historically, losses due to credit failures, aging of overdue accounts and customer claims have been within expectations and in line with the provisions established. If, however, circumstances were to materially change (e.g., higher than expected defaults), management's estimates of the recoverability of amounts due to us could be materially reduced and our results of operations, financial condition and net worth could be materially and adversely affected.

**Mining reserve estimates.** Reserves are estimates of the amount of product that can be economically and legally extracted from the Company's mining concessions. In order to estimate reserves, a range of geological, technical and economic factors must be considered. Estimating the quantity and/or grade of reserves requires complex and difficult geological judgments to interpret the data. Because the economic assumptions used to estimate reserves change from period to period, and because additional geological data is generated during the course of operations, estimates of reserves may change from period to period.

Changes in reported reserves may affect the Company's financial results and financial position. For example:

• Asset carrying amounts may be affected due to changes in estimated future cash flows.

• Depreciation and amortization charges may change where such charges are determined by the units of production basis, or where the useful economic lives of assets change.

• Stripping costs recognized in Mining assets or charged to results may change due to changes in stripping ratios or the units of production basis of depreciation.

• Asset retirement obligations may change where changes in estimated reserves affect expectations about the timing or cost of these activities.

**Post-employment obligation estimates.** The Company estimates at each year-end the provision necessary to meet its post-employment obligations in accordance with the advice from independent actuaries. The calculation of post-employment and other employee obligations requires the application of various assumptions. The main assumptions for post-employment and other employee obligations include discount rates, compensation growth rates, pension growth rates and life expectancy. Changes in the assumptions could give rise to adjustments in the results and liabilities recorded and might have an impact on the post-employment and other employee obligations recognized in the future.

**Business combinations.** The recognition of business combinations requires the excess of the purchase price of acquisitions over the net book value of assets acquired to be allocated to the assets and liabilities of the acquired entity. The Company makes judgements and estimates in relation to the fair value allocation of the purchase price. If any unallocated portion is positive, it is recognized as goodwill, and if negative, it is recognized in the income statement. For further information on business combinations, see note 3 to our consolidated financial statements included elsewhere in this annual report.



A. Results of Operations

The following discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements included elsewhere in this annual report. Accordingly, this discussion and analysis present our financial condition and results of operations on a consolidated basis. For further information, see “Presentation of Certain Financial and Other Information—Accounting Principles” and notes 2 and 4 to our consolidated financial statements included elsewhere in this annual report. The following discussion should be read in conjunction with our consolidated financial statements and the related notes included elsewhere in this annual report.

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Selected consolidated income statement data In thousands U.S. dollars (except number of shares and per share data)	For the year ended December 31,				
	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 income (expenses), net	(69,640 )	(69,915 )	37,957	(17,922 )	40,731
Equity in earnings (losses) of non-consolidated companies <sup>(1)</sup>	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 <sup>(2)</sup>	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 <sup>(3)(4)</sup>	0.77	0.45	0.30	—	(0.10 )
Basic earnings (losses) per ADS <sup>(3)(4)</sup>	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

Equity in earnings (losses) of non-consolidated companies include write-downs of our investment in Usiminas, as a (1) 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.

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

International Accounting Standard N° 1 (IAS 1) (revised) requires that income for the year as shown in the income (3) 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 thousands of 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 <sup>(1)</sup>	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 <sup>(2)</sup>	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
<b>Total assets</b>	<b>12,547,862</b>	<b>12,122,566</b>	<b>8,322,870</b>	<b>8,062,593</b>	<b>9,690,159</b>
Capital and reserves attributable to the owners of the parent <sup>(3)</sup>	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
<b>Total liabilities</b>	<b>5,063,286</b>	<b>6,269,795</b>	<b>3,156,277</b>	<b>3,259,596</b>	<b>4,055,456</b>
<b>Total equity and liabilities</b>	<b>12,547,862</b>	<b>12,122,566</b>	<b>8,322,870</b>	<b>8,062,593</b>	<b>9,690,159</b>
Number of shares <sup>(3)</sup>	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.

#### Fiscal Year Ended December 31, 2018 compared to Fiscal Year Ended December 31, 2017

##### Overview

During 2018, shipments in the Mexican market were 6.5 million tons, representing 51% of Ternium's total steel shipments. Apparent steel demand in Mexico reached 25.9 million tons in 2018 with steady demand from the manufacturing sector and weak commercial markets, usually driven by construction activity, as a result of low public and private investment. Shipments in the Southern Region reached 2.3 million tons in 2018, or 18% of Ternium's consolidated shipments in the steel segment, decreasing 6% year-over-year. Apparent flat steel demand in Argentina



decreased year-over-year in 2018 to approximately 2.6 million tons. The Argentine economy was affected during the year by weak agricultural production due to adverse weather conditions, financial market volatility and a significant increase in interest rates. Activity levels in the country's main flat steel consuming sectors experienced a significant decline during the second half of 2018. In addition, apparent flat steel demand was impacted during the fourth quarter by a destocking process in the value chain.

Shipments in the Other Markets region reached 4.1 million tons in 2018, or 32% of Ternium's consolidated

shipments in the steel segment. Shipments in this region in 2018 increased 1.6 million tons year-over-year, or 63%, including a 1.5 million-ton increase in slab shipments. On September 7, 2017, Ternium acquired from thyssenkrupp AG Ternium Brasil's slab-making facility in Rio de Janeiro, Brazil, and started consolidating Ternium Brasil's financial statements as from that month. Consequently, 2018 is the first full year reflecting the effect of the consolidation of Ternium Brasil on our shipments in the Other Markets region. Ternium Brasil ships slabs to third parties in the United States Slabs exports from Brazil to the United States are subject to a quota system and are, therefore, exempted from the 25% tariff set on steel imports under Section 232 of the U.S. Trade Expansion Act. In addition, Ternium Brasil ships slabs to other Ternium's subsidiaries, which are eliminated in the process of consolidation, and to third parties in Brazil and other countries.

In the United States, apparent demand for finished steel increased 2.3% year-over-year in 2018, on improved manufacturing activity and healthier economic performance. Ternium's shipments of finished steel products in the country (excluding Ternium Brasil's slab shipments) decreased in 2018 as steel imports from Mexico were affected by the 25% tariff set under Section 232 of the U.S. Trade Expansion Act.

In Colombia, the steel market stabilized in 2018 following a decrease in steel demand in 2017. During the year, oil and gas activity continued recovering in the country. On the other hand, weak infrastructure investment and a slow recovery in residential building investment weighed on industry growth. Ternium's shipments in the country increased slightly in 2018.

Operating income in 2018 was \$2.1 billion, the highest on record, reflecting strong steel market prices in Mexico and the consolidation of Ternium Brasil. Ternium Brasil enabled us to integrate our operations and, at the same time, take advantage of a strong slab market in 2018. Compared to 2017, operating income in 2018 increased \$651.6 million, mainly due to 1.4 million-ton increase in steel shipments and \$47 increase in steel revenue per ton, partially offset by an \$11 increase in steel operating cost per ton, which equals steel cost of sales plus steel SG&A, divided by shipments. The increase in steel volumes was the result of higher shipments in the Other Market's region, due to the consolidation of Ternium Brasil's slab sales since September 2017, partially offset by a 155,000-ton decrease in the Southern Region and a 78,000-ton decrease in Mexico. The increase in steel cost per ton mainly reflected higher purchased slab and raw material costs, partially offset by higher integration in our operations.

Net income in 2018 was \$1.7 billion, reflecting the strength of our operations and a low effective tax rate. The effective tax rate in 2018 included a \$104.1 million tax gain due to the effect of an asset revaluation for tax purposes at Ternium's Argentine subsidiary. Compared to net income of \$1.0 billion in 2017, net income in 2018 increased \$639.2 million, mainly due to the higher operating income and low effective tax rate in 2018, and higher results from equity in earnings of Usiminas, partially offset by slightly higher net financial expenses.

#### Net Sales

Net sales in 2018 were \$11.5 billion, 18% higher than net sales in 2017. The following table outlines Ternium's consolidated net sales for 2018 and 2017:

	Net sales (in millions of U.S. dollars)		
	2018	2017	Dif.
Mexico	6,134.0	5,378.6	14 %
Southern Region	1,933.4	2,313.6	(16 )%
Other Markets	3,023.6	1,699.0	78 %
Total steel products consolidated net sales	11,091.0	9,391.2	18 %
Other products <sup>(1)</sup>	362.4	309.1	17 %
Total steel segment net sales	11,453.4	9,700.3	18 %

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Total mining segment net sales	282.0	271.5	4	%
Intersegment eliminations	(280.6	) (271.4	)	
Total consolidated net sales	11,454.8	9,700.3	18	%

<sup>(1)</sup> The item "Other products" primarily includes Ternium Brasil's and Ternium Mexico's electricity sales.

Cost of sales

Cost of sales was \$8.5 billion in 2018, an increase of \$1.1 billion compared to 2017. This was principally due to a \$883.5 million, or 15%, increase in raw material and consumables used, mainly reflecting a 12% increase in steel shipments and higher raw material and purchased slab costs, partially offset by lower energy costs; and to a \$196.8 million increase in other costs, mainly including a \$108.1 million increase in depreciation of property, plant and equipment due to the full consolidation of Ternium Brasil and the effect of inflation adjustment in Argentina, a \$47.6 million increase in services and fees, and a \$39.1 million increase in maintenance expenses.

Selling, general and administrative (SG&A) expenses

SG&A expenses in 2018 were \$876.8 million, or 7.7% of net sales, an increase of \$52.5 million compared to SG&A expenses in 2017 mainly due to higher freight and transportation expenses and labor costs, partially offset by lower services and fees expenses.

Other net operating income

Other net operating income in 2018 was a \$13.7 million gain, compared to a \$16.2 million loss in 2017. Other net operating income in 2018 was mainly related to a recovery of tax credit in Ternium Brasil.

Operating income

Operating income in 2018 was \$2.1 billion, or 18.4% of net sales, compared to operating income of \$1.5 billion, or 15% of net sales, in 2017. The following table outlines Ternium's operating income by segment for 2018 and 2017:

In millions of U.S. dollars	Steel segment		Mining segment		Intersegment eliminations		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
Net Sales	11,453.4	9,700.3	282.0	271.5	(280.6)	(271.4)	11,454.8	9,700.3
Cost of sales	(8,524.9)	(7,465.8)	(239.9)	(212.9)	281.5	275.6	(8,483.3)	(7,403.0)
SG&A expenses	(860.9)	(811.5)	(15.9)	(12.8)	—	—	(876.8)	(824.2)
Other operating income (expense), net	12.9	(17.0)	0.7	0.8	—	—	13.7	(16.2)
Operating income	2,080.6	1,406.0	26.9	46.6	0.8	4.1	2,108.4	1,456.8

Steel reporting segment

The steel segment's operating income was \$2.1 billion in 2018, an increase of \$674.6 million compared to the operating income in 2017, reflecting higher net sales, partially offset by higher operating cost.

Net sales of steel products in 2018 increased 18% compared to 2017, reflecting a 1.4 million-ton increase in shipments and a \$47 increase in steel revenue per ton. Shipments increased 12% year-over-year mainly due to higher shipments in Other Markets and the consolidation of Ternium Brasil since September 2017, partially offset by lower shipments in Southern Region, reflecting lower demand for steel products, and slightly lower shipments in Mexico. Revenue per ton in 2018 was higher than in the previous year as a result of higher steel prices in Ternium Mexico and in Other Markets. Although steel prices in the Southern Region were relatively stable in U.S. dollar terms year-over-year, revenue per ton decreased due to the effect of inflation adjustment in Argentina.

	Net Sales (million U.S. dollars)			Shipments (thousands of tons)			Revenue/ton (\$/ton)		
	2018	2017	Dif. %	2018	2017	Dif. %	2018	2017	Dif. %
Mexico	6,134.0	5,378.6	14 %	6,544.8	6,622.8	-1 %	937	812	15 %
Southern Region	1,933.4	2,313.6	-16 %	2,301.1	2,456.0	-6 %	840	942	-11 %
Other Markets	3,023.6	1,699.0	78 %	4,105.2	2,517.7	63 %	737	675	9 %
Total steel products	11,091.0	9,391.2	18 %	12,951.1	11,596.6	12 %	856	810	6 %
Other products <sup>(1)</sup>	362.4	309.1	17 %						
Total steel segment	11,453.4	9,700.3	18 %						

<sup>(1)</sup> The item "Other products" primarily includes Ternium Brasil's and Ternium Mexico's electricity sales.



Operating cost increased 13% due to the above-mentioned 12% increase in shipment volumes and a 2% increase in operating cost per ton.

#### Mining reporting segment

The mining segment's operating income was a gain of \$26.9 million in 2018, lower than a gain of \$46.6 million in 2017, reflecting higher operating cost, partially offset by higher iron ore sales.

Net sales of mining products in 2018 were 4% higher than those in 2017, reflecting a 2% increase in shipments and a 2% increase in revenue per ton.

	Mining segment		
	2018	2017	Dif.
Net Sales (million of U.S. dollars)	282.0	271.5	4 %
Shipments (thousands of tons)	3,616.3	3,551.1	2 %
Revenue per ton (\$/ton)	78	76	2 %

Operating cost increased 13% year-over-year mainly due to 11% increase in operating cost per ton and the mentioned above 2% increase in shipment volumes.

#### Net financial results

Net financial results were \$179.6 million loss in 2018, compared to \$165.1 million loss in 2017. During 2018, Ternium's net financial interest results totaled a loss of \$109.9 million, compared with a loss of \$95.2 million in 2017, reflecting higher average indebtedness partially offset by a lower average cost of debt.

Net foreign exchange results included a \$112.2 million negative year-over-year difference mainly related to the effect of the fluctuations of the Argentine and Mexican peso against the U.S. dollar. In 2018, the Argentine peso depreciated 51% against the U.S. dollar compared to 15% in 2017, resulting in a non-cash negative impact in Ternium Argentina's U.S. dollar financial position (which uses the Argentine peso as its functional currency).

Change in fair value of financial instruments included in net financial results was a \$99.3 million loss in 2018 compared to a \$3.1 million gain in 2017. The loss in 2018 was mainly related to certain derivative instruments entered into to compensate for the interest rate charges derived from Ternium's Argentine subsidiaries' local currency denominated financial debt, as well as to currency derivatives in Mexico.

The effect of inflation on Ternium's Argentine subsidiaries and associates' short net monetary position was a gain of \$191.4 million as a result of the application of IAS 29 from 2018.

#### Equity in results of non-consolidated companies

Equity in results of non-consolidated companies was a gain of \$102.8 million in 2018, compared to a gain of \$68.1 million in 2017 mainly due to better results from Ternium's investment in Usiminas.

#### Income tax expense

Income tax expense in 2018 was \$369.4 million, or 18% of income before income tax, compared to an income tax expense of \$336.9 million, or 25% of income before income tax in 2017. The unusually low effective tax rate in 2018 was mainly the result of a \$104.1 million tax gain related to the effect of an asset revaluation for tax purposes at Ternium's Argentine subsidiary. In 2017, the effective tax rate included a non-cash gain on deferred taxes due to the 5% appreciation of the Mexican peso against the U.S. dollar during the year which reduces, in U.S. dollar terms, the tax base used to calculate deferred tax at our Mexican subsidiaries (which have the U.S. dollar as their functional currency).

Net income attributable to non-controlling interests

Net gain attributable to non-controlling interest in 2018 was \$155.5 million, compared to a net gain of \$136.7 million in 2017.

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Fiscal Year Ended December 31, 2017 compared to Fiscal Year Ended December 31, 2016

#### Overview

During 2017, shipments in the Mexican market reached a new record of 6.6 million tons, representing 57% of Ternium's total steel shipments. Apparent steel demand in Mexico reached a new record of 26.4 million tons in 2017 driven mainly by improved local manufacturing activity. Apparent steel demand in Argentina increased 17% year-over-year in 2017 to approximately 4.9 million tons. A markedly better business environment fostered a gradual recovery of most steel consuming sectors during the year. Of note in the rebound of steel consumption was a significant recovery of the construction sector (mainly public works) and the agribusiness activity, and the startup of new natural gas and oil investments in the Vaca Muerta shale formation. In addition, the incipient recovery of the Brazilian economy during 2017 helped raise activity levels in some industrial sectors in Argentina, which started to show improvements.

On September 7, 2017, Ternium acquired Ternium Brasil's slab-making facility in the state of Rio de Janeiro, Brazil, from tkAG. Following the consolidation of Ternium Brasil's financial statements, shipments in the Other Markets Region increased 121% year-over-year to 2.5 million tons, representing 22% of Ternium's total shipments in the steel segment. The volume increase included 1.3 million tons of slabs shipped to third parties in the United States and Brazil from the Rio de Janeiro facility, between September and December 2017.

After a decrease in steel demand in 2016, Colombia's steel market started to recover in 2017 supported by a rebound in construction and oil & gas activity, and continued expansion of the manufacturing businesses. In the United States, apparent demand for finished steel rebounded in 2017, showing a 6.4% year-over-year growth, on improved manufacturing activity and healthier economic performance. Ternium's shipments of finished steel products in the country (excluding slab shipments to the Calvert facility) increased in 2017, with shipments focused on the aesthetically demanding non-residential construction market, mainly for commercial and industrial buildings.

Operating income in 2017 was \$1.5 billion, a \$315.1 million increase compared to operating income in 2016. This increase was due to higher steel segment operating income, with an increase in steel shipments partially offset by a decrease in steel operating margin, and higher mining segment operating income. Steel shipments were 1.8 million tons higher compared to 2016, reflecting a 1.4 million-ton increase in Other Markets, mainly as a result of the consolidation of Ternium Brasil's shipments, a 235,000-ton increase in the Southern Region and a 218,000-ton increase in Mexico. Steel revenue per ton increased year-over-year in Mexico and the Southern Region, and it decreased in Other Markets, mainly due to the consolidation of Ternium Brasil slab sales. In addition, operating cost per ton, which equals cost of sales plus selling, general and administrative expenses (SG&A), divided by shipments, increased as a result of higher raw material and purchased slab costs, partially offset by the consolidation of Ternium Brasil.

Net income in 2017 was \$1.0 billion, compared to net income of \$706.9 million in 2016. The \$316.0 million increase in the year-over-year comparison was mainly due to the above-mentioned higher operating income, a lower effective tax rate and higher results from the equity in earnings of Usiminas (not consolidated), partially offset by higher net financial expenses. The effective tax rate was affected by the non-cash effect on deferred taxes of the fluctuation of the Mexican peso against the U.S. dollar, with an appreciation of 5% in 2017 and depreciation of 17% in 2016. Higher net financial expenses included an \$85.8 million negative year-over-year difference in net foreign exchange results mainly related to the effect of the fluctuations of the Mexican peso and the Argentine peso against the U.S. dollar on a net short local currency position in Ternium's Mexican subsidiaries and a net short U.S. dollar position in Ternium's Argentine subsidiary.

#### Net Sales



Net sales in 2017 were \$9.7 billion, 34% higher than net sales in 2016. The following table outlines Ternium's consolidated net sales for 2017 and 2016:

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	Net sales (in millions of U.S. dollars)			Dif.	
	2017	2016			
Mexico	5,378.6	4,477.6	20	%	
Southern Region	2,313.6	1,865.9	24	%	
Other Markets	1,699.0	864.4	97	%	
Total steel products consolidated net sales	9,391.2	7,208.0	30	%	
Other products <sup>(1)</sup>	309.1	13.8	2,140	%	
Total steel segment net sales	9,700.3	7,221.8	34	%	
Total mining segment net sales	271.5	204.9	33	%	
Intersegment eliminations	(271.4 )	(202.7 )			
Total consolidated net sales	9,700.3	7,224.0	34	%	

<sup>(1)</sup> The item "Other products" primarily includes Ternium Brasil's and Ternium Mexico's electricity sales.

#### Cost of sales

Cost of sales was \$7.4 billion in 2017, an increase of \$2.0 billion compared to 2016. This was principally due to a \$1.8 billion, or 47%, increase in raw material and consumables used, mainly reflecting a 19% increase in steel shipments volume and higher purchased slab, iron ore, coking coal, scrap, zinc and energy costs, and to an \$204.6 million increase in other costs, mainly including a \$113.3 million increase in labor cost, a \$33.8 million increase in depreciation of property, plant and equipment, a \$33.3 million increase in services and fees, and a \$22.8 million increase in maintenance expenses. The consolidation of Ternium Brasil in 2017 affected all of the above-mentioned components of the cost of sales, as well as the selling, general and administrative expenses.

#### Selling, general and administrative expenses

SG&A expenses in 2017 were \$824.2 million, or 8.5% of net sales, an increase of \$136.3 million compared to SG&A expenses in 2016 of \$687.9 million, or 9.5% of net sales, mainly due to higher amortization of intangible assets, labor costs, freight and transportation, services and fees expenses, and taxes and contributions (other than income tax).

#### Other net operating expense

Other net operating expense in 2017 was a \$16.2 million, compared to \$9.9 million in 2016. Other net operating expense in 2017 included a \$15.9 million donation related to the Roberto Rocca technical school in Pesquería, Nuevo León, Mexico.

#### Operating income

Operating income in 2017 was \$1.5 billion, or 15% of net sales, compared to operating income of \$1.1 billion, or 15.8% of net sales, in 2016.

The following table outlines Ternium's operating income by segment for 2017 and 2016.

In millions of U.S. dollars	Steel segment		Mining segment		Intersegment eliminations		Total	
	2017	2016	2017	2016	2017	2016	2017	2016
Net Sales	9,700.3	7,221.8	271.5	204.9	(271.4)	(202.7)	9,700.3	7,224.0
Cost of sales	(7,465.8)	(5,391.0)	(212.9)	(192.0)	275.6	198.7	(7,403.0)	(5,384.4)
SG&A expenses	(811.5 )	(677.0 )	(12.8 )	(10.9 )	—	—	(824.2 )	(687.9 )
Other operating income, net	(17.0 )	(9.5 )	0.8	(0.4 )	—	—	(16.2 )	(9.9 )
Operating income (loss)	1,406.0	1,144.2	46.6	1.5	4.1	(4.0 )	1,456.8	1,141.7



## Steel reporting segment

The steel segment's operating income was \$1.4 billion in 2017, an increase of \$261.8 million compared to the operating income in 2016, reflecting higher net sales, partially offset by higher operating cost.

Net sales of steel products in 2017 increased 34% compared to net sales in 2016, reflecting a 1.8 million-ton increase in shipments and a \$72 increase in steel revenue per ton. Shipments and prices increased year-over-year in Mexico and the Southern Region. In Other Markets, shipments increased and revenue per ton decreased, despite higher prices, due to the consolidation of Ternium Brasil.

	Net Sales (million U.S. dollars)			Shipments (thousands of tons)			Revenue/ton (\$/ton)		
	2017	2016	Dif. %	2017	2016	Dif. %	2017	2016	Dif. %
Mexico	5,378.6	4,477.6	20 %	6,622.8	6,405.2	3 %	812	699	16 %
Southern Region	2,313.6	1,865.9	24 %	2,456.0	2,220.8	11 %	942	840	12 %
Other Markets	1,699.0	864.4	97 %	2,517.7	1,138.1	121 %	675	760	-11 %
Total steel products	9,391.2	7,208.0	30 %	11,596.6	9,764.0	19 %	810	738	10 %
Other products <sup>(1)</sup>	309.1	13.8	2,140 %						
Total steel segment	9,700.3	7,221.8	34 %						

<sup>(1)</sup> The item "Other products" primarily includes Ternium Brasil's and Ternium Mexico's electricity sales.

Operating cost increased 36% due to the above-mentioned 19% increase in shipment volumes and a 15% increase in operating cost per ton. The increase in operating cost per ton was mainly due to higher purchased slab, raw material, energy and labor costs.

## Mining reporting segment

The mining segment's operating income was a gain of \$46.6 million in 2017, compared to a gain of \$1.5 million in 2016, reflecting higher iron ore sales, partially offset by higher operating cost.

Net sales of mining products in 2017 were 32% higher than those in 2016, reflecting 23% higher revenue per ton and 7% higher shipments.

	Mining segment		
	2017	2016	Dif. %
Net Sales (million of U.S. dollars)	271.5	204.9	33 %
Shipments (thousands of tons)	3,551.1	3,309.6	7 %
Revenue per ton (\$/ton)	76	62	23 %

Operating cost increased 11% year-over-year mainly due to the above-mentioned 7% increase in shipment volumes and a 4% increase in operating cost per ton.

## Net financial results

Net financial results were a \$165.1 million loss in 2017, compared to a \$37.9 million loss in 2016. During 2017, Ternium's net financial interest results totaled a loss of \$95.2 million, compared with a \$75.8 million loss in 2016. Net foreign exchange results were a loss of \$65.5 million in 2017 compared to a gain of \$20.3 million in 2016. The year-over-year difference in net foreign exchange results of \$85.8 million was mainly related to the effect of the fluctuations of the Mexican peso against the U.S. dollar on a net short local currency position in Ternium's Mexican subsidiaries. In 2017, the Mexican peso appreciated 5% against the U.S. dollar, compared to a 17% depreciation in 2016. Change in fair value of financial instruments included in net financial results was a \$3.1 million gain in 2017 compared to a \$19.3 million gain in 2016.



## Equity in results of non-consolidated companies

Equity in results of non-consolidated companies was a gain of \$68.1 million in 2017, compared to a gain of \$14.6 million in 2016, mainly due to better results from Ternium's investment in Usiminas.

## Income tax expense

Income tax expense in 2017 was \$336.9 million, or 25% of income before income tax, compared to an income tax expense of \$411.5 million, or 37% of income before income tax in 2016. The effective tax rate in 2017 included a non-cash gain on deferred taxes due to the 5% appreciation of the Mexican peso against the U.S. dollar during the year. The effective tax rate in 2016 included a non-cash charge on deferred taxes due to the 17% depreciation of the Mexican peso against the U.S. dollar during that year.

## Net income attributable to non-controlling interests

Net gain attributable to non-controlling interest in 2017 was \$136.7 million, compared to a net gain of \$111.3 million in 2016.

## Foreign Currency Fluctuations

For information related to this matter, see Item 11. "Quantitative and Qualitative Disclosures About Market Risk—Foreign Exchange Exposure Risk."

## Governmental Economic, Fiscal, Monetary or Political Policies or Factors

For information related to this matter, see Item 3. "Key Information—D. Risk Factors—Risks Relating to the Countries in Which We Operate."

## B. Liquidity and Capital Resources

We obtain funds from our operations, as well as from short-term and long-term borrowings from financial institutions. These funds are primarily used to finance our working capital and capital expenditures requirements, as well as our acquisitions and dividend payments (for further information on capital expenditures, see Item 4. "Information on the Company—B. Business Overview—Capital Expenditure Program"). We hold money market investments, time deposits and variable-rate or fixed-rate securities. Our gross financial indebtedness increased in the 2017-2018 period, from \$1.2 billion at the end of 2016 to \$2.0 billion at the end of 2018. In the third quarter 2017 we acquired Ternium Brasil for a total consideration of \$1.9 billion. For further information on the Ternium Brasil transactions, see note 3 to our consolidated financial statements included elsewhere in this annual report.

The following table shows the changes in our cash and cash equivalents for each of the periods indicated below:

In thousands of U.S. dollars	For the year ended December 31,		
	2018	2017	2016
Net cash provided by operating activities	1,739,265	383,859	1,099,595
Net cash used in investing activities	(457,012 )	(2,029,958)	(554,670 )
Net cash (used in) provided by financing activities	(1,322,272)	1,802,256	(508,699 )
(Decrease) increase in cash and cash equivalents	(40,019 )	156,157	36,226
Effect of exchange rate changes	(47,219 )	(1,841 )	(4,254 )
Cash and cash equivalents at the beginning of the year	337,779	183,463	151,491
Cash and cash equivalents at the end of the year <sup>(1)</sup>	250,541	337,779	183,463

In addition to cash and cash equivalents, at December 31, 2018, 2017 and 2016, Ternium had \$51.5, \$135.9 and (1)\$150.9 million of other current investments with maturities of more than three months, respectively, and \$2.2, \$0.1 and \$0.1 million in restricted cash, respectively.

Changes in cash and cash equivalents between December 31, 2017 and December 31, 2018

Overview

During 2018, Ternium's primary source of funding was cash provided by operating activities. Cash and cash equivalents as of December 31, 2018 was \$250.5 million, an \$87.2 million decrease from \$337.8 million at the end of the previous year. The decrease was mainly attributable to net cash used in financing activities of \$1.3 billion and net cash used in investing activities of \$457.0 million, partially offset by net cash provided by operating activities of \$1.7 billion.

In addition to cash and cash equivalents, as of December 31, 2018, we held other investments with maturity of more than three months for a total amount of \$51.5 million, decreasing \$84.4 million compared to December 31, 2017.

Operating activities

Net cash provided by operating activities in 2018 was \$1.7 billion. Working capital increased by \$228.6 million in 2018 as a result of a \$186.4 million increase in inventories and an aggregate \$114.7 million net increase in trade and other receivables, partially offset by an aggregate \$72.6 million increase in accounts payable and other liabilities. The inventory value increase in 2018 was mainly due to \$159.5 million higher volume and price of raw materials, supplies and other; and net \$90.5 million higher costs of slabs, goods in process and finished goods principally as a result of the pass-through of higher purchased slab, scrap, coal and iron ore prices; partially offset by \$63.6 million net lower steel volume.

	Change in inventory Dec'18 / Dec'17 (in millions of U.S. dollars)		
	Price	Volume	Total
Finished steel goods	36.7	16.7	53.5
Steel goods to undergo processing	53.8	(80.3)	(26.6)
<b>Total steel goods</b>	<b>90.5</b>	<b>(63.6)</b>	<b>26.9</b>
Raw materials, supplies and allowances			159.5
<b>Total</b>			<b>186.4</b>

Investing activities

Net cash used in investing activities in 2018 was \$457.0 million, primarily attributable to capital expenditures of \$520.3 million and loans to non-consolidated company Techgen for a net amount of \$24.5 million, partially offset by a decrease in other investments. The main investments carried out during 2018 included those made for new hot-rolling, hot-dipped galvanizing and painting production lines in the company's Pesquería industrial center, improvement of environmental and safety conditions at certain facilities, the upgrade and expansion of two hot strip mills, the expansion of connectivity and equipment automation, and those made in Peña Colorada's iron ore operations. For further information on capital expenditures, see Item 4. "Information on the Company—B. Business Overview—Capital Expenditure Program".

Financing activities

Net cash used in financing activities was \$1.3 billion in 2018, primarily attributable to net repayment of borrowings of \$1.1 billion and total dividend payments of \$236.8 million (\$215.9 million to the Company's shareholders and \$20.9 million to non-controlling interest).

Changes in cash and cash equivalents between December 31, 2016 and December 31, 2017

Overview

During 2017, Ternium's primary source of funding was cash provided by financing activities and operating activities. Cash and cash equivalents as of December 31, 2017 was \$337.8 million, a \$154.3 million increase from \$183.5

million at the end of the previous year. The increase was mainly attributable to net cash provided by financing activities of \$1.8 billion and net cash provided by operating activities of \$383.9 million, partially offset by net cash used in investing activities of \$2.0 billion.



In addition to cash and cash equivalents, as of December 31, 2017, we held other investments with maturity of more than three months for a total amount of \$135.9 million, decreasing \$15.0 million compared to December 31, 2016.

#### Operating activities

Net cash provided by operating activities in 2017 was \$383.9 million. Working capital increased by \$865.0 million in 2017, as a result of a \$540.2 million increase in inventories and an aggregate \$411.4 million increase in trade and other receivables, partially offset by an aggregate \$86.6 million increase in accounts payable and other liabilities. The inventory value increase in 2017 was mainly due to \$258.2 million higher costs of slabs, goods in process and finished goods principally as a result of the pass-through of higher purchased slab, scrap, coal and iron ore prices; \$129.1 million higher steel volume, mainly reflecting increased operating rates in all of Ternium's facilities; and \$152.9 million higher price and volume of raw materials, supplies and other items.

	Change in inventory Dec'17 / Dec'16 (in millions of U.S. dollars)		
	Price	Volume	Total
Finished steel goods	44.8	30.0	74.8
Steel goods to undergo processing	213.4	99.1	312.5
<b>Total steel goods</b>	<b>258.2</b>	<b>129.1</b>	<b>387.3</b>
Raw materials, supplies and allowances			152.9
<b>Total</b>			<b>540.2</b>

The increase in trade and other receivables in 2017 reflected mostly higher prices and shipments in Ternium's main steel markets. In addition, Ternium made income tax payments in excess of income tax accruals for an aggregate \$273.4 million in 2017, as the payment in the second quarter 2017 of the balance of income tax for fiscal 2016 reflected a substantial increase in net income in 2016 compared to 2015.

#### Investing activities

Net cash used in investing activities in 2017 was \$2.0 billion, primarily attributable to a net cash use of \$1.6 billion in connection with the acquisition of Ternium Brasil and related transactions, and capital expenditures of \$409.4 million. For further information on capital expenditures, see Item 4. "Information on the Company—B. Business Overview—Capital Expenditure Program".

#### Financing activities

Net cash provided by financing activities was \$1.8 billion in 2017, primarily attributable to net proceeds from borrowings of \$2.0 billion, partially offset by total dividend payments of \$226.9 million (\$196.3 million to the Company's shareholders and \$30.6 million to non-controlling interest).

#### Changes in cash and cash equivalents between December 31, 2015 and December 31, 2016

##### Overview

During 2016, Ternium's primary source of funding was cash provided by operating activities. Cash and cash equivalents as of December 31, 2016 was \$183.5 million, a \$32.0 million increase from \$151.5 million at the end of the previous year. The increase was mainly attributable to net cash provided by operating activities of \$1.1 billion, partially offset by net cash used in investing activities of \$554.7 million and net cash used in financing activities of \$508.7 million.

In addition to cash and cash equivalents, as of December 31, 2016, we held other investments with maturity of more than three months for a total amount of \$150.9 million, decreasing \$86.3 million as compared to December 31, 2015.

#### Operating activities

Net cash provided by operating activities was \$1.1 billion in 2016, lower than the \$1.3 billion recorded in 2015. Working capital increased \$162.4 million in 2016 and decreased \$509.1 million in 2015. The increase in working

capital during 2016 was the result of an aggregate \$149.7 million increase in trade and other receivables and a \$114.7 million increase in inventories, partially offset by an aggregate \$102.0 million increase in accounts payable and other liabilities. Inventories increased as shown in the table below:

	Change in inventory Dec'16 / Dec'15 (in millions of U.S. dollars)		
	Price	Volume	Total
Finished steel goods	16.6	10.5	27.1
Steel goods to undergo processing	50.8	(40.7)	10.1
Total steel goods	67.4	(30.2)	37.2
Raw materials, supplies and allowances			77.5
Total			114.7

#### Investing activities

Net cash used in investing activities in 2016 was \$554.7 million, primarily attributable to the following:

- capital expenditures of \$435.5 million;
- contribution to Usiminas, in connection with its capital increase process, totaling \$114.4 million; and
- loans granted to Techgen totaling \$92.5 million; partially offset by \$86.3 million decrease in other investments.

#### Financing activities

Net cash used in financing activities was \$508.7 million in 2016, primarily attributable to the following:

- net repayments of borrowings of \$281.2 million in 2016; and
- total dividend payments of \$227.5 million (\$176.7 million to the Company's shareholders and \$50.8 million to non-controlling interest).

#### Principal Sources of Funding

##### Funding Policies

Management's policy is to maintain a high degree of flexibility in operating and investment activities by maintaining adequate liquidity levels and ensuring access to readily available sources of financing. We obtain financing primarily in U.S. dollars, Argentine pesos and Colombian pesos. Whenever feasible, management bases its financing decisions, including the election of currency, term and type of the facility, on the intended use of proceeds for the proposed financing and on costs. For information on our financial risk management, please see note 29 to our consolidated financial statements included elsewhere in this annual report.

Ternium has in place non-committed credit facilities and management believes it has adequate access to the credit markets. Considering this fact and the funds provided by operating activities, management believes that we have sufficient resources to satisfy our current working capital needs, service our debt and pay dividends. Management also believes that our liquidity and capital resources give us adequate flexibility to manage our planned capital spending programs, afford any possible new acquisition and address short-term changes in business conditions.

#### Financial Liabilities

Our financial liabilities consist mainly of loans with financial institutions. As of December 31, 2018, these facilities were mainly denominated in U.S. dollars (98.7% of total financial liabilities). Total financial debt (inclusive of principal and interest accrued thereon) decreased by \$1.2 billion in the year, from \$3.2 billion as of December 31, 2017, to \$2.0 billion as of December 31, 2018, mainly reflecting net repayments of short-term borrowings and the prepayment of long-term debt incurred in connection with the acquisition of CSA and related transactions. As of



December 2018, current borrowings were 19.6% of total borrowings, none of which corresponded to borrowings with related parties.

The following table shows Ternium's financial liabilities as of December 31 of each of the last three years:

In thousands of U.S. dollars	2018	2017	2016
Bank borrowings <sup>(1)</sup>	2,036,957	3,221,907	1,218,635

Total borrowings	2,036,957	3,221,907	1,218,635
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(1) Net of debt issuance costs.

The weighted-average interest rates at December 31, each year of the last three years shown below were calculated using the rates set for each instrument in its corresponding currency and weighted using the U.S. dollar-equivalent outstanding principal amount of those instruments at December 31, each year, respectively. Such rates do not include the effect of derivative financial instruments, nor fluctuations in the exchange rate between the instrument's currencies and the U.S. dollar.

	2018	2017	2016
Bank borrowings	3.65%	4.76%	6.92%

Ternium's weighted average interest rate for 2018 was 3.7%, a decrease compared to the 4.8% average interest rate in 2017. The year-over-year decrease in average interest rates was due mainly to lower participation of Argentine peso denominated debt in the currency mix, as nominal interest rates in Argentina reflect high local inflation rates.

As of December 31, 2018, the maturities of our financial liabilities were as follows:

In thousands of U.S. dollars	1 year	1 – 2	2 – 3	3 – 4	4 – 5	Over 5	
At December 31, 2018	Or less	Years	Years	Years	Years	Years	Total
Borrowings <sup>(1)(2)</sup>	399,856	528,073	509,157	510,257	61,571	28,042	2,036,957

(1) Borrowings are bank borrowings with third parties.

(2) Net of debt issuance costs.

For information on our derivative financial instruments, see Item 11. "Quantitative and Qualitative Disclosures about Market Risk" and note 22 to our consolidated financial statements included elsewhere in this annual report.

#### Most Significant Borrowings

Our most significant borrowings as of December 31, 2018, were those outstanding under Ternium Investments S.à.r.l.'s (Ternium Investments) 2017 syndicated loan facility to finance the acquisition of Ternium Brasil and related transactions, Ternium Mexico's 2018 syndicated loan facility and Tenigal's 2012 syndicated loan facility.

In Millions of U.S. dollars

Date	Borrower	Type	Principal amount		Maturity
			Original	Outstanding as of December 31, 2018	
2012/2013	Tenigal	Syndicated loan	200	100	July 2022
September 2017	Ternium Investments	Syndicated loan	1,500	1,125	September 2022
June 2018	Ternium Mexico	Syndicated loan	1,000 <sup>(1)</sup>	400	June 2023

(1) From the original principal amount of \$1.0 billion, \$400 million were disbursed as of December 31, 2018. The remainder \$600 million are available to be drawn until June 2019.

The main covenants in our syndicated loan agreements are limitations on liens and encumbrances, limitations on



the sale of certain assets and compliance with financial ratios (e.g., leverage ratio). As of December 31, 2018, we were in compliance with all covenants under our loan agreements.

For further information on our derivative financial instruments, financial leases, borrowings and financial risk management please see notes 22, 23, 24 and 29 to our consolidated financial statements included elsewhere in this annual report.

For information on Ternium's capital expenditures, see Item 4. "Information on the Company—B. Business Overview—Capital Expenditure Program."

C. Research and Development, Patents and Licenses, Etc.

For information related to this matter, see Item 4. "Information on the Company—B. Business Overview—Research and Development; Product Development."

D. Trend Information

For information related to this matter, see "—Overview."

E. Off-Balance Sheet Arrangements

As of year-end 2018, the Company reported the following financial commitments, consisting of guarantees relating to its participation in the non-consolidated company Techgen:

The Company issued a corporate guarantee covering 48% of the obligations of Techgen under a syndicated loan agreement between Techgen and several banks, which was used in the construction of the facility. The main covenants under the corporate guarantee were Ternium's commitment to maintain its participation in Techgen or the right to purchase at least 78% of Techgen's firm energy, and compliance with a maximum permitted leverage ratio. As of December 31, 2018, the amount outstanding under the loan agreement was \$600 million and, as a result, the amount guaranteed by Ternium was approximately \$288 million. For a description of the refinancing of the syndicated loan agreement, the release of the Company's corporate guarantee and the stand-by letters of credit supporting certain covenants under the new facility, see "—G. Recent Developments—Techgen refinancing" and note 30 to our consolidated financial statements included elsewhere in this annual report.

A corporate guarantee covering 48% of the outstanding value of transportation capacity agreements entered into by Techgen with Kinder Morgan Gas Natural de Mexico, S. de R.L. de C.V., Kinder Morgan Texas Pipeline LLC and Kinder Morgan Tejas Pipeline LLC for a natural gas transportation capacity of 150,000 million BTU per day starting on August 1, 2016 and ending on July 31, 2036. As of December 31, 2018, our exposure under the guarantee in connection with these agreements amounts to \$120 million, corresponding to 48% of the outstanding value of the agreements as of December 31, 2018.

In addition, Ternium Mexico issued a guarantee letter covering up to approximately \$61 million of the obligations of Techgen, under the Clean Energy Certificates trading agreement between Techgen and subsidiaries of Enel Rinnovabile S.A. de C.V., or ENEL. The amount of the guarantee is equal to 78% of the amount payable by Techgen if Techgen decides to terminate the agreement prior to the expiration date (and therefore decreases as the term of the contract passes). The trading agreement was signed on May 25, 2018 and terminates on June 30, 2041, and the guarantee was signed on December 11, 2018.

Ternium Mexico also issued a guarantee letter covering up to approximately \$25 million of the obligations of GIMSA, under the natural gas trading agreement between GIMSA and BP Energía México. The credit line granted by BP Energía México in connection with this natural gas trading agreement amounted to approximately \$25 million. As of December 31, 2018, the outstanding amount under the natural gas trading agreement was \$17 million.

In addition, as described below, Ternium has various off-balance sheet commitments to purchase raw materials, energy (natural gas, electricity and steam for the production of electricity), supplies (air, oxygen, nitrogen and argon), production equipment and logistic services. Off-balance sheet commitments are discussed in note 25 (ii) to our consolidated financial statements included elsewhere in this annual report.

F. Contractual Obligations

The following table summarizes our contractual obligations at December 31, 2018, and the effect such obligations are expected to have on our liquidity and cash flow in future periods:





In millions of U.S. dollars	Payments Due by Period as of December 31, 2018				
	Total	Less than 1 Year	1-3 Years	3-5 Years	After 5 Years
Contractual Obligations					
Borrowings (1)	2,037.0	399.9	1,037.2	571.8	28.0
Estimated interest payments (2)	179.0	70.3	89.7	18.4	0.6
Purchase obligations (3)	1,578.5	422.5	693.5	155.0	307.5
Labor-related obligations (4)	400.6	48.6	55.7	59.2	237.1
<b>Total Contractual Obligations</b>	<b>4,195.1</b>	<b>941.3</b>	<b>1,876.1</b>	<b>804.4</b>	<b>573.2</b>

(1) Borrowings are bank borrowings with third parties. For further information, see “—B. Liquidity and Capital Resources—Principal Sources of Funding.”

(2) In calculating estimated interest payments for our borrowings that bear interest at a floating rate, we use the variable rates in effect in the current interest period, and assume that such rate is fixed over the period(s) measured.

(3) Purchase obligations include mainly raw materials, energy (natural gas, electricity and steam for the production of electricity), supplies (air, oxygen, nitrogen and argon), production equipment and logistic services. For further information see note 25(ii) to our consolidated financial statements included elsewhere in this annual report.

(4) Labor-related obligations include post-employment and other employee benefits, asset retirement obligations and termination benefits. For further information see note 21(i) and (ii) to our consolidated financial statements included elsewhere in this annual report.

#### G. Recent Developments

##### Techgen refinancing

Ternium had previously issued a corporate guarantee covering 48% of the obligations of Techgen under a syndicated loan agreement between Techgen and several banks, which was used in the construction of the facility. On February 13, 2019, Techgen entered into a \$640 million loan agreement with several banks to refinance its obligations under its existing syndicated loan. The proceeds of the new loan were used to repay all loans outstanding under the existing facility and, accordingly, Ternium’s corporate guarantee thereunder has been released.

Techgen’s obligations under the new facility, which is non-recourse on the sponsors, are guaranteed by a Mexican security trust covering Techgen’s shares, assets and accounts as well as Techgen’s affiliates rights under certain contracts. In addition, Techgen’s collection and payment accounts not subject to the trust have been pledged in favor of the lenders under the new loan agreement, and certain direct agreements (customary for these type of transactions) have been entered into with third parties and affiliates, including in connection with the agreements for the sale of energy produced by the project and the agreements for the provision of gas and long-term maintenance services to Techgen. The commercial terms and conditions governing the purchase, by the Company’s Mexican subsidiaries, of the energy generated by the project remain unchanged.

Under the loan agreement, Techgen is committed to maintain a debt service reserve account covering debt service becoming due during two consecutive quarters; such account is funded by stand-by letters of credit issued for the account of Techgen’s sponsors in proportion to their respective participations in Techgen. Accordingly, the Company and its Luxembourg subsidiary Ternium Investments applied for stand-by letters of credit covering 48% of the debt service coverage ratio, which as of the date hereof amounts to \$21.4 million.

##### Annual Dividend Proposal

On February 19, 2019, the Company’s board of directors proposed that an annual dividend of \$0.12 per share (\$1.20 per ADS), or approximately \$235.6 million in the aggregate, be approved at the Company’s annual general shareholders’ meeting, which is scheduled to be held on May 6, 2019. If the annual dividend is approved, it will be paid on May 14, 2019. Ternium’s dividend payments have been growing over the years, starting from \$0.50 per ADS

in 2006, the year of the initial public offering and listing.

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Item 6. Directors, Senior Management and Employees

A. Directors and Senior Management

Board of Directors

The Company's articles of association provide for a board of directors consisting of a minimum of 5 members (when the shares of the Company are listed on a regulated market, as they currently are) and a maximum of 15. The board of directors is vested with the broadest powers to act on behalf of the Company and accomplish or authorize all acts and transactions of management and disposition that are within its corporate purpose and are not specifically reserved in the articles of association or by applicable law to the general shareholders' meeting.

The board of directors is required to meet as often as required by the interests of the Company and at least four times per year. In 2018, the Company's board of directors met nine times. A majority of the members of the board of directors in office present or represented at each board of directors meeting constitutes a quorum, and resolutions may be adopted by the vote of a majority of the directors present or represented. In case of a tie, the chairman is entitled to cast the deciding vote.

Directors are elected at the annual ordinary general shareholders' meeting to serve one-year renewable terms, as determined by the general shareholders' meeting. The general shareholders' meeting may dismiss all or any one member of the board of directors at any time, with or without cause, by resolution passed by a simple majority vote. The Company's current board of directors is composed of eight directors, three of whom are independent directors. On January 9, 2006, Tenaris and a wholly owned subsidiary of San Faustin entered into a shareholders' agreement, pursuant to which the San Faustin subsidiary is required to take all actions in its power to cause one of the members of the Company's board of directors to be nominated by Tenaris and any directors nominated by Tenaris to be removed only pursuant to written instructions by Tenaris. Tenaris and the San Faustin subsidiary also agreed to cause any vacancies on the board of directors to be filled with new directors nominated by either Tenaris or the San Faustin subsidiary, as applicable. On April 27, 2007, the San Faustin subsidiary assigned all of its rights and obligations under the shareholders' agreement to Techint. The shareholders' agreement will remain in effect so long as each of the parties holds at least 5% of the shares of the Company or until it is terminated by either Tenaris or Techint pursuant to its terms. Carlos A. Condorelli was nominated by Tenaris and appointed as a director pursuant to this agreement.

Within the limits of applicable law, the board of directors of the Company may appoint any or all members of the board of directors as the Company's attorney-in-fact, delegating to such director or directors any management powers to the extent the board of directors may deem appropriate. In addition, the board of directors may delegate to one or more persons, whether or not members of the board of directors, the Company's day-to-day management and the authority to represent the Company, provided that such delegation shall be subject to prior authorization by the general shareholders' meeting. On May 2, 2018, with the requisite authorization at the general shareholders' meeting held on May 2, 2018, the board of directors delegated such day-to-day management and authority to the chief executive officer of the Company. On May 2, 2018, the Company's annual general shareholders' meeting re-elected Ubaldo José Aguirre, Roberto Bonatti, Carlos Alberto Condorelli, Vincent Robert Gilles Decalf, Adrián Lajous Vargas, Daniel Agustín Novegil, Gianfelice Mario Rocca and Paolo Rocca as members of the board of directors to serve until the next annual shareholders' meeting. The board of directors subsequently reappointed Paolo Rocca as its chairman, Daniel Novegil as its vice-chairman and Máximo Vedoya as chief executive officer of the Company. The following table sets forth the current members of the board of directors of the Company, their respective offices on the board, their principal occupation, their years of service as board members and their age. At the next annual general shareholders' meeting, it will be proposed that all of the current members of the board of directors be reappointed, each to hold office until the next annual general shareholders' meeting that will be convened to decide on the Company's 2019 annual accounts.

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Name	Position	Principal Occupation	Years as Director	Age at December 31, 2018
Paolo Rocca <sup>(1)</sup>	Chairman	Chairman and CEO of Tenaris, director and vice president of San Faustin	14	66
Daniel Agustín Novegil	Vice Chairman	Vice Chairman of Ternium	14	66
Ubaldo José Aguirre	Director	Managing director of Aguirre y Gonzalez S.A.	13	70
Roberto Bonatti <sup>(1)</sup>	Director	President of San Faustin	14	69
Carlos Alberto Condorelli	Director	Director of Tenaris and Ternium	13	67
Vincent Robert Gilles Decalf	Director	Independent Director	3	56
Adrián Lajous Vargas	Director	President of Petrométrica, S.C.	13	75
Gianfelice Mario Rocca <sup>(1)</sup>	Director	Chairman of the board of directors of San Faustin, director of Tenaris, president of Humanitas Group and president of the board of directors of Tenova	13	70

(1) Paolo Rocca and Gianfelice Rocca are brothers, and Roberto Bonatti is Paolo and Gianfelice Rocca's first cousin.

**Paolo Rocca.** Mr. Rocca is the chairman of the Company's board of directors. He is a grandson of Agostino Rocca, founder of the Techint Group, a group of companies controlled by San Faustin. He is also the chairman of the board of directors and chief executive officer of Tenaris, a director and vice president of San Faustin, and a director of Techint Financial Corporation. He is a member of the Executive Committee of worldsteel. Mr. Rocca is an Italian citizen.

**Ubaldo José Aguirre.** Mr. Aguirre has served on the board of directors since 2006. He is a managing director of Aguirre y Gonzalez S.A., an Argentine financial services firm, and serves as chairman of the board of directors and as a member of the audit committee of Holcim Argentina S.A., a subsidiary of Lafarge Holcim Group, the Swiss cement producer. Since 2005, he also serves as chairman of the board of directors of Permasur S.A., an Argentine winery, and of Editorial Sur S.A. He is a member of the Administrative Board of Universidad Católica Argentina and President of Rotary Club of Buenos Aires. Mr. Aguirre formerly served as director and chairman of the audit committee of Ternium Argentina. Mr. Aguirre began his career at the World Bank in Washington, D.C. In addition, Mr. Aguirre has been a member of the boards of each of Argentina's central bank—where he was responsible for that country's external borrowing program and financial negotiations—, Banco de la Nación Argentina and Banco Nacional de Desarrollo. He also served as the Republic of Argentina's financial representative for Europe in Geneva and as negotiator on behalf of the Republic of Argentina with the Paris Club. Mr. Aguirre is an Argentine citizen.

**Roberto Bonatti.** Mr. Bonatti is a member of the Company's board of directors. He is a grandson of Agostino Rocca. Throughout his career in the Techint Group he has been involved specifically in the engineering and construction and corporate sectors. He was first employed by the Techint Group in 1976, as deputy resident engineer in Venezuela. In 1984, he became a director of San Faustin and, since 2001, he has served as its president. In addition, Mr. Bonatti currently serves as president of Techint Financial Corporation. He is also a member of the board of directors of Tenaris. Mr. Bonatti is an Italian citizen.

**Carlos Alberto Condorelli.** Mr. Condorelli is a member of the Company's board of directors. He is also a member of the board of directors of Tenaris. He has held several positions within Tenaris, including the chief financial officer position from October 2002 to September 2007, and the chief financial officer position in some of the principal Tenaris group companies and member of its audit committee from November 1, 2017 to May 2, 2018. He has also served as president of the board of directors of Empresa Distribuidora La Plata S.A., an Argentine utilities company. Mr. Condorelli is an Argentine citizen.

Vincent Robert Gilles Decalf. Mr. Decalf has served as a director of the Company since September 2015. He is also a non-executive director of Covea Lux S.A., Wealins S.A. and other private Luxembourg companies. He is also a member of the board of directors and management committee of the Luxembourg Institute for Directors and Managers (Institut Luxembourgeois des Administrateurs). Mr. Decalf is a certified independent director since 2014. From 1989 to 2008, Mr. Decalf held various executive positions within Société Générale and has extensive experience in the financial industry. Mr. Decalf is a French citizen.

Mr. Adrian Lajous. Mr. Lajous has served as a director of the Company since 2006. Mr. Lajous currently serves as a fellow in the Center for Global Energy Policy at Columbia University, president of Petrométrica, S.C. and a non-executive director of Técnicas Reunidas, S.A. Mr. Lajous began his career teaching economics at El Colegio de

México and in 1977 was appointed director general for energy at Mexico's Ministry of Energy. Mr. Lajous joined Pemex in 1983, where he held a succession of key executive positions including executive coordinator for international trade, corporate director of planning, corporate director of operations and director of refining and marketing. From 1994 until 1999, he served as chief executive officer of Pemex and chairman of the boards of the Pemex Group of operating companies. In addition, he served as non-executive director of Schlumberger, Ltd. from 2002 up to 2014, was the chairman of the Oxford Institute for Energy Studies for 13 years and served on the board of directors of Trinity Industries for more than 10 years. Mr. Lajous is a Mexican citizen.

Daniel Agustín Novegil. Mr. Novegil currently serves as director and vice chairman of the board of directors. He served as chief executive officer of the Company from 2005 to 2018. With almost 40 years of experience in the steelmaking industry, he was appointed managing director of Ternium Argentina in 1993 and was a member of the board of directors of Usiminas from 2013 until 2015. He is also member of the board of directors of worldsteel and former president of Alacero (Latin American steel association). Since 1999, he has been a member of the advisory board of the Sloan Masters Program at Stanford University. Mr. Novegil is an Argentine citizen.

Gianfelice Mario Rocca. Mr. Rocca is a member of the Company's board of directors. He is a grandson of Agostino Rocca. He is chairman of the board of directors of San Faustin, a member of the board of directors of Tenaris, president of the Humanitas Group and president of the board of directors of Tenova. Moreover, in Italy, he is member of the Board of Directors of Bocconi University and member of the Advisory Board of Politecnico di Milano. At an international level, he is member of Harvard Business School Advisory Board. Mr. Rocca is an Italian citizen.

#### Director Liability

Each director must act in the interest of the Company, and in accordance with applicable laws, regulations, and the Company's articles of association. Directors are also bound by a general duty of care owed to the Company.

Under Luxembourg law, a director may be liable to the Company for any damage caused by management errors, such as wrongful acts committed during the execution of his or her mandate, and to the Company, its shareholders or other third parties in the event that the Company, its shareholders or such other third parties suffer a loss due to an infringement of either the Luxembourg Company Law or the Company's articles of association provided that the losses are independent and separate from the losses suffered by the Company. A director will be discharged from such joint and several liability only with respect to breaches, provided no misconduct is attributable to such director and such director reports such breaches at the first general meeting after such director first has knowledge thereof.

An action against directors for damages may be initiated by the Company upon a resolution of the shareholders' meeting passed by a simple majority vote, irrespective of the number of shares represented at the meeting. In general, claims must be brought within five years from the occurrence of an action or omission for which liability may apply or, in case the action or omission was fraudulently concealed, from the date of discovery of the relevant action or omission. Causes of action against directors who misappropriate corporate assets or commit a breach of trust may be brought by any shareholder for personal losses different from those of the Company.

An action may also be brought against the directors on behalf of the Company by shareholders who, at the general meeting which decided upon discharge of such directors or members, owned securities with the right to vote at such meeting representing at least ten per cent of the votes attaching to all such securities.

It is customary in Luxembourg that the shareholders expressly discharge the members of the board of directors from any liability arising out of or in connection with the exercise of their mandate when approving the Company's annual accounts at the annual shareholders' meeting. However, such discharge will not release the directors from liability for any damage caused by unrevealed acts of mismanagement or unrevealed breaches of Luxembourg Company Law or the Company's articles of association, nor will it release the directors from liability for any personal loss of the shareholders independent and separate from the losses suffered by the Company due to a breach either revealed and unrevealed of either the Luxembourg Company Law or the Company's articles of association.

Under Luxembourg law, unless the decision of the board of directors relates to ordinary business entered into under normal conditions, any director having a direct or indirect financial interest conflicting with that of the Company in a transaction which has to be considered by the board of directors, must advise the board thereof and cause a record of his statement to be included in the minutes of the meeting. He may not take part in these deliberations. At the next general shareholders' meeting, any transactions in which any of the directors may have had an interest conflicting with

that of the Company's shall be reported before any other resolution is put to vote.

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## Auditors

The Company's articles of association require the appointment of at least one independent auditor chosen from among the members of the Luxembourg Institute of Independent Auditors. Auditors are appointed by the general shareholders' meeting, on the audit committee's recommendation, through a resolution passed by a simple majority vote. Shareholders may determine the number and the term of office of the auditors at the ordinary general shareholders' meeting, provided, however, that an auditor's term shall not exceed one year and that any auditor may be reappointed or dismissed by the general shareholders' meeting at any time, with or without cause. As part of their duties, the auditors report directly to the audit committee.

PwC Luxembourg, an independent registered public audit firm, was appointed as the Company's independent approved statutory auditor for the fiscal year ended December 31, 2018, at the ordinary general shareholders' meeting held on May 2, 2018. At the next annual general shareholders' meeting, it will be proposed that PwC Luxembourg be reappointed as the Company's independent approved statutory auditors for the fiscal year ending December 31, 2019.

## Senior Management

The following table sets forth certain information concerning our senior management:

Name	Age at December 31, 2018	Position
Máximo Vedoya	48	Chief Executive Officer
Pablo Brizzio	48	Chief Financial Officer
César Alejandro Jiménez	53	Ternium Mexico President
Martín Berardi	61	Ternium Argentina President
Marcelo Chara	58	Ternium Brasil President
Héctor Obeso Zunzunegui	54	International Business Unit President
Oscar Montero Martínez	58	Planning and Global Business Development General Director
Pablo Hernán Bassi	56	Engineering, Industrial Coordination and EHS Director
Rubén Herrera	61	Quality and Research & Development Director
Roberto Demidchuk	57	Chief Information Officer
Rodrigo Piña	46	Human Resources Director

Máximo Vedoya. Mr. Vedoya currently serves as our Chief Executive Officer. Prior to that, he served as President of Ternium Mexico. He has held several other executive positions since joining the Techint Group in 1992, such as chief executive officer of Ferrasa, director of Ternium Mexico's international and steel purchase operations, commercial director and export manager of Sidor and commercial planning manager of Ternium Argentina. He was also director of Fedemetal (the Colombian Federation of Metallurgical Industries), AIMM (Venezuelan Association of Metallurgical and Mining Industry) and is currently president of Canacero (Mexican steel association), director of Alacero, vice-president of Caintra (Nuevo León Industrial Chamber), vice-president of CONCAMIN (Mexican Industrial Chamber) and general counsellor of UDEM (University of Monterrey, Mexico). Mr. Vedoya is an Argentine citizen.

Pablo Brizzio. Mr. Brizzio currently serves as our Chief Financial Officer, a position he assumed in 2010. He began his career in 1993 in Ternium Argentina. Since then, he has held several positions within the Company, such as finance director of Ternium from 2005 to 2007 and in 2009, and chief financial officer of Sidor in 2008. Mr. Brizzio holds a degree in industrial engineering from ITBA (Buenos Aires Institute of Technology) and a Master on Business Administration from Duke University. Mr. Brizzio is an Argentine citizen.

César Alejandro Jiménez. Mr. Jiménez currently serves as President of Ternium Mexico. He assumed the position in 2018. Prior to that, he served as commercial vice president of Ternium Mexico since 2014. He has held other executive positions since joining the company in 2007, such as CEO of Tenigal (2010-2014) and industrial sales director of Ternium Mexico (2008-2009). In addition, he is member of the board of directors of Tenigal. He holds a BS in computer science from UANL (Autonomous University of Nuevo León), a master degree in information systems management from ITESM (Monterrey Institute of Technology and Higher Education) and general



management program studies at Harvard Business School. Mr. Jiménez is a Mexican citizen.

Martín Berardi. Mr. Berardi currently serves as President of Ternium Argentina. In addition, he is the Chairman of the board of directors of Ternium Argentina. He began his career in the Techint Group in 1980 as a trainee in Propulsora Siderúrgica. He has held several positions within the Techint Group including Propulsora Siderúrgica, Siat S.A., or Siat (an Argentine welded steel pipe manufacturer which is a Tenaris's subsidiary), and Siderca S.A.I.C., or Siderca (Argentine producer of seamless steel pipe products, which is a Tenaris's subsidiary). He served as managing director of Siat (1992-1995), managing director of Mexican steel company Tubos de Acero de México S.A., or Tamsa (1995-2000), president and chief executive officer of Venezuelan steel company Sidor (2000-2004) and became managing director (October 2004), executive vice president and President of Ternium Argentina. He was president of the IVES (Venezuelan Steel Institute) between 2002 and 2004, president of Grupo Mercofer between 2006 and 2009, vice-president of CAA (Argentine Steel Chamber) between 2014 and 2015, and president of Alacero between 2013 and 2015. He is currently president of CAA, vice-president and a member of the board of directors of Alacero and a member of the board of directors of ITBA. Mr. Berardi holds an industrial engineering degree from ITBA and a M.S. in management from Stanford University. Mr. Berardi is an Argentine citizen.

Marcelo Chara. Mr. Chara currently serves as Ternium Brasil President. He began his career in the Techint Group in 1983. He has held several executive positions within the Techint Group in Argentina, Brazil and Venezuela, including rolling operations director, central maintenance director and industrial director of Ternium Argentina (2006-2011 and 2015-2017), a position that he held until he assumed his current position at the Company. Mr. Chara also worked at Usiminas as industrial vice president (2012-2014). He holds a degree in metallurgical engineering from Universidad Católica de Córdoba and a Master of Science in metallurgy from Birmingham University. He is a board member of IABr (Brazil Steel Institute) and of Alacero. Mr. Chara is an Argentine citizen.

Héctor Obeso Zunzunegui. Mr. Obeso currently serves as our International Business Unit President. He assumed his current position in 2012, then named international area manager. He has held several other executive positions since joining the Company in the year 2007, such as quality & product director of Ternium Argentina, industrial sales director of Ternium Mexico and commercial director of Ternium Mexico.

Oscar Montero Martínez. Mr. Montero currently serves as our Planning and Global Business Development General Director. He began his career with the Company in 1984 as a commercial analyst in Ternium Argentina. Since then, he has held several positions within Ternium Argentina in the planning, commercial and procurement areas. In 1998 he assumed the position of strategic planning director in Sidor and in 2005 he assumed the position of planning and operations general director of the Company. He assumed his current position in 2017. Mr. Montero is an Argentine citizen.

Pablo Hernán Bassi. Mr. Bassi currently serves as our Engineering, Industrial Coordination and EHS Director. He began his career in the Techint Group in 1987 holding several positions in the engineering departments of Siderca, Techint-Compagnia Tecnica Internazionale S.p.A. and Ternium Argentina. He served as engineering and environment director of Ternium Mexico (2005-2017) and assumed his current position in November 2017. Mr. Bassi holds a degree in engineering from Universidad de Buenos Aires. Mr. Bassi is an Argentine citizen.

Rubén Herrera. Mr. Herrera is our Quality and Research & Development Director since July 1, 2008. He is also Quality and Research & Development Director of Ternium Mexico since 2007. Since joining the Techint Group in 1990, he has held several other executive positions, including mechanical metallurgical department chief in Siderca's Industrial Research Center, product manager of Ternium Argentina, and Quality and Product Director of Sidor. Mr. Herrera is an Argentine citizen.

Roberto Demidchuk. Mr. Demidchuk currently serves as our Chief Information Officer. He joined the Techint Group in 1986 as a trainee for Techint Compañía Técnica Internacional S.A.C.I. Since then he has held several positions in different Techint Group companies, including programming manager and procurement manager at Ternium Argentina and supply chain director at Ternium. Mr. Demidchuk is an Argentine citizen.

Rodrigo Piña. Mr. Piña currently serves as our Human Resources Director. He assumed his current position in January 2013. Prior to that, he served as human resources director of Ternium Argentina. He has held several other executive positions since joining the Company in 2004, such as commercial planning, CEO assistant and human resources director assistant. Mr. Piña is an Argentine citizen.

## B. Compensation

The compensation of the members of the Company's board of directors is determined at the annual ordinary general shareholders' meeting. Each member of the board of directors received for the year 2018 a fee of \$115,000, and the chairman of the board of directors received an additional fee of \$295,000. The chairman of the audit committee received as additional compensation a fee of \$65,000, while the other members of the audit committee received an additional fee of \$55,000. Under the Company's articles of association, the members of the audit committee are not eligible to participate in any incentive compensation plan for employees of the Company or any of its subsidiaries. The aggregate cash compensation received by senior management for the year 2018 amounted to \$16.2 million. In addition, senior management received, for the year 2018, 894,000 units for a total amount of \$2.9 million, in connection with the employee incentive retention program described in note 4(o)(3) "Employee liabilities—Other compensation obligations" to our consolidated financial statements included elsewhere in this annual report. There are no service contracts between any director and Ternium that provide for material benefits upon termination of employment. The Company does not provide pension, retirement or similar benefits to directors.

## C. Board Practices

For information related to this matter, see "—A. Directors and Senior Management."

### Audit Committee

The Company's audit committee operates under a charter that was amended and restated by the board of directors on February 20, 2018. Pursuant to the Company's current articles of association, as supplemented by the audit committee's charter, for as long as the Company's shares are listed on one or more regulated markets, the Company must have an audit committee composed of at least three members selected among the directors, all of which must qualify as independent directors under the Company's articles of association and must be "independent" for purposes of the U.S. Securities Exchange Act Rule 10A-3(b)(1), or any rule that may replace or supplement it in the future. The audit committee members may only receive directors' fees or compensation for their services to the Company.

On May 2, 2018, the Company's board of directors reappointed Ubaldo José Aguirre, Adrián Lajous Vargas and Vincent Robert Gilles Decalf, as members of its audit committee, with Mr. Aguirre to continue chairing that committee. All three members of the audit committee are independent under the Company's articles of association, as well as for purposes of the U.S. Securities Exchange Act Rule 10A-3(b)(1).

Under the Company's articles of association, an independent director is a director who:

- is not employed, and has not been employed in an executive capacity by the Company or any of its subsidiaries
- (i) within the five years preceding the ordinary general shareholders' meeting at which the candidate for the board of directors was voted upon;
  - does not receive consulting, advisory or other compensatory fees from the Company or any of its subsidiaries
- (ii) (other than fees received as a member of the board of directors of any committee thereof and fees received as a member of the board of directors or other governing body, or any committee thereof, of any of the Company's subsidiaries);
- (iii) is not a person who directly or indirectly controls the Company;
  - does not have, and does not control a business entity that has, a material business relationship with the Company, any of its subsidiaries or a person who directly or indirectly controls the Company, if such material business
- (iv) relationship would reasonably be expected to adversely affect the director's ability to properly discharge his or her duties;
  - does not control directly or indirectly, and is not and has not been, within the five years preceding the ordinary
- (v) general shareholders' meeting at which the candidate for the board of directors was voted upon, employed by a present or former internal or external auditor of the Company, any of its subsidiaries or a person who directly or indirectly controls the Company; and
- (vi) is not a spouse, parent, sibling or relative up to the third degree of, and does not share a home with, any of the persons listed above.

Under our articles of association, as supplemented by the audit committee's charter, the audit committee assists the board of directors in fulfilling its oversight responsibilities with respect to the integrity of the Company's financial statements, including periodically reporting to the board of directors on its activity; and the adequacy of the Company's systems of internal control over financial reporting. The audit committee is also responsible for making recommendations regarding the appointment, dismissal, compensation, retention and oversight of, and for assessing the independence of, the Company's external auditors (see Item 16.C "—Principal Accountant Fees and Services" for additional information about the audit committee's procedures with respect to our independent auditors). The audit committee also performs other duties imposed by applicable laws, rules and regulations of the regulated market or markets on which the shares of the Company are listed, as well as any other duty entrusted to it by the Company's board of directors.

In addition, the audit committee is required by the Company's articles of association and audit committee's charter to review "Material Transactions" (as such term is defined by the Company's articles of association and audit committee's charter), to be entered into by the Company or its subsidiaries with "Related Parties," as such term is defined by the Company's articles of association, in order to determine whether their terms are consistent with market conditions or are otherwise fair to the Company and/or its subsidiaries. Under the Company's articles of association, as supplemented by the audit committee's charter:

a Material Transaction is (i) any transaction with or involving a Related Party (x) with an individual value equal to or greater than ten million U.S. dollars or its equivalent in any other currency or (y) with an individual value lower than ten million U.S. dollars or its equivalent in any other currency, when the aggregate sum of any series of transactions reflected in the financial statements of the four fiscal quarters of the Company preceding the date of determination (excluding any transactions that were reviewed and approved by any of the Company's audit committee or board of directors or the independent members of the board of directors or other governing body of any subsidiary of the Company, or that were reviewed and approved by a majority of the members of the board of directors or similar governing body of any subsidiary of the Company that were not nominated by or at the request of the Company or any entity that directly or indirectly controls, or is under common control with the Company) exceeds 1.5% of the Company's consolidated net sales made in the fiscal year preceding the year on which the determination is made; or (ii) any corporate reorganization transaction (including a merger, spin-off or bulk transfer of a business) involving the Company or any of its direct or indirect subsidiaries for the benefit of, or involving, a Related Party; and

a Related Party is, in relation to the Company or its direct or indirect subsidiaries, any of the following persons: (i) a member of the board of directors of the Company or of the board of directors or other governing body of any of the Company's subsidiaries; (ii) any member of the board of directors or other governing body of an entity that directly or indirectly controls the Company; (iii) any entity that directly or indirectly controls or is under common control with the Company (other than the Company's subsidiaries); (iv) any entity directly or indirectly controlled by any member of the board of directors of the Company, or of the board of directors or other governing body of any subsidiary of the Company; and (v) any spouses, parents, siblings or relatives up to the third degree of, and any person that shares a home with, any person referred to in (i) or (ii).

The audit committee has the power (to the maximum extent permitted by applicable laws) to request the Company or relevant subsidiary to provide promptly all of the information as may be necessary for the audit committee to properly assess all Material Transactions subject to its review. Until such time as the audit committee has completed its review of, and the board of directors has approved, the proposed Material Transaction in question, such Material Transaction may not be entered into or consummated unless (i) the facts and circumstances underlying the proposed Material Transaction justify that it be entered into or consummated before the time that it is reviewed by the Company's audit committee or approved by the board of directors and (ii) the Related Party agrees to unwind the transaction if the Company's audit committee fails to recommend the approval of, or board of directors fails to approve, the Material Transaction in question.

The audit committee must have sufficient resources and support to carry out its duties and responsibilities. In addition, the audit committee has the authority to engage, at the Company's expense, independent counsel and other advisors to review specific issues, as it deems necessary to carry out its duties; and the audit committee also has the authority to conduct any investigation appropriate to fulfilling its responsibilities, and has direct access to the Company's internal

and external auditors as well as the Company's management and employees and, subject to applicable laws, its subsidiaries.

#### D. Employees

The following table shows the number of persons employed by Ternium and its fully consolidated subsidiaries, and excludes proportionally consolidated subsidiaries Consorcio Peña Colorada and Exiros:

	At December 31,		
	2018	2017	2016
Mexico	9,287	9,342	9,241
Argentina	5,494	5,770	5,464
Brazil	3,863	4,134	4
Colombia	1,428	1,519	1,484
Other	588	570	532

Total employees 20,660 21,335 16,725

The number of our employees increased 28% during 2017 mainly reflecting the incorporation of Ternium Brasil. For further information on the acquisition of CSA, see note 3 to our consolidated financial statements included elsewhere in this annual report.

A substantial majority of Ternium's employees at its manufacturing subsidiaries are represented by labor unions. We believe that we enjoy good or satisfactory relations with our employees and their unions in each of the countries in which we have manufacturing facilities, and we have not experienced any major strikes or other labor conflicts with a material impact on our operations over the last five years.

In Argentina, significant fluctuations in exchange rates, together with inflationary pressures, affect our costs, increase labor demands and could eventually generate higher levels of labor conflicts.

#### E. Share Ownership

To our knowledge, none of our directors or executive officers owns more than 1% of the total number of shares of the Company (including in the form of ADSs).

#### Item 7. Major Shareholders and Related Party Transactions

##### A. Major Shareholders

The following table shows the beneficial ownership of our securities (in the form of shares or ADSs) by the Company's major shareholders (persons or entities that beneficially own 5% or more of the Company's share capital), non-affiliated public shareholders, the Company and the Company's directors and senior management as a group. The information below is based on the most recent information available to the Company.

Identity of Person or Group	Number	Percent
Techint Holdings S.à r.l. and subsidiaries (1)	1,243,433,112	62.02 %
Tenaris (1)	229,713,194	11.46 %
Ternium S.A.	41,666,666	2.08 %
Directors and Senior Management as a group	195,450	0.01 %
Public	489,735,020	24.43 %
Total	2,004,743,442	100.00 %

Each of Techint Holdings and Tenaris is controlled by San Faustin. RP STAK holds voting shares in San Faustin sufficient in number to control San Faustin (i.e. it has the ability to influence matters affecting, or submitted to a (1) vote of the shareholders of San Faustin, including the election of directors and the approval of certain corporate transactions and other matters concerning San Faustin's policies). No person or group of persons controls RP STAK.

As of February 28, 2019, 48,993,047 ADSs (representing 489,930,470 shares, or 24% of all outstanding shares of the Company) were registered in the name of two record holders resident in the United States, as informed by BNY Mellon, the Depository for the ADS program.

The voting rights of our principal shareholders do not differ from the voting rights of other shareholders. None of its outstanding shares have any special control rights. There are no restrictions on voting rights, nor are there, to the Company's knowledge, any arrangements among shareholders of the Company that might result in restrictions on the transfer of securities or the exercise of voting rights.

The Company does not know of any significant agreements or other arrangements to which the Company is a party and which take effect, alter or terminate in the event of a change of control of the Company. The Company does not know of any arrangements, the operation of which may at a later date result in a change of control of the Company.

## B. Related Party Transactions

Ternium is a party to several related party transactions as described in note 26 to our consolidated financial statements included elsewhere in this annual report. "Material Transactions" (as such term is defined by the Company's articles of association and audit committee charter) to be entered into by the Company or its subsidiaries with "Related Parties," as such term is defined by the Company's articles of association, are subject to the review of the audit committee of the Company's board of directors and the requirements of Luxembourg law. For further detail on the approval process for related party transactions, see Item 6. "Directors, Senior Management and Employees—C. Board Practices—Audit Committee." Below is a description of relevant related party transactions.

### Purchases of Raw Materials

In the ordinary course of business, Ternium buys raw materials and other production inputs from subsidiaries of Tenaris. These transactions include:

- purchase of ferrous scrap and other raw material, which amounted to \$8.9 million in 2018, \$26.3 million in 2017 and \$14.1 million in 2016; and

- purchase of steam and operational services from the Argentine electric power generating facility of Siderca for Ternium Argentina in San Nicolás. These purchases amounted to \$11.9 million in 2018, \$11.1 million in 2017 and \$11.6 million in 2016.

### Purchases of Steel Products

In the ordinary course of business, Ternium buys steel products from Usiminas and its subsidiaries. Purchases amounted to \$73.2 million in 2018, \$57.2 million in 2017 and \$37.4 million in 2016.

### Sales of Steel Products and Raw Materials

In the ordinary course of business, Ternium sells steel products and raw materials to subsidiaries of Tenaris. These transactions include:

- sales of round steel bars under a long-term agreement to Tenaris' facilities in Mexico, which amounted to \$101.9 million in 2018, \$119.9 million in 2017 and \$9.4 million in 2016; and

- sales of flat steel products to be used in the production of welded pipes and accessories, which amounted to \$32.4 million in 2018, \$42.8 million in 2017 and \$18.3 million in 2016.

- sales of scrap and other raw materials to be used in the production of seamless pipes, which amounted to \$1.9 million in 2018, \$0.4 million in 2017 and \$0.9 million in 2016.

In addition, Ternium sold metal building components and long steel products to Techint, a company controlled by San Faustin, which amounted to \$0.6 million in 2018, \$0.8 million in 2017 and \$1.8 million in 2016.

Furthermore, in September 2017, following the acquisition of Ternium Brasil, Ternium started selling steel slabs to Usiminas. Sales amounted to \$569.3 billion in 2018 and \$215.3 million in 2017.



### Supply of Natural Gas

Ternium Mexico has natural gas supply agreements with GIMSA, a natural gas distributor and a company in which Ternium Mexico holds 23.44% equity participation. GIMSA sales to Ternium Mexico amounted to \$137.7 million in 2018, \$102.3 million in 2017 and \$100.7 million in 2016.

Ternium Argentina has natural gas supply agreements with Tecpetrol and Energy Consulting Services, natural gas transportation agreements with TGN, and natural gas distribution agreements with Litoral Gas. Tecpetrol is a company controlled by San Faustin, engaged in oil and gas exploration and production and has rights to various oil and gas fields in Argentina and elsewhere in Latin America. TGN operates two major pipelines in Argentina connecting the major gas basins of Neuquén and Noroeste-Bolivia to the major consumption centers in Argentina. Litoral Gas is a company that holds the regional license for gas distribution in the Province of Santa Fe and in the northeastern section of the Province of Buenos Aires. Energy Consulting Services is a company engaged in energy and management consulting, representing one of the major and most reliable natural gas traders in Argentina. San Faustin holds significant but non-controlling interests in TGN, Litoral Gas and Energy Consulting Services. Tecpetrol supplies natural gas at prices and on terms and conditions that are equivalent to those charged to Ternium Argentina by other suppliers of natural gas. Tecpetrol's sales to Ternium Argentina amounted to \$16.9 million in 2018, \$6.1 million in 2017 and \$0.5 million in 2016.

TGN charges Ternium Argentina a price to transport its natural gas supplies that is equivalent, on a comparable basis, to prices paid by other industrial users. The Argentine government regulates the framework under which TGN operates and prices its services. TGN's sales to Ternium Argentina amounted to \$7.0 million in 2018, \$5.1 million in 2017 and \$3.1 million in 2016.

Litoral Gas distributes gas to Ternium Argentina's northern plants. The Argentine government regulates the framework under which Litoral Gas operates and establishes a maximum price for its distribution service. Litoral Gas' sales to Ternium totaled \$2.4 million in 2018, \$2.4 million in 2017 and \$1.5 million in 2016.

Energy Consulting Services provides Ternium Argentina with natural gas at market prices. Energy Consulting Services sales amounted to \$1.3 million in 2018, \$9.4 million in 2017 and \$15.0 million in 2016.

### Supply of Electric Energy

Techgen, which is owned 48% by Ternium, 30% by Tecpetrol and 22% by Tenaris, operates an electric power plant in Pesquería, Mexico. Ternium's subsidiaries in Mexico and Tenaris currently contract 78% and 22%, respectively, of Techgen's power capacity. Beginning in December 2016, Techgen became fully operational and started producing electricity.

Techgen sales of electricity to Ternium Mexico and Tenigal amounted to \$272.3 million in 2018, \$245.4 million in 2017 and \$6.5 million in 2016. In addition, Techgen sells to third parties on behalf of Ternium Mexico and Tenigal the unused electricity that Ternium Mexico and Tenigal purchased from Techgen. Ternium Mexico and Tenigal received from Techgen on account of such unused electricity sales an amount of \$205.2 million in 2018 and \$238.3 million in 2017.

### Provision of Engineering and Labor Services

Ternium contracts with certain companies controlled by San Faustin specialized in supplying engineering services, construction services, labor and supervision services, for civil and electromechanical works, and cleaning, general maintenance and handling of by-products services. Fees accrued for these services amounted to \$88.2 million in 2018, \$104.1 million in 2017 and \$120.2 million in 2016.

### Purchase Agency Services and Sales of Materials

Exiros, in which we have 50% share ownership and Tenaris has remaining 50% share ownership, provides to Tecpetrol and other companies controlled by San Faustin with purchase agency services and sales of raw materials and other products. Under the Exiros shareholder arrangements, Ternium recognizes Exiros' assets, liabilities, revenue and expenses in relation to its interest in the joint operation. For further information, see Item 4. "Information on the Company—B. Business Overview— Enhance Ternium's Position as a competitive steel producer". Exiros' sales to companies controlled by San Faustin totaled \$15.5 million in 2018, \$4.1 million in 2017 and \$1.7 million in 2016, of which the Company recognized \$7.8 million, \$2.1 million and \$0.9 million in 2018, 2017 and 2016, respectively.



#### Sales and Purchases of Other Products and Services

Ternium enters into other transactions with companies controlled by San Faustin from time to time. Relevant transactions were those for the purchase of plant equipment and spare parts, and technical assistance from Tenova and from other related companies, which amounted to \$4.8 million in 2018, \$3.6 million in 2017 and \$18.6 million in 2016.

#### Administrative Services

Finma S.A., or Finma, Arhsa S.A., or Arhsa. and Techinst S.A., a group of companies controlled by San Faustin in which the Company had a 33% share ownership and other affiliates of San Faustin had the remaining share ownership, provided administrative and legal support services to San Faustin's affiliates in Argentina, including Argentine affiliates of Ternium. On July 4, 2018, Arhsa merged with Finma, with Finma continuing to render the services previously provided by Arhsa. Fees accrued for these services amounted to \$7.5 million in 2018, \$10.5 million in 2017 and \$10.0 million in 2016.

#### Loans to Related Parties

Ternium financed the construction and operation of Techgen's Pesquería project primarily in the form of subordinated loans to Techgen. Outstanding loans to Techgen amounted to \$151.6 million, \$127.1 million and \$103.1 million as of December 31, 2018, 2017 and 2016, respectively. These loans generated interest gains in favor of Ternium in an amount of \$9.3 million in 2018, \$7.6 million in 2017 and \$3.5 million in 2016. For further information on the Techgen investment, see Item 4. "Information on the Company—C. Organizational Structure—Other investments—Techgen."

#### Dividends from Related Parties

Ternium received dividend payments from Usiminas in an amount of \$8.8 million in 2018 and \$3.3 million in 2017.

#### Other Transactions

In addition, in the ordinary course of business, from time to time, we carry out other transactions and enter into other arrangements with other related parties, none of which are considered to be material.

#### C. Interest of Experts and Counsel

Not applicable.

#### Item 8. Financial Information

##### A. Consolidated Statements and Other Financial Information

See Item 18 and pages F-1 through F-88 for our consolidated financial statements.

##### Legal Proceedings

Ternium is subject to various claims, lawsuits and other legal proceedings that arise in the ordinary course of business, including customer claims in which a third party is seeking reimbursement or indemnity. The Company's liability with respect to such claims, lawsuits and other legal proceedings cannot be estimated with certainty. Periodically, management reviews the status of each significant matter and assesses potential financial exposure. If the potential loss from the claim or proceeding is considered probable and the amount can be reasonably estimated, a liability is recorded. Management estimates the amount of such liability based on the information available and the assumptions and methods it has concluded are appropriate, in accordance with the provisions of IFRS. Accruals for such contingencies reflect a reasonable estimate of the losses to be incurred based on information available, including the relevant litigation or settlement strategy, as of the date of preparation of these financial statements. As additional information becomes available, management will reassess its evaluation of the pending claims, lawsuits and other proceedings and revise its estimates. The loss contingencies provision amounts to \$643.9 million and \$768.5 million as of December 31, 2018 and 2017, respectively.

##### Outstanding Legal Proceedings

The following legal proceedings were outstanding as of the date of this report:

Companhia Siderúrgica Nacional (CSN) – Tender offer litigation

In 2013, the Company was notified of a lawsuit filed in Brazil by Companhia Siderúrgica Nacional, or CSN, and various entities affiliated with CSN against Ternium Investments, its subsidiary Ternium Argentina, and TenarisConfab. The entities named in the CSN lawsuit had acquired a participation in Usiminas in January 2012. The CSN lawsuit alleges that, under applicable Brazilian laws and rules, the acquirers were required to launch a tag-along tender offer to all non-controlling holders of Usiminas ordinary shares for a price per share equal to 80% of the price per share paid in such acquisition, or BRL 28.8, and seeks an order to compel the acquirers to launch an offer at that price plus interest. If so ordered, the offer would need to be made to 182,609,851 ordinary shares of Usiminas not belonging to Usiminas' control group; Ternium Investments and Ternium Argentina's respective shares in the offer would be 60.6% and 21.5%.

On September 23, 2013, the first instance court dismissed the CSN lawsuit, and on February 8, 2017, the court of appeals of São Paulo maintained the understanding of the first instance court. On March 6, 2017, CSN filed a motion for clarification against the decision of the court of appeals, which was rejected on July 19, 2017. On August 18, 2017, CSN filed with the court of appeals an appeal seeking the review and reversal of the decision issued by the court of appeals by the Superior Court of Justice. On March 5, 2018, the court of appeals ruled that CSN's appeal did not meet the requirements for review by the Superior Court of Justice and rejected such appeal. On May 8, 2018, CSN appealed against such ruling and on January 22, 2019, the court of appeals rejected such appeal and ordered that the case be submitted to the Superior Court of Justice.

The Superior Court of Justice will review the admissibility of CSN's appeal, and, if the appeal is declared admissible, will then render a decision on the merits. The Superior Court of Justice is restricted to the analysis of alleged violations to federal laws and cannot assess matters of fact. Ternium continues to believe that all of CSN's claims and allegations are groundless and without merit, as confirmed by several opinions of Brazilian legal counsel, two decisions issued by the Brazilian securities regulator (CVM) in February 2012 and December 2016, and the first and second instance court decisions referred to above. Accordingly, no provision has been recorded in our consolidated financial statements.

Shareholder claims relating to the October 2014 acquisition of Usiminas shares

On April 14, 2015, the staff of the CVM determined that an acquisition of additional ordinary shares of Usiminas by Ternium Investments made in October 2014, triggered a requirement under applicable Brazilian laws and regulations for Usiminas' controlling shareholders to launch a tender offer to all non-controlling holders of Usiminas ordinary shares. The CVM staff's determination was made further to a request by NSSMC and its affiliates, who alleged that Ternium's 2014 acquisition had exceeded a threshold that triggers the tender offer requirement. In the CVM staff's view, the 2014 acquisition exceeded the applicable threshold by 5.2 million shares. On April 29, 2015, Ternium filed an appeal to be submitted to the CVM's Board of Commissioners. On May 5, 2015, the CVM staff confirmed that the appeal would be submitted to the Board of Commissioners and that the effects of the staff's decision would be stayed until such Board rules on the matter.

On June 15, 2015, upon an appeal filed by NSSMC, the CVM staff changed its earlier decision and stated that the obligation to launch a tender offer would fall exclusively on Ternium. Ternium's appeal has been submitted to the CVM's Board of Commissioners and it is currently expected that such Board will rule on the appeal in 2019. In addition, on April 18, 2018, Ternium filed a petition with the CVM's reporting Commissioner requesting that the applicable threshold for the tender offer requirement be recalculated taking into account the new ordinary shares issued by Usiminas in connection with its 2016 BRL1 billion capital increase and that, in light of the replenishment of the threshold that would result from such recalculation, the CVM staff's 2015 determination be set aside. In the event the appeal is not successful, under applicable CVM rules Ternium may elect to sell to third parties the 5.2 million shares allegedly acquired in excess of the threshold, in which case no tender offer would be required.

Potential Mexican income tax adjustment

In March 2015, the Mexican tax authorities, as part of a tax audit to Ternium Mexico with respect to fiscal year 2008, challenged the deduction by Ternium Mexico's predecessor IMSA Acero of a tax loss arising from an intercompany sale of shares in December 2008. Although the tax authorities have not yet determined the amount of their claim, they have indicated in a preliminary report that they have observations that may result in an income tax adjustment currently estimated at approximately \$57.8 million, including interest and fines. Additionally, in September 2018, the Mexican tax authority, as a result of a tax audit for the fiscal year 2011 to Ternium Mexico, as predecessor of Aceros

Planos de Monterrey S.A. de C.V., or APM, objected to, among other items, the deduction of the tax loss remaining for the year 2008, for which the estimated income tax adjustment would be of approximately \$25.4 million, including interest and fines.

Ternium Mexico requested an injunction from the Mexican courts against the audit observations for the year 2008 and the fiscal credit of the year 2011, and also filed its defense and supporting documents with the Mexican tax authorities. The Company, based on the advice of counsel, believes that an unfavorable outcome in connection with this matter is not probable and, accordingly, no provision has been recorded in our consolidated financial statements.

#### Putative class action

The Company is aware that, following its November 27, 2018 announcement that its chairman Paolo Rocca was included in an Argentine court investigation known as the Notebooks Case, a putative class action complaint was filed in the U.S. District Court for the Eastern District of New York purportedly on behalf of purchasers of Ternium securities from May 1, 2014 through November 27, 2018. The individual defendants named in the complaint are our chairman, our former CEO, our current CEO and our CFO. That complaint alleges that during the class period (May 2014–November 2018), the Company and the individual defendants inflated the price of Ternium’s ADSs by failing to disclose that sale proceeds received by Ternium when Sidor was expropriated by Venezuela were received or expedited as a result of alleged improper payments made to Argentine officials. The complaint does not specify the damages that plaintiff is seeking. In accordance with a schedule agreed upon between the parties and ordered by the court, the plaintiff is expected to file a consolidated amended complaint by May 15, 2019, and the Company’s response to the amended complaint will be due by July 15, 2019. Management believes the Company has meritorious defenses to these claims; however, at this stage the Company cannot predict the outcome of the claim or the amount or range of loss in case of an unfavorable outcome.

#### Dividend Policy

The Company does not have, and has no current plans to establish, a formal dividend policy governing the amount and payment of dividends or other distributions. The amount and payment of dividends must be determined by a simple majority vote at a general shareholders’ meeting, generally, but not necessarily, based on the recommendation of the Company’s board of directors. All shares of the Company’s share capital rank *pari passu* with respect to the payment of dividends. For a description of the shareholders’ and holders of ADS’ rights to receive dividends and the conditions to declare and pay dividends, please refer to Item 10. “Additional Information—B. Memorandum and Articles of Association—Dividends”.

The following table shows the dividends approved by the Company’s shareholders in the last five years:

Shareholders’ meeting date	Approved dividend			Dividend payment date
	Amount (\$ million)	Per share (\$)	Per ADS (\$)	
May 7, 2014	150.4	0.075	0.75	May 16, 2014
May 6, 2015	180.4	0.090	0.90	May 15, 2015
May 4, 2016	180.4	0.090	0.90	May 13, 2016
May 3, 2017	196.3	0.100	1.00	May 12, 2017
May 2, 2018	215.9	0.110	1.10	May 10, 2018

On February 19, 2019, the Company’s board of directors proposed that an annual dividend of \$0.120 per share (\$1.20 per ADS), or approximately \$235.6 million in the aggregate (which does not include the shares held by the Company), be approved at the company’s annual general shareholders’ meeting, scheduled to be held on May 6, 2019. If the annual dividend is approved at the shareholders’ meeting, it will be paid on May 14, 2019.

#### B. Significant Changes

Except as otherwise disclosed in this annual report, there has been no undisclosed significant change since the date of the annual financial statements.

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Item 9. The Offer and Listing

A. Offer and Listing Details

The Company's ADSs are listed on the New York Stock Exchange, or NYSE, under the symbol "TX." Trading on the NYSE began on February 1, 2006. As of February 28, 2019, a total of 2,004,743,442 shares were registered in the Company's shareholder register.

As of February 28, 2019, a total of 489,930,470 shares were registered on behalf of BNY Nominees Limited, related to the Company's ADR program. On February 28, 2019, the closing price for the Company's ADSs reported by the NYSE was \$28.85.

New York Stock Exchange

As of February 28, 2019, a total of 48,993,047 ADSs were registered of record. Each ADS represents ten shares of the Company's share capital. For the year ended December 31, 2018, BNY Mellon acted as the Company's depository for issuing ADRs evidencing the ADSs.

B. Plan of Distribution

Not applicable.

C. Markets

For information related to this matter, see "—A. Offer and Listing Details."

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

Item 10. Additional Information

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

General

The following is a summary of certain rights of holders of the Company's shares. These rights are set out in the Company's articles of association or are provided by applicable Luxembourg law, and may differ from those typically provided to shareholders of U.S. companies under the corporation laws of some states of the United States of America. This summary is not exhaustive and does not contain all information that may be important to you. For more complete information, you should read the Company's articles of association, which are attached as an exhibit to this annual report.

The Company is a public limited liability company (société anonyme) organized under the laws of Luxembourg. Its object and purpose, as set forth in Article 2 of its articles of association, is the taking of interests, in any form, in corporations or other business entities, and the administration, management, control and development thereof. The Company is registered under the number B98 668 in the Luxembourg Registre de Commerce et des Sociétés.

The Company's authorized share capital is fixed by the Company's articles of association, as amended from time to time, with the approval of shareholders at an extraordinary general shareholders' meeting. The Company has an authorized share capital of a single class of 3,500,000,000 shares having a nominal value of \$1.00 per share. The





validity period of the Company's authorized share capital and the related authorization will expire (unless renewed) on June 5, 2020. As of February 28, 2019, there were 2,004,743,442 shares issued. All issued shares are fully paid.

The Company's articles of association authorize the board of directors, or any delegate(s) duly appointed by the board of directors, to issue shares within the limits of its authorized share capital against contributions in cash, contributions in kind or by way of incorporation of available reserves, at such times and on such terms and conditions as the board of directors, or its delegate(s) may in its or their discretion resolve. The validity period of such authorization will expire (unless renewed) on June 5, 2020.

The Company's shareholders have authorized the board of directors to waive, suppress or limit any pre-emptive subscription rights of shareholders provided for by law to the extent it deems such waiver, suppression or limitation advisable for any issue or issues of shares within the authorized share capital; and have waived any pre-emptive subscription rights provided for by law and related procedures. The validity period of such authorization will expire (unless renewed) on June 5, 2020. However, for as long as the Company's shares are listed on a regulated market (and only for as long as they are so listed), any issuance of shares for cash within the limits of the authorized share capital shall be subject to the pre-emptive subscription rights of the then-existing shareholders (as set out in the articles of association), except in the following cases (in which cases no pre-emptive rights shall apply):

- (a) any issuance of shares for, within, in conjunction with or related to, an initial public offering of the Company's shares on one or more regulated markets (in one or more instances);
- (b) any issuance of shares against a contribution other than in cash;
- (c) any issuance of shares upon conversion of convertible bonds or other instruments convertible into shares; provided, however, that the pre-emptive subscription rights of the then-existing shareholders shall apply by provision of the Company's articles of association in connection with any issuance of convertible bonds or other instruments convertible into shares for cash; and
- (d) any issuance of shares (including by way of free shares or at a discount), up to an amount of 1.5% of the issued share capital of the Company, to directors, officers, agents or employees of the Company, its direct or indirect subsidiaries, or its affiliates, including without limitation the direct issue of shares upon the exercise of options, rights convertible into shares, or similar instruments convertible or exchangeable into shares issued for the purpose of, or in relation to, compensation or incentive for any such persons or in relation thereto (which the board of directors shall be authorized to issue upon such terms and conditions as it deems fit).

Amendment of the Company's articles of association requires the approval of shareholders at an extraordinary shareholders' meeting with a two-thirds majority vote of the shares represented at the meeting.

#### Dividends

Subject to applicable law, all shares (including shares underlying ADSs) are entitled to participate equally in dividends when, as and if declared by the shareholders at the ordinary general shareholders' meeting, out of funds legally available for such purposes. Under Luxembourg law, claims for dividends will lapse five years after the date such dividends are declared. However, the Company may elect to pay a declared dividend after such period. Declared and unpaid dividends held by the Company for the account of its shareholders do not bear interest. The general shareholders' meeting, which every shareholder has the right to attend in person or by proxy, may declare a dividend or other distribution of funds legally available therefor.

Dividends may be lawfully declared and paid if our net profits and distributable reserves are sufficient under Luxembourg law. Under Article 21 of the Company's articles of association, the board of directors has the power to distribute interim dividends out of profits, share premium or any other available reserves, in accordance with applicable law, in particular in accordance with the conditions set forth in article 461-3 of the Luxembourg Company Law. Such dividend payments must be finally approved by the Company's general shareholders' meeting.

As provided by Article 21 of the Company's articles of association, dividends or other distributions declared by the general meeting as well as interim dividends or other distributions declared by the board of directors will be distributed at the times and places determined by the board of directors. The Company will make any and all dividend payments and any other distributions in respect of shares registered in the name of any securities settlement system or operator of such a system or in the name of any financial institution or other professional depository of securities or

any other depositary, whether in cash, shares or other assets, only to such registered holder, or otherwise in accordance with such registered holder's instructions, and, as provided by Article 21 of the Company's articles of association, that payment shall release the Company from any and all obligations for such payment.

The Company conducts all of its operations through subsidiaries and, accordingly, its main source of cash to pay dividends is the dividends received from its subsidiaries. For further information, see Item 3. "Key Information—D. Risk Factors—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." These dividend payments will likely depend on our subsidiaries' results of operations, financial condition, cash and capital requirements, future growth prospects and other factors deemed significant by their respective boards of directors, as well as on any applicable legal restrictions. For further information, see Item 3. "Key Information—D. Risk Factors—Risks Relating to the Countries in Which We Operate—Argentina".

Pursuant to Luxembourg law, at least 5% of our net profits per year must be allocated to the creation of a legal reserve until such reserve has reached an amount equal to 10% of our issued share capital. If the legal reserve later falls below the 10% threshold, at least 5% (or such lower amount required to reach the 10% threshold) of net profits again must be allocated toward the reserve. The Company's legal reserve represented 10% of its share capital as of December 31, 2018. The legal reserve is not available for distribution.

#### Voting Rights; Shareholders' Meetings; Election of Directors

Each share entitles the holder thereof to one vote at the Company's general shareholders' meetings. Shareholder action by written consent is not permitted, but proxy voting is permitted. Notices of general shareholders' meetings are governed by the provisions of Luxembourg law and the Company's articles of association. Under the current articles of association, notices of such meetings must be published twice, at least at eight-day intervals, the second notice appearing at least eight days prior to the meeting, in the Luxembourg *Recueil électronique des sociétés et associations* and in a Luxembourg leading newspaper. In case the Company's shares are listed on a foreign regulated market, notices of general shareholders' meetings shall also be published in accordance with the publicity requirements of such regulated market. The extraordinary general meeting of shareholders held on May 2, 2018, amended the Company's articles of association including, among other amendments, an amendment to Article 16 of the Company's articles of association with respect to notice of meetings, providing that notices for any general shareholders' meeting shall include such information and shall be given in such form through such means and at such time or times as may be required under applicable Luxembourg law; and, in case the shares of the Company are listed on a regulated market, such notices shall, in addition, satisfy such requirements as are applicable to, and mandatory for, notices of general shareholders' meetings of issuers such as the Company under the applicable laws, rules and regulations of such regulated market.

No attendance quorum is required at ordinary general shareholders' meetings and resolutions may be adopted by a simple majority vote of the shares present or represented and voted at the meeting. An extraordinary general shareholders' meeting resolving, among other matters, on the amendment of the articles of association may only validly deliberate when at least half of the share capital is present or represented and may only validly adopt resolutions with a two-thirds majority of votes of the shares present or represented. Under the current articles of association, if a quorum is not reached, a second meeting may be reconvened at a later date with no quorum requirements by means of notices published twice, at fifteen-day intervals, the second notice appearing at least fifteen days prior to the meeting, in the Luxembourg *Recueil électronique des sociétés et associations* and in a Luxembourg leading newspaper. The extraordinary general shareholders' meeting held on May 2, 2018, amended the articles of association also to reflect that these notices be published in accordance with applicable Luxembourg law and in

accordance with applicable laws, rules and regulations of the regulated markets where the Company's shares may be listed. In both cases (meeting or adjournment thereof, as the case may be), Luxembourg Company Law and the Company's articles of association require that any resolution of an extraordinary general shareholders' meeting resolving on the amendment of the articles of association be adopted by a two-thirds majority vote of the shares present or represented and voted at the meeting. If a proposed resolution consists of changing the Company's nationality or of increasing the shareholders' commitments, the unanimous consent of all shareholders is required. Directors are elected at ordinary general shareholders' meetings. Cumulative voting is not permitted. The Company's articles of association do not provide for staggered terms, and directors are elected for a maximum of one year but may be reappointed or removed at any time, with or without cause, by the general shareholders' meeting, by resolution passed by a simple majority vote of the shares present or represented at the meeting and voted. In the case of a

vacancy occurring on the board of directors, the remaining directors shall have the right to temporarily fill such vacancy with a temporary director appointed by resolution adopted with the affirmative vote of a majority of the remaining directors; provided that the next general shareholder's meeting shall be called upon to ratify such appointment. The term of a temporary director elected to fill a vacancy shall expire at the end of the term of office of the replaced director.

The next Company's annual general shareholders' meeting, that will consider, among other things our consolidated financial statements and annual accounts included in this report, will take place in the Company's registered office in Luxembourg, on Monday May 6, 2019, at 2:30 P.M., Luxembourg time. The articles of association provide that annual general shareholders' meetings shall meet within six months from the end of the previous financial year at the date, place and hour indicated in the convening notice.

Any shareholder who holds one or more shares of the Company on the fifth calendar day preceding a general shareholders' meeting (the "Record Date") shall be admitted to such general shareholders' meeting. Those shareholders who have sold their shares between the Record Date and the date of the general shareholders' meeting may not attend or be represented at the meeting.

In the case of shares held through fungible securities accounts, each shareholder may exercise all rights attached to his shares and, in particular, may participate in and vote at shareholders' meetings of the Company upon presentation of a certificate issued by the financial institution or professional depository holding the shares, evidencing such deposit and certifying the number of shares recorded in the relevant account on the Record Date. Such certificate must be filed at least five days before the meeting with the Company at its registered address or at the address stated in the convening notice or, in case the shares of the Company are listed on a regulated market, with an agent of the Company located in the country of the listing and designated in the convening notice. In case any such holder wishes to vote by proxy, the holder shall have to present a completed proxy form together with the certificate previously referred to, by the same date and time and at the same addresses.

The board of directors and the shareholders at the shareholders' meeting may, if they deem so advisable, reduce these periods of time for all shareholders and admit all shareholders (or their proxies) who have filed the appropriate documents to the general shareholders' meeting, irrespective of these time limits. Holders of ADSs only have those rights that are expressly granted to them in the deposit agreement dated January 31, 2006 among the Company, The BNY Mellon (formerly The Bank of New York), as depository, and all owners and beneficial owners from time to time of ADRs of the Company. ADS holders may not attend or directly exercise voting rights in shareholders' meetings, but may instruct the depository on how to exercise the voting rights for the shares which underlie their ADSs.

#### Access to Corporate Records

Luxembourg law and the Company's articles of association do not generally provide for shareholder access to corporate records. Shareholders may inspect the annual accounts and auditors' reports at the Company's registered office during the 15-day period prior to a general shareholders' meeting.

#### Appraisal Rights

In case the shares of the Company are listed on one or more regulated markets, and in the event the shareholders, in a general meeting, approve any of the following:

the delisting of the Company's shares from all regulated markets where the Company's shares are listed at that time, excluding a delisting made pursuant to an offer to all of the Company's shareholders made by a business entity subject

to common control with the Company, whereby such business entity offers to issue, in exchange for the Company's shares, shares to be listed on the same regulated market(s) on which the Company's shares are listed;

- a merger in which the Company is not the surviving entity (unless the shares or other equity securities of such entity are listed on the New York or London stock exchanges);
- a sale, lease, exchange or other disposition of all or substantially all of the Company's assets;
- an amendment to the Company's articles of association that has the effect of materially changing its corporate purpose;
- the relocation of the Company's domicile outside the Grand Duchy of Luxembourg; or

amendments to the Company's articles of association that restrict the rights of its shareholders (excluding any amendments in relation with, or to, the authorized share capital and/or the waiver or suppression of any preferential subscription rights relating thereto).

Dissenting or absent shareholders have the right to have their shares repurchased by the Company at (i) the average market value of the shares over the 90 calendar days preceding the applicable general shareholders' meeting or (ii) in the event that the Company's shares are not traded on any regulated market, the amount that results from applying the proportion of the Company's equity that the shares being sold represent over the Company's net worth as determined in its last consolidated financial statements approved by the shareholders or in its last interim consolidated financial statements approved by the board of directors, whichever is more recent. Shareholders who voted in favor of the relevant resolution are not entitled to exercise this right.

Dissenting or absent shareholders must present their claim within one month following the date of the applicable general shareholders' meeting and supply the Company with evidence of their shareholding at the time of such meeting. The Company must (to the extent permitted by applicable laws and regulations and in compliance therewith) repurchase its shares within six months following the date of the applicable general shareholders' meeting. If delisting from one or more, but not all, of the regulated markets where the Company's shares are listed is approved by the shareholders' meeting, only dissenting or absent shareholders with shares held through participants in the local clearing system for that market or those markets can exercise this appraisal right if:

- they held the shares as of the date of the announcement by the Company of its intention to delist or as of the date of publication of the first convening notice for the general shareholders' meeting that approved the delisting;

- they present their claim within one month following the date of the general shareholders' meeting and supply evidence of their shareholding as of the date of the Company's announcement or the publication of the first convening notice to the meeting; and

- the delisting is not being made pursuant to an offer to all of the Company's shareholders made by a business entity subject to common control with the Company, whereby such business entity offers to issue, in exchange for the Company's shares, shares to be listed on the same regulated market(s) on which such dissenting or absent shareholders hold their shares through participants in the local clearing system for that market or markets.

In the event a shareholder exercises its appraisal right, applicable Luxembourg law provisions shall apply.

#### Distribution of Assets on Winding-up

In the event of the Company's liquidation, dissolution or winding-up, the net assets remaining after allowing for the payment of all debts, charges and expenses shall be paid out to holders of the Company's shares in proportion to their respective holdings.

#### Transferability and Form

The Company's articles of association do not contain any redemption or sinking fund provisions, nor do they impose any restrictions on the transfer of shares. The shares are issuable in registered form only.

The ownership of registered shares is evidenced by the inscription of the name of the shareholder, the number of shares held by such shareholder and the amount paid on each share in the Company's shareholders' register. In addition, the Company's shares may be held through fungible securities accounts with financial institutions or other professional depositaries. Shares held through fungible securities accounts have the same rights and obligations as shares recorded



in the Company's shareholders' register.

Shares held through fungible securities accounts may be transferred in accordance with customary procedures for the transfer of securities in book-entry form. Shares that are not held through fungible securities accounts may be transferred by a written statement of transfer signed by both the transferor and the transferee or their respective duly appointed attorney-in-fact and recorded in the Company's shareholders' register. The transfer of shares may also be made in accordance with the provisions of Article 1690 of the Luxembourg Civil Code. As evidence of the transfer of registered shares, the Company may also accept any correspondence or other documents evidencing the agreement between transferor and transferee as to the transfer of registered shares.

### Repurchase of Company Shares

The Company may repurchase its own shares in the cases and subject to the conditions set by the Luxembourg Company Law and, in the case of acquisitions of shares or ADSs made through the NYSE, with any applicable laws and regulations of such market. See Item 16.E. “Purchases of Equity Securities by the Issuer and Affiliated Purchasers” for further information on the authorization granted on May 6, 2015, by the Company’s annual general shareholders’ meeting to the Company or its subsidiaries to repurchase the Company’s shares, including shares represented by ADRs.

### Limitation on Securities Ownership

There are no limitations currently imposed by Luxembourg law or the articles of association on the rights of non-resident shareholders to hold or vote the Company’s shares.

### Change in Control

None of our outstanding securities has any special control rights. The Company’s articles of association do not contain any provision that would have the effect of delaying, deferring or preventing a change in control of the Company and that would operate only with respect to a merger, acquisition or corporate restructuring involving the Company or any of its subsidiaries. In addition, the Company does not know of any significant agreements or other arrangements to which the Company is a party and which take effect, alter or terminate in the event of a change of control of the Company. There are no agreements between the Company and members of its board of directors or employees providing for compensation if they resign or are made redundant without reason, or if their employment ceases following a change in control of the Company.

There are no rights associated with the Company’s shares other than those described above.

### C. Material Contracts

For a discussion of any material contract entered into by us outside of the ordinary course of business during the last two years, see Item 4. “Information on the Company—B. Business Overview—Raw Materials, Slabs, Energy and Other Inputs.”

### D. Exchange Controls

Many of the countries which are important markets for us or in which we have substantial assets have a history of substantial government intervention in currency markets, volatile exchange rates and government-imposed currency controls. These include Mexico, Brazil and Argentina. For additional information regarding Ternium’s ability to hedge against exchange rate fluctuations, see Item 3. “Key Information—D. Risk Factors—Risks Relating to our Business—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.”

#### Mexico

Historically, the Mexican economy has suffered balance of payment deficits and shortages in foreign exchange reserves. While the Mexican government does not currently restrict the ability of Mexican or foreign persons or entities to convert Mexican pesos to U.S. dollars and the terms of NAFTA—to which Mexico is a signatory—generally prohibit exchange controls, the Mexican government could institute a restrictive exchange control policy in the future.

Brazil

Before March 2005, there were two legal foreign exchange markets in Brazil, the commercial market and the floating market. The difference between these two markets was the type of transaction that could be performed through each market.

On March 4, 2005, the Brazilian National Monetary Council, or CMN, through CMN Resolution N. 3,265 (revoked and replaced by CMN Resolution N. 3,568, of May 29, 2008), introduced a single foreign exchange market and abolished the legal differences between the referred Commercial and Floating Markets. Among the modifications to

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foreign exchange market rules is a greater freedom to remit funds abroad through the foreign exchange market. On the other hand, the so-called “CC5-Accounts”, which are bank accounts in Brazilian reais held in Brazil by foreign entities, may no longer be used to transfer funds on behalf of third parties.

On March 24, 2010, the CMN approved Resolution No. 3,844, adopting a series of measures to consolidate and simplify the Brazilian foreign exchange regulations. These changes are expected to reduce the effective cost of foreign exchange transactions and the related administrative expenses for both the public and private sectors as well as to provide more legal certainty to the parties to such transaction.

In the past, the Brazilian central bank has intervened occasionally to control unstable movements in foreign exchange rates. We cannot predict whether the central bank or the Brazilian government will continue to let the real float freely or will intervene in the exchange rate market through the return of a currency band system or otherwise. The real may depreciate or appreciate against the U.S. dollar.

#### Argentina

From 2002 through the end of 2015, the Argentine government maintained a “dirty” flotation of the Argentine peso to U.S. dollar exchange rate through frequent interventions in the market. Since December 2015, following a devaluation of the Argentine peso against the U.S. dollar of approximately 34%, the current administration has been endorsing a floating rate environment with limited government intervention. Argentina often experiences high exchange rate volatility. Between 2011 and the end of its term in December 2015, the former administration imposed several formal and informal foreign exchange restrictions affecting the free flow of capital, particularly on payments of dividends, imports of goods and services and royalties. These restrictions changed frequently, driven mainly by the intention of that administration to control the volatility of the Argentine peso to U.S. dollar exchange rate and to try to impede the flight of capital from Argentina. These informal controls on foreign exchange transactions ended soon after the current administration took office in December 2015, and the formal controls have been gradually relaxed until being almost completely lifted by January 2017. There are currently no amount limits for the purchase of foreign currency by Argentine residents (individuals or legal entities) for investment purposes, either locally or abroad. The only remaining requirements for the purchase of foreign currency to make payments of imports of goods and services, royalties, dividends and foreign financial debt entail compliance with certain central bank information systems on foreign indebtedness and direct investments. Argentine residents are no longer required to repatriate the proceeds from exports. For additional information regarding factors affecting the Argentine economy, see Item 3. “Key Information—D. Risk Factors—Risks Relating to the Countries in Which We Operate—Argentina.”

There can be no assurance that foreign exchange and capital controls will not be reestablished in the future by the Argentine government, or that additional restrictions of that kind will not be imposed, which 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 example, to fund the payment of dividends or to undertake investments and other activities that require offshore payments.

#### Colombia

Under Colombian foreign exchange regulations, payments in foreign currency related to certain foreign exchange transactions must be conducted through the commercial exchange market, by means of an authorized financial intermediary, and the payment must be declared to the Colombian central bank. This mechanism applies to payments in connection with, among others, imports and exports of goods, foreign loans and related financing costs, investment of foreign capital and the remittances of profits thereon, investment in foreign securities and assets and endorsements and guarantees in foreign currency. Transactions through the commercial exchange market are made at market rates

freely negotiated with the authorized intermediaries.

E. Taxation

The following discussion of the material Luxembourg and U.S. federal income tax consequences of an investment in our ADSs is based upon laws and relevant interpretations thereof in effect as of the date of this annual report, all of which are subject to change. This discussion does not address all possible tax consequences relating to an investment in our ADSs, such as the tax consequences under U.S. state and local tax laws.

## Grand Duchy of Luxembourg

This section describes the material Luxembourg tax consequences of owning or disposing of shares or ADSs. It is not intended to be, nor should it be construed to be, legal or tax advice. You should, therefore, consult your own tax advisor regarding local or foreign tax consequences, including Luxembourg tax consequences of owning and disposing of shares or ADSs in your particular circumstances.

As used herein, a “Luxembourg individual” means an individual resident in Luxembourg who is subject to personal income tax (impôt sur le revenu) on his or her worldwide income from Luxembourg or foreign sources, and a “Luxembourg corporate holder” means a company (that is, a fully taxable collectivité within the meaning of Article 159 of the Luxembourg Income Tax Law) resident in Luxembourg subject to Luxembourg corporate income tax (impôt sur le revenu des collectivités) and Luxembourg municipal business tax (impôt commercial communal) on its worldwide income from Luxembourg or foreign sources. For the purposes of this summary, Luxembourg individuals and Luxembourg corporate holders are collectively referred to as “Luxembourg Holders”. A “non-Luxembourg Holder” means any investor in shares or ADSs of the Company other than a Luxembourg Holder.

### Corporate Reorganization

The Company was established as a Luxembourg société anonyme holding under Luxembourg’s 1929 holding company regime. Until termination of such regime on December 31, 2010, holding companies incorporated under the 1929 regime (including the Company) were exempt from Luxembourg corporate income tax, Luxembourg municipal business tax, Luxembourg net wealth tax and Luxembourg withholding tax over dividends distributed to shareholders.

On January 1, 2011, the Company became an ordinary public limited liability company (société anonyme) and, effective as from that date, the Company is subject to all applicable Luxembourg taxes (including, among others, Luxembourg corporate income tax on its worldwide income), and its dividend distributions will generally be subject to Luxembourg withholding tax. However, dividends received by the Company from subsidiaries, including, among others, subsidiaries that are (i) subject to article 2 of the European Union Council Directive dated November 30, 2011 concerning the common fiscal regime applicable to parent and subsidiary companies of different member states (2011/96/UE) as amended or (ii) non-resident capital companies subject in their country of residence to a profit tax comparable with the Luxembourg corporate income tax will continue to be exempt from Luxembourg corporate income tax and Luxembourg municipal business tax under the Luxembourg domestic participation exemption pursuant to article 166 of the Luxembourg Income Tax Law.

In light of the impending termination of Luxembourg’s 1929 holding company regime, in the fourth quarter of 2010, the Company carried out a multi-step corporate reorganization, which included, among other transactions, the contribution of most of the Company’s assets and liabilities to a wholly-owned, newly-incorporated Luxembourg subsidiary and the restructuring of indirect holdings in certain subsidiaries. The first phase of the corporate reorganization was completed in December 2010, and resulted in a non-taxable revaluation of the accounting value (under Luxembourg GAAP) of the Company’s assets, in accordance with the applicable legal provisions. The second phase of the reorganization was completed in 2011.

Following the completion of the first phase of the corporate reorganization, and upon its conversion into an ordinary Luxembourg holding company, the Company, according to applicable law, recorded a special reserve in its tax balance sheet. Dividend distributions for the foreseeable future will be imputed to the special reserve and therefore should not be subject to Luxembourg withholding tax under current Luxembourg tax law.

### Tax regime applicable to realized capital gains

#### Luxembourg Holders

Luxembourg resident individual holders

Capital gains realized by Luxembourg resident individuals who do not hold their shares or ADSs as part of a trade or business (i.e. capital gains on private assets) and who hold (together, directly or indirectly, with his or her spouse or civil partner and underage children) no more than 10% of the share capital of the Company at any time during the five-year period preceding the disposition will only be taxable (at a progressive rate) if they are realized on a sale of shares or ADSs that takes place before their acquisition or within the first six months following their acquisition (i.e.

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speculative gain). After the six-months period, capital gains are not taxed unless the resident individual holds (together, directly or indirectly, with his or her spouse or civil partner and underage children) more than 10% of the share capital of the Company at any time during the five-year period preceding the disposition.

If such shares or ADSs are held as part of a commercial or industrial business, capital gains would be taxable in the same manner as income from such business.

Capital gains realized by Luxembourg resident individuals holding (alone or together with the resident's spouse or civil partner and underage children) directly or indirectly more than 10% of the capital of the Company at any time during the five years prior to the sale, (or if the Luxembourg resident individuals have received the shares for no consideration within the last five years and the former holder held at least 10% in the capital of the company at any moment during said five years) will be taxable at half of the individual's applicable global tax rate (as determined progressively), if a holding period of six months following their acquisition elapsed (21% for 2018). Within the six month period, progressive income tax rates apply (ranging from 0 to 42%\* in 2018).

\*A 7% surcharge for the Employment Fund applies on the income tax due. The surcharge for the Employment Fund amounts to 9% for taxpayer in tax class 1 or 1a with taxable income exceeding EUR 150,000 (EUR 300,000 for taxpayer in tax class 2).

#### Luxembourg resident corporate holders

Capital gains, including currency exchange gains realized upon the disposal of shares or ADSs by a fully taxable resident corporate holder, will in principle be subject to Luxembourg corporate income tax and Luxembourg municipal business tax. The combined applicable rate (including an unemployment fund contribution) for a corporate holder established in Luxembourg City is 26.01% for the fiscal year ending 2018. An exemption from such taxes may be available to the Luxembourg resident corporate holder pursuant to Article 1 of the Grand Ducal Decree dated December 21, 2001 as amended, in combination with article 166 of the Luxembourg Income Tax Law subject to the fulfillment of the conditions set forth therein.

#### Non-Luxembourg Holders

##### Non-Luxembourg individual holders

An individual who is a non-Luxembourg Holder of shares or ADSs (and who does not have a permanent establishment, a permanent representative or a fixed place of business in Luxembourg) will only be subject to Luxembourg taxation on capital gains arising upon disposal of such shares or ADSs if such holder has (alone or together with his or her spouse, civil partner and underage children) directly or indirectly held more than 10% of the capital of the Company at any time during the past five years preceding the disposal, and either (i) such non-Luxembourg Holder has been a resident of Luxembourg for tax purposes for at least 15 years and has become a non-resident within the last five years preceding the realization of the gain, subject to any applicable tax treaty, or (ii) the disposal of shares or ADSs occurs within six months from their acquisition (or prior to their actual acquisition), subject, however, to any applicable tax treaty.

##### Non-Luxembourg corporate holders

A corporate non-Luxembourg Holder (that is, a collectivité within the meaning of Article 159 of the Luxembourg Income Tax Law), which has a permanent establishment, a permanent representative or a fixed place of business in Luxembourg to which shares or ADSs are attributable, will bear Luxembourg corporate income tax and Luxembourg municipal business tax on a gain realized on a disposal of such shares or ADSs as set forth above for a Luxembourg corporate holder. However, capital gains, including currency exchange gains, realized on the sale of the shares or ADSs may benefit from the full exemption provided for by Article 1 of the Grand Ducal Decree dated December 21,



2001 as amended, in combination with Article 166 of the Luxembourg Income Tax Law subject in each case to fulfillment of the conditions set out therein.

A corporate non-Luxembourg Holder, which has no permanent establishment, permanent representative or fixed place of business in Luxembourg to which the shares or ADSs are attributable, will bear non-resident capital gains tax on a gain realized on a disposal of such shares or ADSs under the same conditions applicable to an individual non-Luxembourg Holder, as set out above.

## Tax regime applicable to distributions

### Withholding tax

Distributions to holders are in principle subject to a 15% Luxembourg withholding tax computed on the gross amount distributed. The rate of the withholding tax may be reduced pursuant to double tax treaty existing between Luxembourg and the country of residence of the relevant holder, subject to the fulfillment of the conditions set forth therein. However, distributions imputed for tax purposes to the special reserve (please see above paragraph “corporate reorganization”) should be exempt from Luxembourg withholding tax under the current tax law.

Nevertheless, no withholding tax applies if the distribution is made to (as far as relevant in the case at hand):

- a Luxembourg resident corporate holder (that is, a fully taxable collectivité within the meaning of article 159 of the Luxembourg Income Tax Law),  
an undertaking of collective character which is resident of a Member State of the European Union and is referred to by article 2 of the European Union Council Directive of November 30, 2011 concerning the common fiscal regime applicable to parent and subsidiary companies of different member states (2011/96/UE) as amended, (subject to the general anti-abuse rule provided for by Council Directive 2015/121/EU as implemented into Luxembourg law),  
a capital company or a cooperative company resident in Norway, Iceland or Liechtenstein and subject to a tax comparable to corporate income tax as provided by the Luxembourg Income Tax Law,  
a capital company resident in Switzerland which is subject to corporate income tax in Switzerland without benefiting from an exemption,  
an undertaking with a collective character subject to a tax comparable to corporate income tax as provided by the Luxembourg Income Tax Law which is resident in a country that has concluded a double tax treaty with Luxembourg, and  
a Luxembourg permanent establishment of one of the above-mentioned categories, provided each time that at the date of payment, the holder holds or commits to hold directly (or through a company regarded as tax transparent from a Luxembourg tax perspective), during an uninterrupted period of at least twelve months, shares or ADSs representing at least 10% of the share capital of the Company or acquired for an acquisition price of at least EUR 1,200,000.

### Luxembourg Holders

With the exception of Luxembourg corporate holders benefiting from the exemption referred to above, Luxembourg individual holders, and Luxembourg corporate holders fully subject to Luxembourg corporate tax, must include the distributions paid on the shares or ADSs in their taxable income, 50% of the amount of such dividends being exempt from tax. The applicable withholding tax can, under certain conditions, entitle the relevant Luxembourg Holder to a tax credit.

### Non Luxembourg Holders

Non-Luxembourg Holders of shares or ADSs and who do not have a permanent establishment, a permanent representative or a fixed place of business in Luxembourg to which the shares or ADSs would be attributable are not liable for any Luxembourg tax on dividends paid on the shares or ADSs, other than a potential withholding tax as described above.

### Net wealth tax

#### Luxembourg Holders

Luxembourg net wealth tax will not be levied on a Luxembourg Holder with respect to the shares or ADSs held unless (i) the Luxembourg Holder is a legal entity subject to net wealth tax in Luxembourg; or (ii) the shares or ADSs are attributable to an enterprise or part thereof which is carried on through a permanent establishment, a fixed place of business or a permanent representative in Luxembourg.

Net wealth tax is levied annually at the rate of 0.5% for taxable net wealth not exceeding EUR 500,000,000 and at a rate of 0.05% for the net wealth exceeding EUR 500,000,000, of enterprises resident in Luxembourg, as determined for net wealth tax purposes. The shares or ADSs may be exempt from net wealth tax subject to the conditions set forth by Paragraph 60 of the Law of October 16, 1934 on the valuation of assets (Bewertungsgesetz), as amended.

A minimum net wealth tax charge applies as of January 1, 2016 for all corporate entities having their statutory seat or central administration in Luxembourg. Subject to certain conditions, the amount of minimum net wealth tax may vary.

#### Non-Luxembourg Holders

Luxembourg net wealth tax will not be levied on a non-Luxembourg Holder with respect to the shares or ADSs held unless the shares or ADSs are attributable to an enterprise or part thereof which is carried on through a permanent establishment or a permanent representative in Luxembourg. The shares or ADSs may be exempt from net wealth tax subject to the conditions set forth by Paragraph 60 of the Law of October 16, 1934 on the valuation of assets (Bewertungsgesetz), as amended.

#### Stamp and registration taxes

No registration tax or stamp duty will be payable by a holder of shares or ADSs in Luxembourg solely upon the disposal of shares or ADSs by sale or exchange.

#### Estate and gift taxes

No estate or inheritance tax is levied on the transfer of shares or ADSs upon the death of a holder of shares or ADSs in cases where the deceased was not a resident of Luxembourg for inheritance tax purposes and no gift tax is levied upon a gift of shares or ADSs if the gift is not passed before a Luxembourg notary or recorded in a deed registered in Luxembourg.

Where a holder of shares or ADSs is a resident of Luxembourg for tax purposes at the time of his death, the shares or ADSs are included in its taxable estate for inheritance tax or estate tax purposes.

#### United States federal income taxation

This section describes the material U.S. federal income tax consequences to a U.S. holder (as defined below) of owning ADSs and does not discuss all of the tax consequences that may be relevant to you in light of your individual circumstances, including foreign, state or local tax consequences, estate and gift tax consequences, and tax consequences arising under the Medicare contribution tax on net investment income or the alternative minimum tax. It applies to you only if you hold your ADSs as capital assets for tax purposes. This section does not apply to you if you are a member of a special class of holders subject to special rules, including:

- a dealer in securities,
- a bank,
- a trader in securities that elects to use a mark-to-market method of accounting for securities holdings,
- a tax-exempt organization,
- a person who invests through a pass-through entity, including a partnership,
- a life insurance company,
- a former citizen or long-term resident of the United States,
- a person that actually or constructively owns 10% or more of the combined voting power of our voting stock or of the total value of our stock (including ADSs),
- a person that holds ADSs as part of a straddle or a hedging or conversion transaction,
- a person that purchases or sells ADSs as part of a wash sale for tax purposes, or
- a person whose functional currency is not the U.S. dollar.

This section is based on the Internal Revenue Code of 1986, as amended, its legislative history, existing and proposed regulations, published rulings and court decisions, all as currently in effect, as well as on the Convention Between the Government of the Grand Duchy of Luxembourg and the Government of the United States of America for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with respect to Taxes on Income and Capital (the "Treaty"). These authorities are subject to change, possibly on a retroactive basis. In addition, this section is based in part upon the assumption that each obligation in the ADS deposit agreement and any related agreement will be performed in accordance with its terms.

If an entity or arrangement that is treated as a partnership for U.S. federal income tax purposes holds the ADSs, the U.S. federal income tax treatment of a partner will generally depend upon the status of the partner and the activities of the partnership. Each such partner holding the ADSs is urged to consult his, her or its own tax advisor.

You are a U.S. holder if you are a beneficial owner of ADSs and you are, for U.S. federal income tax purposes:

- an individual citizen or resident of the United States,
- a domestic corporation,
- an estate whose income is subject to U.S. federal income tax regardless of its source, or
- a trust if (i) a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons are authorized to control all substantial decisions of the trust or (ii) the trust has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

You should consult your own tax advisor regarding the U.S. federal, state and local and other tax consequences of owning and disposing of ADSs in your particular circumstances.

This discussion addresses only U.S. federal income taxation.

In general, and taking into account the earlier assumptions, for U.S. federal income tax purposes, if you hold ADRs evidencing ADSs, you will be treated as the owner of the shares represented by those ADRs. Exchanges of shares for ADRs, and ADRs for shares, generally will not be subject to U.S. federal income tax.

The tax treatment of your ADSs will depend in part on whether or not we are classified as a passive foreign investment company, or PFIC, for U.S. federal income tax purposes. Except as discussed below under “-PFIC Rules”, this discussion assumes that we are not classified as a PFIC for United States federal income tax purposes.

#### Taxation of distributions

Under the U.S. federal income tax laws, if you are a U.S. holder, the gross amount of any distribution we pay out of our current or accumulated earnings and profits (as determined for U.S. federal income tax purposes), other than certain pro-rata distributions of our shares, will be treated as a dividend that is subject to U.S. federal income taxation. If you are a noncorporate U.S. holder, dividends paid to you that constitute qualified dividend income will be taxable to you at the preferential rates applicable to long-term capital gains provided that you hold ADSs for more than 60 days during the 121-day period beginning 60 days before the ex-dividend date and meet other holding period requirements. Dividends we pay with respect to the ADSs generally will be qualified dividend income provided that, in the year that you receive the dividend, the ADSs are readily tradable on an established market in the United States. Our ADSs are listed on the New York Stock Exchange and we therefore expect that dividends we pay with respect to the ADSs generally will be qualified dividend income.

You must generally include any Luxembourg tax withheld from the dividend payment in this gross amount even though you do not in fact receive it. The dividend is taxable to you when the depository receives the dividend, actually or constructively.

The dividend will not be eligible for the dividends-received deduction generally allowed to U.S. corporations in respect of dividends received from other U.S. corporations. Distributions in excess of current and accumulated earnings and profits, as determined for U.S. federal income tax purposes, will be treated as a non-taxable return of capital to the extent of your basis in the ADSs and thereafter as capital gain. However, we do not expect to calculate earnings and profits in accordance with U.S. federal income tax principles. Therefore, you should expect that a distribution will generally be treated as a dividend (as discussed above).

The amount of any dividend paid in foreign currency will equal the U.S. dollar value of the foreign currency received calculated by reference to the exchange rate in effect on the date the dividend is received by the depositary, regardless of whether the foreign currency is converted into U.S. dollars. Generally, any gain or loss resulting from currency exchange fluctuations during the period from the date you include the dividend payment in income to the date you convert the payment into U.S. dollars will be treated as ordinary income or loss and will not be eligible for the special tax rate applicable to qualified dividend income. The gain or loss generally will be income or loss from sources within the United States for foreign tax credit limitation purposes.

Dividends will be income from sources outside the United States and generally will be “passive” income for purposes of computing the foreign tax credit allowable to you. However, if (a) we are 50% or more owned, by vote or value, by U.S. persons and (b) at least 10% of our earnings and profits are attributable to sources within the United States, then for foreign tax credit purposes, a portion of our dividends would be treated as derived from sources within the United States. With respect to any dividend paid for any taxable year, the U.S. source ratio of our dividends for foreign tax credit purposes would be equal to the portion of our earnings and profits from sources within the United States for such taxable year, divided by the total amount of our earnings and profits for such taxable year.

Subject to certain limitations, the Luxembourg tax withheld from distributions on your ADSs in accordance with the Treaty and paid over to Luxembourg will be creditable or deductible against your U.S. federal income tax liability. Special rules apply in determining the foreign tax credit limitation with respect to dividends that are subject to the preferential tax rates. To the extent a reduction or refund of the tax withheld is available to you under Luxembourg law or under the Treaty, the amount of tax withheld that could have been reduced or that is refundable will not be eligible for credit against your U.S. federal income tax liability.

In certain circumstances, if you have held ADSs for less than a specified minimum period during which you are not protected from risk of loss, or are obligated to make payments related to the dividends, you will not be allowed a foreign tax credit for foreign taxes imposed on dividends that we pay.

The rules governing the foreign tax credit are complex. You are urged to consult your tax advisors regarding the availability of the foreign tax credit under your particular circumstances.

#### Taxation of capital gains

If you are a U.S. holder and you sell or otherwise dispose of your ADSs, you will recognize capital gain or loss for U.S. federal income tax purposes equal to the difference between the U.S. dollar value of the amount that you realize and your tax basis, determined in U.S. dollars, in your ADSs. Capital gain of a noncorporate U.S. holder is generally taxed at preferential rates where the property is held for more than one year. The gain or loss will generally be income or loss from sources within the United States for foreign tax credit limitation purposes.

#### PFIC Rules.

Based on the Company’s current and expected income and assets, we believe the ADSs should not currently be treated as stock of a PFIC for U.S. federal income tax purposes and we do not expect to become a PFIC in the foreseeable future. However this conclusion is a factual determination that is made annually and thus may be subject to change. It is therefore possible that we could become a PFIC in a future taxable year. If we were to be treated as a PFIC, gains realized on the sale or other disposition of your ADSs would in general not be treated as capital gain. Furthermore, if you are a U.S. holder, unless you are permitted to elect and you do elect to be taxed annually on a mark-to-market basis with respect to the ADSs, upon sale or disposition of ADSs you would be treated as if you had realized such gain and certain “excess distributions” ratably over your holding period for the ADSs and would be taxed at the highest tax rate in effect for each such year to which the gain was allocated, together with an interest charge in respect of the tax attributable to each such year. With certain exceptions, your ADSs will generally be treated as stock in a PFIC if we were a PFIC at any time during your holding period in your ADSs. Dividends that you receive from us will not be eligible for the special tax rates applicable to qualified dividend income if we are a PFIC (or are treated as a PFIC with respect to you) either in the taxable year of the distribution or the preceding taxable year, but instead will be taxable at rates applicable to ordinary income.

#### F. Dividends and Paying Agents



Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on display

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We are required to file annual and special reports and other information with the SEC. The SEC maintains a website at <http://www.sec.gov> which contains reports and other information regarding registrants that file electronically with the SEC.

We are subject to the reporting requirements of the Exchange Act, as applied to foreign private issuers. Because we are a foreign private issuer, the SEC's rules do not require us to deliver proxy statements or to file quarterly reports. In addition, our "insiders" are not subject to the SEC's rules that prohibit short-swing trading. We prepare quarterly and annual reports containing consolidated financial statements in accordance with IFRS. Our annual consolidated financial statements are certified by an independent accounting firm. We submit quarterly financial information to the SEC on Form 6-K simultaneously with or promptly following the publication of that information in Luxembourg or any other jurisdiction in which the Company's securities are listed, and will file annual reports on Form 20-F within the time period required by the SEC, which is currently four months from the end of the fiscal year on December 31. Reports and other information filed electronically with the SEC are available at the SEC's website.

As a foreign private issuer under the Securities Act, we are not subject to the proxy rules of Section 14 of the Exchange Act or the insider short-swing profit reporting requirements of Section 16 of the Exchange Act.

We have appointed the BNY Mellon to act as depositary for our ADSs. During the time the deposit agreement remains in force, we will furnish the depositary with:

- our annual reports, and
- summaries of all notices of general meetings of shareholders and other reports and communications that are made generally available to our shareholders.

The depositary will, as provided in the deposit agreement, if we so request, arrange for the mailing of summaries in English of the reports and communications to all record holders of our ADSs. Any record holder of ADSs may read the reports, notices, or summaries thereof, and communications at the depositary's office located at 101 Barclay Street, 22W, New York, NY 10286.

Whenever a reference is made in this annual report to a contract or other document, please be aware that such reference is not necessarily complete and that you should refer to the exhibits that are a part of this annual report for a copy of the contract or other document.

## I. Subsidiary Information

Not applicable.

### Item 11. Quantitative and Qualitative Disclosures About Market Risk

The multinational nature of our transactions, operations and customer base expose us to the risk of changes in interest rates, foreign currency exchange rates and commodity prices. We selectively manage these exposures through the use of derivative instruments to mitigate market risk and interest rate costs. In addition, we may use derivative instruments embedded in investment instruments, in compliance with Ternium's policy for financial investments. We do not use derivative financial instruments for other purposes. In addition, in the ordinary course of business we also face risks with respect to financial instruments that are either non-financial or non-quantifiable. Such risks principally include country risk and credit risk and are not presented in the following analysis. For additional information about our financial risk management, see note 29 to our consolidated financial statements included elsewhere in this annual report.

The following tables provide a breakdown of Ternium's debt instruments as of December 31, 2018, by type of interest rate fixing mechanism and year of maturity. The following information should be read together with note 29 "Financial

Risk Management” to our consolidated financial statements included elsewhere in this annual report.

At December 31, 2018 In thousands of U.S. dollars	Expected maturity in the year ending December 31,						Total
	2019	2020	2021	2022	2023	Thereafter	
<b>Non-current Debt</b>							
Fixed Rate		19,975	—	—	—	—	19,975
Floating Rate		508,098	509,157	510,257	61,571	28,042	1,617,126
<b>Current Debt</b>							
Fixed Rate	269,908	—	—	—	—	—	269,908
Floating Rate	129,948	—	—	—	—	—	129,948
<b>Total <sup>(1) (2)</sup></b>	<b>399,856</b>	<b>528,073</b>	<b>509,157</b>	<b>510,257</b>	<b>61,571</b>	<b>28,042</b>	<b>2,036,957</b>

(1) Borrowings are primarily bank borrowings. For further information, see Item 5. “Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Principal Sources of Funding—Financial Liabilities.”

(2) As most borrowings incorporate floating rates that approximate market rates and the contractual repricing occurs mostly every one, three or six months, the fair value of the borrowings approximates their carrying amount and it is not disclosed separately.

Management maintains sufficient cash and marketable securities and credit facilities to finance normal operations. Management monitors rolling forecasts of the group’s liquidity reserve on the basis of expected cash flow. The weighted average interest rate of Ternium’s debt was 3.65% at December 31, 2018. This figure incorporates instruments denominated mainly in U.S. dollars, does not include the effect of derivative financial instruments and was calculated using the rates set for each instrument in its corresponding currency and weighted using the dollar-equivalent outstanding principal amount of said instruments as of December 31, 2018.

#### Total Debt by Currency as of December 31, 2018

In thousands of U.S. dollars	
U.S. dollar (\$)	2,009,947
Other	27,010
<b>Total</b>	<b>2,036,957</b>

#### Interest Rate Exposure Risk

Ternium manages its exposure to interest rate volatility through its financing alternatives and hedging instruments. Borrowings with floating rates expose the Company to the risk of increased interest expense in the event of higher market interest rates, while borrowings with fixed rates expose the Company to variations in the instruments’ fair value. The Company’s interest-rate risk mainly arises from long-term borrowings that bear floating-rate interest. Ternium’s total floating interest rate debt amounted to \$1.7 billion (86% of total borrowings) for the year ended December 31, 2018. The interest rate on \$50.0 million of this debt is fixed through swaps, as described below.

#### Interest Rate Derivative Contracts

During 2012 and 2013, Ternium entered into several interest rate forward starting swap agreements that fix the interest rate to be paid over an aggregate amount of \$100 million, at an average rate of 1.92%. These agreements became effective in July 2014, will terminate in July 2022 and have been accounted for as cash flow hedges. As of December 31, 2018, the after-tax cash flow hedge reserve related to these agreements amounted to positive \$0.5 million.

Foreign Exchange Exposure Risk

Ternium operates and sells its products in different countries, and as a result is exposed to foreign exchange rate volatility. Ternium's subsidiaries may use derivative contracts in order to hedge their exposure to exchange rate risk derived from their trade and financial operations. A significant portion of Ternium's business is carried out in currencies other than the U.S. dollar, Ternium's reporting currency. As a result of this foreign currency exposure, exchange rate fluctuations impact Ternium's results as reported in its income statement and statement of

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comprehensive income in the form of both translation and transaction risk. Translation risk is the risk that Ternium's consolidated financial statements for a particular period or as of a certain date may be affected by changes in the prevailing rates of the various functional currencies of the reporting subsidiaries against the U.S. dollar. Transaction risk is the risk that the value of transactions executed in currencies other than the subsidiary's functional currency may vary according to currency fluctuations.

Ternium's policy is to minimize the impact of fluctuations in the value of positions in currencies other than U.S. dollar with respect to the U.S. dollar, with the exception of the currencies of countries where it has operations in Latin America, in which Ternium may, from time to time, choose not to hedge operational short exposures to such currencies. Ternium's subsidiaries monitor their net operating cash flows in currencies other than the U.S. dollar, and analyze potential hedging strategies according to market conditions. This hedging can be carried out by netting operational positions or by using financial derivatives. However, regulatory or legal restrictions in the countries in which Ternium's subsidiaries operate could limit the extent to which the Company can implement its hedging policy.

Ternium has subsidiaries whose net assets are exposed to currency translation risk, some of which may impact net income. The fact that some subsidiaries have functional currencies other than the U.S. dollar may, at times, distort the results of our hedging efforts as reported under IFRS.

The following table shows a breakdown of Ternium's assessed financial position exposure to currency risk as of December 31, 2018. These balances include intercompany positions where the intervening parties have different functional currencies.

Million of U.S. dollars exposure to:	Functional Currency
	\$ ARP
U.S. dollar (\$)	(n/a) (210)
E.U. euro (EUR)	40 2
Argentine peso (ARS)	— (n/a)
Mexican peso (MXN)	(575) —
Brazilian real (BRL)	(150) (4 )
Colombian peso (COP)	24 —
Other currencies	(3 ) —

The cumulative devaluation of the Argentine peso against the U.S. dollar during 2018 was 50.5%. The devaluation generated a negative effect of \$387 million, included as currency translation adjustment in other comprehensive income in connection with the valuation of Ternium's Argentine subsidiaries' equities (mainly Ternium Argentina), and a loss of \$188 million included as net foreign exchange results in the income statement, partially offset by a \$173 million positive impact due to inflation adjustment. We estimate that for each 1% depreciation of the Argentine peso against the U.S. dollar, we would have incurred a pre-tax loss of \$2.1 million for the year 2018, and a pre-tax loss of \$1.1 million for the year 2017. This effect would have been offset by the change in the currency translation adjustment recorded in equity.

We estimate that for each 1% depreciation of the Mexican peso against the U.S. dollar, we would have incurred a pre-tax gain of \$5.8 million and \$4.3 million for the years 2018 and 2017, respectively; for each 1% depreciation of the Brazilian real against the U.S. dollar, we would have incurred a pre-tax gain of \$1.5 million and \$1.9 million for the years 2018 and 2017, respectively; and for each 1% depreciation of the Colombian peso against the U.S. dollar, we would have incurred a pre-tax loss of \$0.2 million and \$0.2 million for the years 2018 and 2017, respectively.

We estimate that for each 1% simultaneous depreciation of the Argentine peso, Mexican peso, Brazilian real and Colombian peso against the U.S. dollar with all other variables held constant, total pre-tax income for 2018 would have been \$5.0 million higher (\$4.9 million higher for 2017), as a result of net foreign exchange gains/losses on translation of U.S. dollar-denominated financial position, mainly trade receivables, trade payables, borrowings and other liabilities. Considering the same variation of the currencies against the U.S. dollar of all net investments in non-U.S. dollar operations in 2018 (which amounted to \$1.8 billion), the currency translation adjustment included in total equity would have been \$17.7 million lower (\$11.9 million lower in 2017), arising mainly from the adjustment on translation of the equity related to the Argentine peso and the Brazilian real. For further information on the impact of

currency translation adjustments on Usiminas, see Item 5. “Operating and Financial Review and Prospects—Overview.”

#### Foreign Exchange Derivative Contracts

During 2018, 2017 and 2016, Prosid entered into several non-deliverable forward agreements to reduce the interest rate cost of Ternium Argentina’s debt denominated in Argentine pesos. As of December 31, 2018, Prosid had no outstanding forward agreements.

In addition, during 2018, 2017 and 2016, Ternium Colombia entered into non-deliverable forward agreements to manage the exposure of certain trade receivables denominated in Colombian pesos. As of December 31, 2018, the notional amount on these agreements amounted to \$30.0 million.

Before it was acquired by Ternium, Ternium Brasil entered into non-deliverable forward agreements to manage the exposure of certain financial debt denominated in Brazilian reais. As such financial debt was prepaid during 2017, Ternium Brasil terminated most of its non-deliverable forward agreements prior to their settlement date, and offset the other agreements through opposite non-deliverable forward transactions. As a result, as of December 31, 2018, the net U.S. dollar equivalent notional amount of all outstanding agreements offset each other.

During 2018 and 2017, Ternium Mexico entered into forward agreements in order to manage the exposure resulting from certain commitments denominated in E.U. euros in connection with its capital expenditures program. As of December 31, 2018, the notional amount on these agreements amounted to \$228.2 million.

During 2018, Ternium Investments, entered into several non-deliverable forward and forward agreements in order to manage the exchange rate exposure generated by Ternium Argentina’s debt in Argentine pesos, future payables in E.U. euros related to the investment plan of Ternium Colombia and future receivables in E.U. euros related to sales of Ternium Internacional España. As of December 31, 2018, the notional amount on these agreements amounted to \$28.7 million.

The consolidated net fair value of these exchange rate derivative contracts as of December 31, 2018, was a negative \$12.2 million. For further information on our foreign exchange contracts see note 22 (b) to our consolidated financial statements included in this annual report.

#### Commodities Exposure Risk

In the ordinary course of its operations, Ternium’s subsidiaries purchase raw materials, such as iron ore and coal, slabs, and other commodities, including electricity and natural gas. Commodity prices are generally volatile as a result of several factors, including those affecting supply and demand, political, social and economic conditions, and other circumstances. Ternium monitors its exposure to commodity price volatility on a regular basis and applies customary commodity price risk management strategies. During 2018, 2017 and 2016, Ternium did not hedge any commodity position.

#### Item 12. Description of Securities Other Than Equity Securities

##### A. Debt Securities

Not applicable.

##### B. Warrants and Rights



Not applicable.

C. Other Securities

Not applicable.

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D. American Depositary Shares

According to our deposit agreement, holders of ADSs may have to pay to the Depositary, either directly or indirectly, fees or charges up to the amounts set forth below:

A fee of \$5.00 (or less) per 100 ADSs (or portion of 100 ADSs) for: issuance of ADSs, including issuances resulting from a distribution of shares or rights or other property; and cancellation of ADSs for the purpose of withdrawal, including if the deposit agreement terminates.

A fee of \$0.02 (or less) per ADS for any cash distribution to ADS registered holders.

As necessary, charges for: taxes and other governmental charges the Depositary or the custodian have to pay on any ADS or share underlying an ADS (e.g., share transfer taxes, stamp duty or withholding taxes); and any charges incurred by the Depositary or its agents for servicing the deposited securities.

Registration or transfer fees for transfer and registration of shares on our share register to or from the name of the Depositary or its agent when you deposit or withdraw shares.

Expenses of the Depositary for: cable, telex and facsimile transmissions; and conversion of foreign currency.

A fee equivalent to the fee that would be payable if securities distributed to ADS holders had been shares and the shares had been deposited for issuance of ADSs for distribution of securities distributed to holders of deposited securities which are distributed by the Depositary to ADS registered holders.

As necessary, charges for any costs incurred by the Depositary or its agents for servicing the deposited securities.

The Depositary collects its fees for delivery and surrender of ADSs directly from investors depositing shares or surrendering ADSs for the purpose of withdrawal or from intermediaries acting for them. The Depositary collects fees for making distributions to investors by deducting those fees from the amounts distributed or by selling a portion of distributable property to pay the fees. The Depositary may collect its annual fee for Depositary services by deductions from cash distributions or by directly billing investors or by charging the book-entry system accounts of participants acting for them. The Depositary may generally refuse to provide fee-attracting services until its fees for those services are paid.

Fees payable by the Depositary to the Company

Fees incurred in 2018. In 2018, Ternium received no fees or other direct or indirect payment from the Depositary in connection with the deposited securities.

Fees to be paid in the future. Upon any listing of the Company's shares in a non-U.S. stock exchange allowing for cross-border activity, the Depositary has agreed to reimburse the Company for expenses incurred related to the administration and maintenance of the ADS program, including investor relations expenses, annual NYSE listing fees and other program-related expenses. There are limits on the amount of expenses for which the Depositary will reimburse the Company. The Depositary has also agreed to pay some standard out-of-pocket maintenance costs for the ADSs. The Company does not expect to receive any reimbursement from the Depositary in the near future.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

None.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

None.

Item 15. Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we have evaluated the effectiveness of the design and operation of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of December 31, 2018). Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of December 31, 2018, our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and to ensure that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure. Our disclosure controls and procedures are designed to provide

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reasonable assurance of achieving their objectives. Our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures are effective at a reasonable assurance level.

#### Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Ternium's internal control over financial reporting was designed by management to provide reasonable assurance regarding the reliability of financial reporting and the preparation and fair presentation of its financial statements for external purposes in accordance with IFRS.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or omissions. In addition, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management conducted its assessment of the effectiveness of Ternium's internal control over financial reporting based on the framework in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO").

Based on this assessment, management has concluded that Ternium's internal control over financial reporting, as of December 31, 2018, is effective to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes.

The effectiveness of Ternium's internal control over financial reporting as of December 31, 2018 has been audited by PwC Luxembourg, as stated in their report included herein. See "Attestation Report of Registered Public Accounting Firm."

#### Attestation Report of Registered Public Accounting Firm

See page F-1 of the audited consolidated financial statements included elsewhere in this annual report.

#### Change in Internal Control over Financial Reporting

There were no significant changes in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the year ended December 31, 2018, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

The Company's board of directors has determined that none of the audit committee members meets the attributes defined in Item 16A of Form 20-F for "audit committee financial experts". We do not have an audit committee financial expert because we have concluded that the membership of the audit committee as a whole has sufficient relevant knowledge of the business and financial experience to properly discharge its functions. In addition, the audit committee, from time to time as it deems necessary, may engage persons that meet all of the attributes of an "audit committee financial expert" as consultants.

#### Item 16B. Code of Ethics

The Company has adopted a code of ethics that applies specifically to our principal executive officers, and principal financial and accounting officer and controller, as well as persons performing similar functions. In addition, the Company has adopted a general code of conduct incorporating guidelines and standards of integrity and transparency

applicable to all of our directors, officers and employees. As far as the nature of each relation permits, all principles detailed in the code of conduct also apply to relations with our contractors, subcontractors, suppliers and associated persons.

The text of our code of ethics for senior financial officers and code of conduct for employees is posted on our website at: <http://www.ternium.com/en/about-us/code-of-conduct/>

## Item 16C. Principal Accountant Fees and Services

## Fees Paid to the Company's Principal Accountant

In 2018, PwC Luxembourg served as the principal external auditor for the Company. Fees paid to PwC Luxembourg and other PwC member firms in 2018 and 2017 are detailed below:

	For the year ended December 31,	
In thousands of U.S. dollars	2018	2017
Audit fees	3,937	2,863
Audit-related fees	61	91
Tax fees	281	229
All other fees	425	318
Total	4,704	3,501

## Audit Fees

Audit fees were paid for professional services rendered by the auditors for the audit of the consolidated financial statements and internal control over financial reporting of the Company and the statutory financial statements of the Company and its subsidiaries, and any other audit services required for the U.S. Securities and Exchange Commission or other regulatory filings.

## Audit-Related Fees

Audit-related fees are typically services that are reasonably related to the performance of the audit or review of the consolidated financial statements and are not reported under the audit fee item above. This item includes fees for attestation services on financial information of the Company and its subsidiaries included in their annual reports that are filed with their respective regulators.

## Tax Fees

Tax fees were paid for tax compliance and tax advice professional services.

## All Other Fees

Fees disclosed in the table above under "All other fees" consisted primarily of fees paid for consulting services provided in connection with the review of human resources and cost related processes, and the implementation of human resources related systems.

## Audit Committee's Pre-approval Policies and Procedures

The Company's audit committee is responsible for, among other things, the oversight of the Company's independent auditors. The audit committee has adopted a policy of pre-approval of audit and permissible non-audit services provided by its independent auditors in its charter. Under the policy, the audit committee makes its recommendations through the Board of Directors to the shareholders' meeting concerning the continuing appointment or termination of

the Company's independent auditors. On a yearly basis, the audit committee reviews together with management and the independent auditor, the audit plan, audit related services and other non-audit services and approves the related fees. Any changes to the approved fees must be reviewed and approved by the audit committee. In addition, the audit committee delegated to its Chairman the authority to consider and approve, on behalf of the Audit Committee, additional non-audit services that were not recognized at the time of engagement, which must be reported to the other members of the audit committee at its next meeting. No services outside the scope of the audit committee's approval can be undertaken by the independent auditor.

During 2018, the audit committee did not approve any fees pursuant to the de minimis exception to the pre-approval requirement provided by paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X.

Item 16D. Exemptions from the Listing Standards for Audit Committees

Not applicable.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

On May 6, 2015, the Company's annual general shareholders' meeting granted an authorization to the Company and to the Company's subsidiaries to purchase, acquire or receive, from time to time, shares of the Company, including shares represented by ADRs (collectively, "Securities"), on the following terms and conditions:

The maximum number of Securities acquired pursuant to this authorization may not exceed 10% of the Company's issued and outstanding shares or, in the case of acquisitions made through a stock exchange in which the Securities are traded, such lower amount as may not be exceeded pursuant to any applicable laws or regulations of such market. The number of Securities acquired as a block may amount to the maximum permitted amount of purchases.

The purchases, acquisitions or receipts of Securities may be made in one or more transactions as the Board of Directors of the Company or the board of directors or other governing body of the relevant entity, as applicable, considers advisable.

The purchase price per ADR to be paid in cash may not exceed 125% (excluding transaction costs and expenses), nor may it be lower than 75% (excluding transaction costs and expenses), in each case of the average of the closing prices of the Company's ADRs on the New York Stock Exchange during the five trading days in which transactions in the ADRs were recorded in the New York Stock Exchange preceding (but excluding) the day on which the ADRs are purchased. In the case of purchases of Securities other than in the form of ADRs, the maximum and minimum per Security purchase prices shall be equal to the prices that would have applied in case of an ADR purchase pursuant to the formula above divided by the number of underlying shares represented by an ADR at the time of the relevant purchase. Such maximum and minimum purchase prices shall also apply to over-the-counter or off-market transactions. Compliance with maximum and minimum purchase price requirements in any and all acquisitions made pursuant to this authorization (including, without limitation, acquisitions carried out through the use of derivative financial instruments or option strategies) shall be determined on and as of the date on which the relevant transaction is entered into, irrespective of the date on which the transaction is to be settled.

The above maximum and minimum purchase prices shall, in the event of a change in the par value of the Securities, a capital increase by means of a capitalization of reserves, a distribution of Securities under compensation or similar programs, a stock split or reverse stock split, a distribution of reserves or any other assets, the redemption of capital, or any other transaction impacting on the Company's equity, be adapted automatically, so that the impact of any such transaction on the value of the Securities shall be reflected.

The acquisitions of Securities may not have the effect of reducing the Company's net assets below the sum of the Company's share capital plus its undistributable reserves.

Only fully paid-up Securities may be acquired pursuant to this authorization.

The acquisitions of Securities may be carried out for any purpose, as may be permitted under applicable laws and regulations, including, without limitation, to reduce the share capital of the Company, to offer such Securities to third parties in the context of corporate mergers or acquisitions of other entities or participating interests therein, for distribution to the Company's or the Company's subsidiaries' directors, officers or employees or to meet obligations arising from convertible debt instruments.



The acquisitions of Securities may be carried out by any and all means, as may be permitted under applicable laws and regulations, including through any stock exchange in which the Securities are traded, through public offers to all shareholders of the Company to buy Securities, through the use of derivative financial instruments or option strategies, or in over-the-counter or off-market transactions or in any other manner.

The acquisitions of Securities may be carried out at any time and from time to time during the duration of the authorization, including during a tender offer period, as may be permitted under applicable laws and regulations.

The authorization granted to acquire Securities shall be valid for such maximum period as may be provided for under applicable Luxembourg law as in effect from time to time (such maximum period being, as of to date, five years).

The acquisitions of Securities shall be made at such times and on such other terms and conditions as may be determined by the Board of Directors of the Company or the board of directors or other governing body of the relevant Company subsidiary, provided that any such purchase shall comply with Article 430-15 et seq. of the Luxembourg Company Law (or any successor law) and, in the case of acquisitions of Securities made through a stock exchange in which such Securities are traded, with any applicable laws and regulations of such market.

In the future, we may, on the terms and subject to the conditions above referenced, initiate a share capital repurchase or similar program or engage in other transactions pursuant to which we would repurchase, directly or indirectly, the Company's Securities. In addition, we or our subsidiaries may enter into transactions involving sales or purchases of derivatives or other instruments (either settled in cash or through physical delivery of securities) with returns linked to the Company's Securities. The timing and amount of repurchase transactions under any such program, or sales or purchases of derivatives or other instruments, would depend on market conditions as well as other corporate and regulatory considerations.

#### Item 16F. Change in Registrant's Certifying Accountant

Not applicable.

#### Item 16G. Corporate Governance

The Company's corporate governance practices are governed by the Luxembourg Company Law and the Company's articles of association. As a Luxembourg company listed on the NYSE, the Company is required to comply with some, but not all, of the corporate governance listing standards of the NYSE. The Company, however, believes that its corporate governance practices meet, in all material respects, the corporate governance standards that are generally required for controlled companies by the NYSE.

The following is a summary of the significant ways that the Company's corporate governance practices differ from the corporate governance standards required for controlled companies by the NYSE. The Company's corporate governance practices may differ in non-material ways from the standards required by the NYSE that are not detailed here:

##### Non-management Directors' Meetings

Under NYSE standards, non-management directors must meet at regularly scheduled executive sessions without management present and, if such group includes directors who are not independent, a meeting should be scheduled once per year including only independent directors. Neither Luxembourg law nor the Company's articles of association require the holding of such meetings and the Company does not have a set policy for these meetings. For further information, please see Item 6. "A. Directors, Senior Management and Employees—Board of Directors".

In addition, NYSE-listed companies are required to provide a method for interested parties to communicate directly with the non-management directors as a group. While the Company does not have such a method, it has set up a compliance line for investors and other interested parties to communicate their concerns directly to the members of the Company's audit committee, all of whom are non-management independent directors.

##### Audit Committee

Under NYSE standards, listed U.S. companies are required to have an audit committee composed of independent directors that satisfies the requirements of Rule 10A-3 promulgated under the Exchange Act. Pursuant to the

Company's articles of association, as supplemented by the audit committee's charter, for as long as the Company's shares are listed on one or more regulated market, the Company must have an audit committee composed of at least three members, all of whom must qualify as independent directors (as defined in the articles of association), provided, however, that the composition and membership of the audit committee shall satisfy such requirements as are applicable to, and mandatory for, audit committees of issuers such as the Company under any law, rule or regulation applicable to the Company, including, without limitation, the applicable laws, rules and regulations of such regulated market. The Company's audit committee, which currently consists of three members, complies with such

requirements. In accordance with NYSE standards, the Company has an audit committee entirely composed of independent directors for purposes of U.S. Securities Exchange Act Rule 10A-3(b)(1). For further information on the Company's audit committee see Item 6. "Directors, Senior Management and Employees—C. Board Practices-Audit Committee".

Under NYSE standards, all audit committee members of listed U.S. companies are required to be financially literate or must acquire such financial knowledge within a reasonable period and at least one of its members shall have experience in accounting or financial administration. In addition, if a member of the audit committee is simultaneously a member of the audit committee of more than three public companies, and the listed company does not limit the number of audit committees on which its members may serve, then in each case the board must determine whether the simultaneous service would prevent such member from effectively serving on the listed company's audit committee and shall publicly disclose its decision. No comparable provisions on audit committee membership exist under applicable Luxembourg law or the Company's articles of association.

#### Standards for evaluating director independence

Under NYSE standards, the board is required, on a case-by-case basis, to express an opinion with regard to the independence or lack of independence of each individual director. Neither Luxembourg law nor the Company's articles of association requires the board to express such an opinion. In addition, the definition of "independent" under the NYSE rules differs in some non-material respects from the definition contained in the Company's articles of association. For further information on the Company's audit committee see Item 6. "Directors, Senior Management and Employees—C. Board Practices-Audit Committee".

#### Audit committee responsibilities

Pursuant to the Company's articles of association, the audit committee shall assist the board of directors in fulfilling its oversight responsibilities relating to the integrity of its financial statements, including periodically reporting to the Board of Directors on its activity and the adequacy of the Company's system of internal controls over financial reporting. As per the audit committee charter the audit committee shall make recommendations for the appointment, compensation, retention and oversight of, and consider the independence of, the Company's external auditors. The audit committee is required to review material transactions (as defined by the articles of association) between the Company us or its subsidiaries with related parties and also perform the other duties entrusted to it by the board.

The NYSE requires certain matters to be set forth in the audit committee charter of U.S. listed companies. The Company's audit committee charter provides for many of the responsibilities that are expected from such bodies under the NYSE standard; however, due to the Company's equity structure and holding company nature, the charter does not contain all such responsibilities, including provisions related to procedures for the receipt and treatment of complaints (although the Company has established such procedures), funding for payment of administrative expenses and compensation to advisors (although the audit committee has the authority to engage outside advisors), setting hiring policies for employees or former employees of external auditors and an annual performance evaluation of the audit committee. For further information on the Company's audit committee see Item 6. "Directors, Senior Management and Employees—C. Board Practices-Audit Committee".

#### Shareholder voting on equity compensation plans

Under NYSE standards, shareholders must be given the opportunity to vote on equity-compensation plans and material revisions thereto, except for employment inducement awards, certain grants, plans and amendments in the context of mergers and acquisitions, and certain specific types of plans. The Company does not currently offer equity-based compensation to its directors, executive officers or employees, and therefore does not have a policy on

this matter. For further information on the Company's audit committee see Item 6. "Directors, Senior Management and Employees—B. Compensation".

Disclosure of corporate governance guidelines

NYSE-listed companies must adopt and disclose corporate governance guidelines. Neither Luxembourg law nor the Company's articles of association require the adoption or disclosure of corporate governance guidelines. The Company's board of directors follows corporate governance guidelines consistent with its equity structure and holding company nature, but the Company has not codified them and therefore does not disclose them on its website.

Code of business conduct and ethics

Under NYSE standards, listed companies must adopt and disclose a code of business conduct and ethics for directors, officers and employees, and promptly disclose any waivers of the code for directors or executive officers. Neither Luxembourg law nor the Company's articles of association require the adoption or disclosure of such a code of conduct. The Company, however, has adopted a code of conduct that applies to all directors, officers and employees, that is posted on its website and which complies with the NYSE's requirements, except that it does not require the disclosure of waivers of the code for directors and officers. In addition, it has adopted a supplementary code of ethics for senior financial officers which is also posted on its website. For further information, see Item 16B. "Code of Ethics".

Chief Executive Officer certification

A chief executive officer of a U.S. company listed on the NYSE must annually certify that he or she is not aware of any violation by the company of NYSE corporate governance standards. In accordance with NYSE rules applicable to foreign private issuers, the Company's chief executive officer is not required to provide the NYSE with this annual compliance certification. However, in accordance with NYSE rules applicable to all listed companies, the Company's chief executive officer must promptly notify the NYSE in writing after any of the Company's executive officers becomes aware of any noncompliance with any applicable provision of the NYSE's corporate governance standards. In addition, the Company must submit an executed written affirmation upon the occurrence of any of the events listed in the foreign private issuer interim written affirmation form by the NYSE.

Item 16H. Mine Safety Disclosure

Not applicable.

**PART III**

Item 17. Financial Statements

We have responded to Item 18 in lieu of responding to this Item.

Item 18. Financial Statements

See pages F-1 through F-87 of this annual report.

Item 19. Exhibits

Exhibit Number	Description
<u>1.1</u>	Updated and Consolidated Articles of Association of Ternium S.A., dated as of May 2, 2018
<u>2.1</u>	Deposit Agreement entered into between Ternium S.A. and The Bank of New York*
<u>4.1</u>	Shareholders' Agreement, dated January 9, 2006, between Tenaris S.A. and Inversora Siderurgica Limited**
<u>4.3</u>	Shareholders Agreement, dated April 10, 2018, between Nippon Steel & Sumitomo Metal Corporation, Nippon Usiminas Co., Ltd., Ternium Investments S.à r.l., Confab Industrial S.A., Prosid Investments S.A., Ternium Argentina S.A., Previdência Usiminas, Metal One Corporation and Mitsubishi Corporation do Brasil S.A. ***
<u>8.1</u>	List of subsidiaries of Ternium S.A.
<u>12.1</u>	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
<u>12.2</u>	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
<u>13.1</u>	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
<u>13.2</u>	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
*	Incorporated by reference to the Registration Statement on Form F-6, filed by Ternium S.A. on January 11, 2006 (File No. 333-130952).
**	Incorporated by reference to the Registration Statement on Form F-1, filed by Ternium S.A. on January 27, 2006 (File No. 333-130950).
***	Incorporated by reference to the Annual Report on Form 20-F, filed by Ternium S.A. on April 24, 2018 (File No. 001-32734 18771303).

TERNIUM S.A.

Consolidated Financial Statements

as of December 31, 2018 and 2017 and

for the years ended on December 31, 2018, 2017 and 2016

29 Avenue de la Porte-Neuve, 3rd floor

L – 2227

R.C.S. Luxembourg: B 98 668

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Report of Independent Registered Public Accounting Firm  
To the Board of Directors and Shareholders of  
Ternium S.A.

### Opinions on the Consolidated Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial position of Ternium S.A. and its subsidiaries (the “Company”) as of 31 December 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the three years in the period ended 31 December 2018, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of 31 December 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organisations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of 31 December 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended 31 December 2018 in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board and International Financial Reporting Standards as adopted by the European Union. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of 31 December 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

### Basis for Opinions

The Company’s management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the Management’s Report on Internal Control over Financial Reporting appearing under Item 15. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company’s internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

#### Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PricewaterhouseCoopers, Société coopérative

Luxembourg, 16  
April 2019

Represented by

/s/Marc Minet  
Marc Minet

We have served as the Company's auditor since 2011.

PricewaterhouseCoopers, Société coopérative, 2 rue Gerhard Mercator, B.P. 1443, L-1014 Luxembourg  
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R.C.S. Luxembourg B 65 477 - TVA LU25482518

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## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017

and for the years ended December 31, 2018, 2017 and 2016

(All amounts in USD thousands)

## Consolidated Income Statements

		Year ended December 31,		
	Notes	2018	2017	2016
Net sales	5	11,454,807	9,700,296	7,223,975
Cost of sales	6	(8,483,328)	(7,403,025)	(5,384,390)
Gross profit		2,971,479	2,297,271	1,839,585
Selling, general and administrative expenses	7	(876,764)	(824,247)	(687,942)
Other operating income (expenses), net	9	13,656	(16,240)	(9,925)
Operating income		2,108,371	1,456,784	1,141,718
Finance expense	10	(131,172)	(114,583)	(89,971)
Finance income	10	21,236	19,408	14,129
Other financial income (expenses), net	10	(69,640)	(69,915)	37,957
Equity in earnings (losses) of non-consolidated companies	14	102,772	68,115	14,624
Profit before income tax expense		2,031,567	1,359,809	1,118,457
Income tax expense	11	(369,435)	(336,882)	(411,528)
Profit for the year		1,662,132	1,022,927	706,929
Attributable to:				
Owners of the parent		1,506,647	886,219	595,644
Non-controlling interest		155,485	136,708	111,285
Profit for the year		1,662,132	1,022,927	706,929
Weighted average number of shares outstanding		1,963,076,776	1,963,076,776	1,963,076,776
Basic and diluted (losses) earnings per share for profit attributable to the owners of the parent (expressed in \$ per share)		0.77	0.45	0.30

The accompanying notes are an integral part of these consolidated financial statements.

## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017

and for the years ended December 31, 2018, 2017 and 2016

(All amounts in USD thousands)

## Consolidated Statements of Comprehensive Income

	Year ended December 31,		
	2018	2017	2016
Profit for the year	1,662,132	1,022,927	706,929
Items that may be reclassified subsequently to profit or loss:			
Currency translation adjustment	(376,220 )	(95,462 )	(141,665 )
Currency translation adjustment from participation in non-consolidated companies	(73,761 )	(8,931 )	53,858
Changes in the fair value of financial instruments at fair value through other comprehensive income	(1,036 )	—	—
Income tax related to financial instruments at fair value	122	—	—
Changes in the fair value of derivatives classified as cash flow hedges	(132 )	735	641
Income tax relating to cash flow hedges	(73 )	(107 )	(192 )
Other comprehensive income items	(897 )	(96 )	(1,542 )
Other comprehensive income items from participation in non-consolidated companies	499	191	1,054
Items that will not be reclassified subsequently to profit or loss:			
Remeasurement of post employment benefit obligations	(38,263 )	(15,068 )	(14,735 )
Income tax relating to remeasurement of post employment benefit obligations	9,259	4,916	2,571
Remeasurement of post employment benefit obligations from participation in non-consolidated companies	(3,780 )	3,954	(15,817 )
Other comprehensive loss for the year, net of tax	(484,282 )	(109,868 )	(115,827 )
Total comprehensive income for the year	1,177,850	913,059	591,102
Attributable to:			
Owners of the parent	1,176,964	815,434	534,827
Non-controlling interest	886	97,625	56,275
Total comprehensive income for the year	1,177,850	913,059	591,102

The accompanying notes are an integral part of these consolidated financial statements.

## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017

and for the years ended December 31, 2018, 2017 and 2016

(All amounts in USD thousands)

## Consolidated Statements of Financial Position

		Balances as of			
	Notes	December 31, 2018		December 31, 2017	
<b>ASSETS</b>					
Non-current assets					
Property, plant and equipment, net	12	5,817,609		5,349,753	
Intangible assets, net	13	1,012,524		1,092,579	
Investments in non-consolidated companies	14	495,241		478,348	
Other investments	18	7,195		3,380	
Derivative financial instruments	22	818		—	
Deferred tax assets	20	134,224		121,092	
Receivables, net	15	649,447		677,299	
Trade receivables, net	16	4,766	8,121,824	4,832	7,727,283
Current assets					
Receivables, net	15	309,750		362,173	
Derivative financial instruments	22	770		2,304	
Inventories, net	17	2,689,829		2,550,930	
Trade receivables, net	16	1,128,470		1,006,598	
Other investments	18	44,529		132,736	
Cash and cash equivalents	18	250,541	4,423,889	337,779	4,392,520
Non-current assets classified as held for sale			2,149		2,763
			4,426,038		4,395,283
Total Assets			12,547,862		12,122,566
<b>EQUITY</b>					
Capital and reserves attributable to the owners of the parent			6,393,255		5,010,424
Non-controlling interest			1,091,321		842,347
Total Equity			7,484,576		5,852,771
<b>LIABILITIES</b>					
Non-current liabilities					
Provisions	19	643,950		768,517	
Deferred tax liabilities	20	474,431		513,357	
Other liabilities	21	414,541		373,046	
Trade payables		935		2,259	
Finance lease liabilities	23	65,798		69,005	
Borrowings	24	1,637,101	3,236,756	1,716,337	3,442,521
Current liabilities					
Current income tax liabilities		150,276		52,940	
Other liabilities	21	351,216		357,001	
Trade payables		904,171		897,732	

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Derivative financial instruments	22	12,981		6,001	
Finance lease liabilities	23	8,030		8,030	
Borrowings	24	399,856	1,826,530	1,505,570	2,827,274
Total Liabilities			5,063,286		6,269,795
Total Equity and Liabilities			12,547,862		12,122,566

The accompanying notes are an integral part of these consolidated financial statements.

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## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017

and for the years ended December 31, 2018, 2017 and 2016

(All amounts in USD thousands)

## Consolidated Statements of Changes in Equity

	Attributable to the owners of the parent (1)									
	Capital stock (2)	Treasury shares (2)	Initial public offering expenses	Reserves (3)	Capital stock issue discount (4)	Currency translation adjustment	Retained earnings	Total	Non-controlling interest	Total Equity
Balanace at January 1, 2018	2,004,743	(150,000)	(23,295)	1,416,121	(2,324,866)	(2,403,664)	6,491,385	5,010,424	842,347	5,852,771
Impact of adopting IFRS 9 at January 1, 2018 (see note 28)				450			(147)	)303	204	507
Impact of adopting IAS 29 at January 1, 2018 (see note 4 (cc))							421,502	421,502	268,824	690,326
Adjusted Balance at January 1, 2018	2,004,743	(150,000)	(23,295)	1,416,571	(2,324,866)	(2,403,664)	6,912,740	5,432,229	1,111,375	6,543,604
Profit for the period							1,506,647	1,506,647	155,485	1,662,132
Other comprehensive income (loss) for the year										
Currency translation adjustment						(298,813 )		(298,813 )	(151,168 )	(449,981 )
Remeasurement of post employment benefit obligations				(29,418 )				(29,418 )	(3,366 )	(32,784 )
Cash flow hedges and others, net of tax				(288 )				(288 )	83	(205 )
Others				(1,164 )				(1,164 )	(148 )	(1,312 )
	—	—	—	(30,870 )	—	(298,813 )	1,506,647	1,176,964	886	1,177,850



Total  
comprehensive  
income (loss)  
for the year

Dividends paid in cash (5)	(215,938 )	(215,938 )	—	(215,938 )
Dividends paid in cash to non-controlling interest (6)	—	(29,006 )	(29,006 )	(29,006 )
Inflation effect on dividends paid to non-controlling interest (note 4 (cc))	—	8,066	8,066	8,066

Balance at

December 31, 2018 2,004,743 (150,000) (23,295) 1,385,701 (2,324,866) (2,702,477) 8,203,449 6,393,255 1,091,321 7,484,570

(1) Shareholders' equity determined in accordance with accounting principles generally accepted in Luxembourg is disclosed in Note 25 (iii).

(2) The Company has an authorized share capital of a single class of 3.5 billion shares having a nominal value of \$1.00 per share. As of December 31, 2018, there were 2,004,743,442 shares issued. All issued shares are fully paid. Also, as of December 31, 2018, the Company held 41,666,666 shares as treasury shares.

(3) Include mainly legal reserve under Luxembourg law for \$200.5 million, undistributable reserves under Luxembourg law for \$1.4 billion, hedge accounting reserve, net of tax effect, for \$0.5 million and reserves related to the acquisition of non-controlling interest in subsidiaries for \$(88.5) million.

(4) Represents the difference between book value of non-monetary contributions received from shareholders under Luxembourg GAAP and IFRS.

(5) Represents \$0.11 per share (\$1.10 per ADS). Related to the dividends distributed on May 2, 2018, and as 41,666,666 shares are held as treasury shares by Ternium, the dividends attributable to these treasury shares amounting to \$4.6 million were included in equity as less dividend paid.

(6) Corresponds to the dividends paid by Ternium Argentina S.A.

Dividends may be paid by Ternium to the extent distributable retained earnings calculated in accordance with Luxembourg law and regulations exist. Therefore, retained earnings included in these consolidated financial statements may not be wholly distributable. See Note 25 (iii). The accompanying notes are an integral part of these consolidated financial statements.

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## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017

and for the years ended December 31, 2018, 2017 and 2016

(All amounts in USD thousands)

## Consolidated Statements of Changes in Equity

	Attributable to the owners of the parent (1)									
	Capital stock (2)	Treasury shares (2)	Initial public offering expenses (3)	Reserves (3)	Capital stock issue discount (4)	Currency translation adjustment	Retained earnings	Total	Non- controlling interest	Total Equity
Balance at January 1, 2017	2,004,743	(150,000)	(23,295)	1,420,171	(2,324,866)	(2,336,929)	5,801,474	4,391,298	775,295	5,166,593
Profit for the period							886,219	886,219	136,708	1,022,927
Other comprehensive income (loss) for the year										
Currency translation adjustment						(66,735 )		(66,735 )	(37,658 )	(104,393 )
Remeasurement of post employment benefit obligations				(4,642 )				(4,642 )	(1,556 )	(6,198 )
Cash flow hedges, net of tax				504				504	124	628
Others				88				88	7	95
Total comprehensive income (loss) for the year	—	—	—	(4,050 )	—	(66,735 )	886,219	815,434	97,625	913,059
Dividends paid in cash (5)							(196,308 )	(196,308 )	—	(196,308 )
Dividends paid in cash to non-controlling interest (6)								—	(30,573 )	(30,573 )
Balance at December 31, 2017	2,004,743	(150,000)	(23,295)	1,416,121	(2,324,866)	(2,403,664)	6,491,385	5,010,424	842,347	5,852,771

(1) Shareholders' equity is determined in accordance with accounting principles generally accepted in Luxembourg.

(2) The Company has an authorized share capital of a single class of 3.5 billion shares having a nominal value of \$1.00 per share. As of December 31, 2017, there were 2,004,743,442 shares issued. All issued shares are fully paid. Also, as of December 31, 2017, the Company held 41,666,666 shares as treasury shares.

(3) Include mainly legal reserve under Luxembourg law for \$200.5 million, undistributable reserves under Luxembourg law for \$1.4 billion, hedge accounting reserve, net of tax effect, for \$(0.6) million and reserves related to the acquisition of non-controlling interest in subsidiaries for \$(88.5) million.

(4) Represents the difference between book value of non-monetary contributions received from shareholders under Luxembourg GAAP and IFRS.

(5) Represents \$0.10 per share (\$1.00 per ADS). Related to the dividends distributed on May 3, 2017, and as 41,666,666 shares are held as treasury shares by Ternium, the dividends attributable to these treasury shares amounting to \$4.2 million were included in equity as less dividend paid.

(6) Corresponds to the dividends paid by Ternium Argentina S.A.

Dividends may be paid by Ternium to the extent distributable retained earnings calculated in accordance with Luxembourg law and regulations exist. Therefore, retained earnings included in these consolidated financial statements may not be wholly distributable. See Note 25 (iii). The accompanying notes are an integral part of these consolidated financial statements.

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## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017

and for the years ended December 31, 2018, 2017 and 2016

(All amounts in USD thousands)

## Consolidated Statements of Changes in Equity

	Attributable to the owners of the parent (1)									
	Capital stock (2)	Treasury shares (2)	Initial public offering expenses (3)	Reserves (3)	Capital stock issue discount (4)	Currency translation adjustment	Retained earnings	Total	Non- controlling interest	Total Equity
Balance at January 1, 2016	2,004,743	(150,000)	(23,295)	1,444,394	(2,324,866)	(2,300,335)	5,382,507	4,033,148	769,849	4,802,997
Loss for the year							595,644	595,644	111,285	706,929
Other comprehensive income (loss) for the year										
Currency translation adjustment						(36,594 )		(36,594 )	(51,213 )	(87,807 )
Remeasurement of post employment benefit obligations				(25,749 )				(25,749 )	(2,232 )	(27,981 )
Cash flow hedges and others, net of tax				229				229	220	449
Others				1,297				1,297	(1,785 )	(488 )
Total comprehensive income (loss) for the year	—	—	—	(24,223 )	—	(36,594 )	595,644	534,827	56,275	591,102
Dividends paid in cash (5)							(176,677 )	(176,677 )	—	(176,677 )
Dividends paid in cash to non-controlling interest (6)								—	(50,829 )	(50,829 )
Balance at December 31, 2016	2,004,743	(150,000)	(23,295)	1,420,171	(2,324,866)	(2,336,929)	5,801,474	4,391,298	775,295	5,166,593

(1) Shareholders' equity is determined in accordance with accounting principles generally accepted in Luxembourg.

(2) The Company has an authorized share capital of a single class of 3.5 billion shares having a nominal value of \$1.00 per share. As of December 31, 2016, there were 2,004,743,442 shares issued. All issued shares are fully paid. Also, as of December 31, 2016, the Company held 41,666,666 shares as treasury shares.

(3) Include mainly legal reserve under Luxembourg law for \$200.5 million, undistributable reserves under Luxembourg law for \$1.4 billion, hedge accounting reserve, net of tax effect, for \$(0.4) million and reserves related to the acquisition of non-controlling interest in subsidiaries for \$(88.5) million.

(4) Represents the difference between book value of non-monetary contributions received from shareholders under Luxembourg GAAP and IFRS.

(5) Represents \$0.090 per share (\$0.90 per ADS). Related to the dividends distributed on May 4, 2016, and as 41,666,666 shares are held as treasury shares by Ternium, the dividends attributable to these treasury shares amounting to \$3.7 million were included in equity as less dividend paid.

(6) Corresponds to the dividends paid by Ternium Argentina S.A.

Dividends may be paid by Ternium to the extent distributable retained earnings calculated in accordance with Luxembourg law and regulations exist. Therefore, retained earnings included in these consolidated financial statements may not be wholly distributable. See Note 25 (iii). The accompanying notes are an integral part of these consolidated financial statements.

## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017

and for the years ended December 31, 2018, 2017 and 2016

(All amounts in USD thousands)

## Consolidated Statements of Cash Flows

	Notes	Year ended December 31,		
		2018	2017	2016
Cash flows from operating activities				
Profit for the year		1,662,132	1,022,927	706,929
Adjustments for:				
Depreciation and amortization	12 & 13	589,299	474,299	406,890
Income tax accruals less payments	27 (b)	(154,366 )	(273,443 )	182,332
Equity in earnings of non-consolidated companies	14	(102,772 )	(68,115 )	(14,624 )
Interest accruals less payments	27 (b)	(13,014 )	19,484	12,699
Changes in provisions	19	(7,659 )	2,783	1,678
Changes in working capital (1)	27 (b)	(228,577 )	(864,970 )	(162,373 )
Net foreign exchange results and others		(5,778 )	70,894	(33,936 )
Net cash provided by operating activities		1,739,265	383,859	1,099,595
Cash flows from investing activities				
Capital expenditures	12 & 13	(520,250 )	(409,402 )	(435,460 )
Loans to non-consolidated companies	14	(24,480 )	(23,904 )	(92,496 )
Decrease in other investments	18	86,857	14,986	86,340
Proceeds from the sale of property, plant and equipment		861	1,124	1,212
Dividends received from non-consolidated companies		—	65	183
Acquisition of business				
Purchase consideration	3	—	(1,890,989)	—
Cash acquired	3	—	278,162	—
Investment in non-consolidated companies	14	—	—	(114,449 )
Net cash used in investing activities		(457,012 )	(2,029,958)	(554,670 )
Cash flows from financing activities				
Dividends paid in cash to company's shareholders		(215,938 )	(196,308 )	(176,677 )
Dividends paid in cash to non-controlling interests		(20,940 )	(30,573 )	(50,829 )
Finance Lease payments		(7,565 )	(4,157 )	—
Proceeds from borrowings		1,188,731	3,239,121	910,577
Repayments of borrowings		(2,266,560)	(1,205,827)	(1,191,770)
Net cash (used in) provided by financing activities		(1,322,272)	1,802,256	(508,699 )
Increase (Decrease) in cash and cash equivalents		(40,019 )	156,157	36,226
Movement in cash and cash equivalents				
At January 1,		337,779	183,463	151,491
Effect of exchange rate changes	4 (cc)	(47,219 )	(1,841 )	(4,254 )
Increase (Decrease) in cash and cash equivalents		(40,019 )	156,157	36,226

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Cash and cash equivalents at December 31, (2)	250,541	337,779	183,463
Non- Cash transactions:			
Acquisition of PP&E under lease contract agreements	—	77,035	—

(1) The working capital is impacted by non-cash movement of \$(216.6) million as of December 31, 2018 \$(70.0) million and \$(73.8) million as of December 31, 2017 and 2016, respectively) due to the variations in the exchange rates used by subsidiaries with functional currencies different from the U.S. dollar.

(2) It includes restricted cash of \$2,216, \$50 and \$83 as of December 31, 2018, 2017 and 2016, respectively. In addition, the Company had other investments with a maturity of more than three months for \$51,472, \$135,864 and \$150,851 as of December 31, 2018, 2017 and 2016, respectively.

The accompanying notes are an integral part of these consolidated financial statements.

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TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017  
and for the years ended December 31, 2018, 2017 and 2016

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TERNIUM S.A.

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Notes to the Consolidated Financial Statements

1. GENERAL INFORMATION

Ternium S.A. (the “Company” or “Ternium”), was incorporated on December 22, 2003 to hold investments in flat and long steel manufacturing and distributing companies. The Company has an authorized share capital of a single class of 3.5 billion shares having a nominal value of \$1.00 per share. As of December 31, 2018, there were 2,004,743,442 shares issued. All issued shares are fully paid.

Ternium’s American Depositary Shares (“ADSs”) trade on the New York Stock Exchange under the symbol “TX”. The Company was initially established as a public limited liability company (société anonyme) under Luxembourg’s 1929 holding company regime. Until termination of such regime on December 31, 2010, holding companies incorporated under the 1929 regime (including the Company) were exempt from Luxembourg corporate and withholding tax over dividends distributed to shareholders.

On January 1, 2011, the Company became an ordinary public limited liability company (société anonyme) and, effective as from that date, the Company is subject to all applicable Luxembourg taxes (including, among others, corporate income tax on its worldwide income) and its dividend distributions will generally be subject to Luxembourg withholding tax. However, dividends received by the Company from subsidiaries in high income tax jurisdictions, as defined under Luxembourg law, will continue to be exempt from corporate income tax in Luxembourg under Luxembourg’s participation exemption.

As part of the Company’s corporate reorganization in connection with the termination of Luxembourg’s 1929 holding company regime, on December 6, 2010, the Company contributed its equity holdings in all its subsidiaries and all its financial assets to its Luxembourg wholly-owned subsidiary Ternium Investments S.à.r.l., or Ternium Investments, in exchange for newly issued corporate units of Ternium Investments. As the assets contributed were recorded at their historical carrying amount in accordance with Luxembourg GAAP, the Company’s December 2010 contribution of such assets to Ternium Investments resulted in a non-taxable revaluation of the accounting value of the Company’s assets under Luxembourg GAAP. The amount of the December 2010 revaluation was equal to the difference between the historical carrying amounts of the assets contributed and the value at which such assets were contributed and amounted to \$4.0 billion. However, for the purpose of these consolidated financial statements, the assets contributed by Ternium to its wholly-owned subsidiary Ternium Investments were recorded based on their historical carrying amounts in accordance with IFRS, with no impact on the financial statements.

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## 1. GENERAL INFORMATION (continued)

Following the completion of the corporate reorganization, and upon its conversion into an ordinary Luxembourg holding company, the Company voluntarily recorded a special reserve exclusively for tax-basis purposes. As of December 31, 2018 and 2017, this special tax reserve amounted to \$6.7 billion and \$6.9 billion, respectively. The Company expects that, as a result of its corporate reorganization, its current overall tax burden will not increase, as all or substantially all of its dividend income will come from high income tax jurisdictions. In addition, the Company expects that dividend distributions for the foreseeable future will be imputed to the special reserve and therefore should be exempt from Luxembourg withholding tax under current Luxembourg law.

## 2. BASIS OF PRESENTATION

### a) Basis of presentation

These consolidated financial statements have been prepared in accordance with IFRS (International Financial Reporting Standards) issued and effective or issued and early adopted as at the time of preparing these statements (February 2018), as issued by the International Accounting Standards Board and in conformity with International Financial Reporting Standards as adopted by the European Union ("EU"). These consolidated financial statements are presented in thousands of United States dollars ("\$"), except otherwise indicated.

These Consolidated financial statements fairly present the consolidated equity and consolidated financial situation of Ternium as of December 31, 2018, and the consolidated results of its operations, the Changes in the Consolidated Statement of Comprehensive Income, the Changes in Consolidated Net Equity and the Consolidated Cash Flows of Ternium for the year then ended.

Elimination of all material intercompany transactions and balances between the Company and their respective subsidiaries has been made in consolidation.

These consolidated financial statements have been prepared under the historical cost convention, as modified by the revaluation of available-for-sale financial assets, and financial assets and financial liabilities (including derivative instruments) at fair value through profit or loss.

Certain comparative amounts have been reclassified to conform to changes in presentation in the current year. These reclassifications do not have a material effect on the Company's consolidated financial statements.

These consolidated financial statements have been approved for issue by the Board of Directors on February 19, 2019. Detailed below are the companies whose financial statements have been consolidated and accounted for interest in these consolidated financial statements

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2. BASIS OF PRESENTATION (continued)

Company	Country of Organization	Main activity	Percentage of ownership at December 31,		
			2018	2017	2016
Ternium S.A.	Luxembourg	Holding	100.00%	100.00%	100.00%
Ternium Investments S.à.r.l.	Luxembourg	Holding	100.00%	100.00%	100.00%
Ternium Solutions A.G. (1)	Switzerland	Services	100.00%	100.00%	100.00%
Ternium Participações S.A. (1)	Brazil	Holding	100.00%	100.00%	100.00%
Ternium Investments Switzerland AG (1)	Switzerland	Holding	100.00%	100.00%	100.00%
Ternium Internacional España S.L.U. (1)	Spain	Marketing of steel products	100.00%	100.00%	100.00%
Ternium USA Inc. (1)	USA	Manufacturing and selling of steel products	100.00%	100.00%	100.00%
Ternium Argentina S.A. (2)	Argentina	Manufacturing and selling of steel products	60.94 %	60.94 %	60.94 %
Impeco S.A. (3)	Argentina	Manufacturing of pipe products	60.97 %	60.97 %	60.97 %
Prosid Investments S.A. (4)	Uruguay	Holding	60.94 %	60.94 %	60.94 %
Ternium Mexico S.A. de C.V. (5)	Mexico	Manufacturing and selling of steel products	88.78 %	88.78 %	88.78 %
Hylsa S.A. de C.V. (6)	Mexico	Manufacturing and selling of steel products	88.78 %	88.78 %	88.78 %
Las Encinas S.A. de C.V. (6)	Mexico	Exploration, exploitation and pelletizing of iron ore	88.78 %	88.78 %	88.78 %
Ferropak Comercial S.A. de C.V. (6)	Mexico	Scrap services company	88.78 %	88.78 %	88.78 %
Transamerica E. & I. Trading Corp. (6)	USA	Scrap services company	88.78 %	88.78 %	88.78 %
Técnica Industrial S.A. de C.V. (6)	Mexico	Services	88.78 %	88.78 %	88.78 %
Galvacer Chile SA (6)	Chile	Distributing company	88.78 %	88.78 %	88.78 %
Imsamex Ecuador, S.A. (6)	Ecuador	Distributing company	88.78 %	88.78 %	88.78 %
Ternium Gas México S.A. de C.V. (7)	Mexico	Energy services company	88.78 %	88.78 %	88.78 %
Consortio Minero Benito Juarez Peña Colorada S.A. de C.V. (8)	Mexico	Exploration, exploitation and pelletizing of iron ore	44.39 %	44.39 %	44.39 %
Peña Colorada Servicios S.A. de C.V. (8)	Mexico	Services	44.39 %	44.39 %	44.39 %
Exiros B.V. (8)	Netherlands	Procurement and trading services	50.00 %	50.00 %	50.00 %
Servicios Integrales Nova de Monterrey S.A. de C.V. (9)	Mexico	Medical and Social Services	66.14 %	66.14 %	66.14 %
Ternium Internacional Nicaragua S.A.	Nicaragua	Manufacturing and selling of steel products	99.38 %	99.38 %	99.38 %
Ternium Internacional Honduras S.A. de C.V.	Honduras	Manufacturing and selling of steel products	99.18 %	99.18 %	99.18 %
Ternium Internacional El Salvador S.A. de C.V.	El Salvador	Manufacturing and selling of steel products	99.92 %	99.92 %	99.92 %
Ternium Internacional Costa Rica S.A.	Costa Rica	Manufacturing and selling of steel products	99.98 %	99.98 %	99.98 %
Ternium Internacional Guatemala S.A. (10)	Guatemala	Selling of steel products	99.98 %	99.98 %	99.98 %

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Ternium Colombia S.A.S. (formerly Ferrasa S.A.S.) (10)	Colombia	Manufacturing and selling of steel products	100.00%	100.00%	100.00%
Ternium del Cauca S.A.S. (formerly Perfilamos del Cauca S.A.S.) (10)	Colombia	Manufacturing and selling of steel products	100.00%	100.00%	100.00%
Ternium Siderúrgica de Caldas S.A.S. (formerly Siderúrgica de Caldas S.A.S.) (10)	Colombia	Manufacturing and selling of steel products	100.00%	100.00%	100.00%
Tenigal S. de R.L. de C.V. (11)	Mexico	Manufacturing and selling of steel products	51.00 %	51.00 %	51.00 %
Ternium Internacional S.A. (12)	Uruguay	Holding and marketing of steel products	100.00%	100.00%	100.00%
Ternium Treasury Services S.A. (12)	Uruguay	Financial Services	100.00%	100.00%	100.00%
Ternium Internationaal B.V. (13)	Netherlands	Marketing of steel products	100.00%	100.00%	100.00%

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2. BASIS OF PRESENTATION (continued)

Company	Country of Organization	Main activity	Percentage of ownership at December 31,		
			2018	2017	2016
Ternium International Inc. (13)	Panama	Marketing of steel products	100.00%	100.00%	100.00%
Ternium Procurement S.A. (14)	Uruguay	Procurement services	100.00%	100.00%	100.00%
Technology & Engineering Services S.A. (14)	Uruguay	Engineering and other services	100.00%	100.00%	100.00%
Ternium International USA Corporation (15)	USA	Engineering and other services	100.00%	100.00%	100.00%
Ternium Ingeniería y Servicios de México S.A. de C.V. (16)	Mexico	Engineering and other services	99.89 %	99.89 %	99.89 %
Soluciones Integrales de Gestión S.A. (17)	Argentina	Other services	100.00%	100.00%	100.00%
Ternium Staal B.V. (18)	Netherlands	Holding and marketing of steel products	100.00%	100.00%	—
Ternium Brasil Ltda. (18)	Brazil	Manufacturing and selling of steel products	100.00%	100.00%	—
Ternium del Atlántico S.A.S (19)	Colombia	Manufacturing and selling of steel products	100.00%	100.00%	—
Ternium Solutions S.A. (formerly Tericer Trading S.A.) (20)	Uruguay	Other services	100.00%	—	—
Acedor, S.A. de C.V. (21)	Mexico	Holding	—	88.78 %	88.78 %
Ecosteel Gestao de Efuentes Industriais S.A. (22)	Brazil	Other services	—	100.00%	—
Galvatubing Inc (23)	USA	Manufacturing and selling of pipe Products	—	88.78 %	88.78 %
Galvamet America Corp (24)	USA	Manufacturing and selling of insulated panel products	—	88.78 %	88.78 %
Ternium Internacional de Colombia S.A.S. (25)	Colombia	Marketing of steel products	—	100.00%	100.00%
Ecosteel Gestao de Águas Industriais S.A. (26)	Brazil	Other services	—	100.00%	—
Galvacer America Inc (27)	USA	Distributing company	—	—	88.78 %

(1) Indirectly through Ternium Investments S.à.r.l. Total voting rights held: 100.00%.

(2) During the fourth quarter of 2017, Siderar S.A.I.C. changed its business name to Ternium Argentina S.A. Indirectly through Ternium Internacional España S.L.U. Total voting rights held: 60.94%.

(3) Since the fourth quarter of 2017, indirectly through Ternium Argentina S.A. and Soluciones Integrales de Gestión S.A Total voting rights held 100.00%. Before that, indirectly through Ternium Argentina S.A. and Ternium Internacional S.A.

(4) Since the fourth quarter 2017, indirectly through Ternium Argentina S.A. and Ternium Procurement S.A. Total voting rights held 100.00%. Before that indirectly through Ternium Argentina S.A. and Ternium Internacional S.A.

(5) Since the fourth quarter 2017, indirectly through Ternium Argentina S.A. and Ternium Internacional España S.L.U. Total voting rights held 100.00%. Before that indirectly through Ternium Argentina S.A., Ternium Internacional S.A. and Ternium Internacional España S.L.U.

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- (6) Indirectly through Ternium Mexico S.A. de C.V. Total voting rights held: 100.00%.
- (7) Indirectly through Ternium Mexico S.A. de C.V. and Tenigal S. de R.L. de C.V. Total voting rights held: 100.00%.
- (8) Total voting rights held: 50.00%.
- (9) Indirectly through Ternium Mexico S.A. de C.V. Total voting rights held: 74.50%.
- (10) Indirectly through Ternium Internacional España S.L.U.. Total voting rights held: 100.00%.
- (11) Indirectly through Ternium Internacional España S.L.U. Total voting rights held: 51.00%.
- (12) Indirectly through Ternium Investments Switzerland AG. Total voting rights held: 100.00%.
- (13) Since the third quarter 2017, indirectly through Ternium Investments S.à.r.l. Total voting rights held 100.00%. Before that, indirectly through Ternium Investments Switzerland AG.
- (14) Since the third quarter of 2017, indirectly through Ternium Internacional España S.L.U. Total voting rights held 100.00%. Before that, indirectly through Ternium Investments Switzerland AG.
- (15) Since the fourth quarter 2017, indirectly through Ternium Investments S.à.r.l. Total voting rights held: 100.00%. Before that, indirectly through Ternium Internacional S.A.
- (16) Indirectly through Technology & Engineering Services S.A. and Ternium México S.A. de C.V. Total voting rights held 100.00%.
- (17) Since the third quarter of 2017, indirectly through Ternium Investments S.à.r.l and Ternium Internacional España S.L.U. Total voting rights held 100.00%. Before that indirectly through Ternium Investments S.à.r.l and Technology and Engineering Services S.A.
- (18) Indirectly through Ternium Investments S.à.r.l. Total voting right held: 100.00%.
- (19) Indirectly through Ternium Internacional España S.L.U. Total voting rights held: 100.00%.
- (20) Indirectly through Ternium Investments S.à.r.l. Total voting rights held: 100.00%.
- (21) Merged with Ternium México as of December 31, 2018.
- (22) This company was dissolved as of May 4, 2018.
- (23) This company was dissolved as of July 19, 2018.
- (24) On August 3, 2018, the shareholders gave its consent to proceed with the liquidation and dissolution of this subsidiary.
- (25) This company was dissolved as of October 3, 2018.
- (26) This company was dissolved as of December 3, 2018.
- (27) This company was dissolved as of December 11, 2017.

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2. BASIS OF PRESENTATION (continued)

The most important non-controlling interest is related to the investment in Ternium Argentina S.A., which is a company listed in the Buenos Aires Stock Exchange. Ternium Argentina S.A. stated in its annual accounts as of and for the year ended December 31, 2018, that revenues amounted to \$1,959 million (2017: \$2,301 million), net profit from continuing operations to \$254 million (2017: \$337 million), total assets to \$3,184 million (2017: \$2,820 million), total liabilities to \$606 million (2017: \$874 million) and shareholders' equity to \$2,578 million (2017: \$1,945 million). All the information related to this investment could be found in the Buenos Aires Stock Exchange webpage.

3. ACQUISITION OF BUSINESS

CSA Siderúrgica do Atlântico Ltda. (now Ternium Brasil Ltda.) and thyssenkrupp Slab International B.V. (now Ternium Staal B.V.)

(a) The acquisition

On September 7, 2017, Ternium completed the acquisition from thyssenkrupp AG ("tkAG") of a 100% ownership interest in thyssenkrupp Slab International B.V. ("tkSI") and its wholly-owned subsidiary CSA Siderúrgica do Atlântico Ltda. ("CSA"), a steel slab producer with a steelmaking facility located in the state of Rio de Janeiro, Brazil, and having 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 acquisition was expected to substantially increase Ternium's steelmaking capacity and strengthen its business in strategic industrial sectors across Latin America.

As part of the transaction, tkAG assigned to Ternium a slab commitment agreement providing for an arrangement relating to the purchase of CSA-manufactured carbon steel slabs under the terms of a slab frame supply agreement and related annual slab off-take agreements between tkSI and the entity that acquired thyssenkrupp's former Calvert re-rolling facility in Alabama, United States of America. Such slab commitment agreement provided for a commitment by such entity to purchase from tkSI approximately 2.0 million tons of CSA-manufactured carbon steel slabs per year until September 30, 2019, at the price resulting from the pricing formula set forth therein. This slab commitment agreement was amended on December 20, 2017, spreading deliveries of the remaining slab volumes committed under such agreement through December 2020.

The purchase price paid by Ternium in the acquisition totaled approximately \$1,891 million.

Ternium began consolidating the balance sheets and results of operations of tkSI and CSA as from September 7, 2017, and CSA changed its name to Ternium Brasil Ltda. and tkSI was renamed Ternium Staal B.V.

(b) Fair value of net assets acquired

The application of the purchase method required certain estimates and assumptions especially concerning the determination of the fair values of the acquired intangible assets and property, plant and equipment as well as the liabilities assumed at the date of the acquisition. The fair values determined at the acquisition date were based mainly on discounted cash flows and other valuation techniques.

## TERNIUM S.A.

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## 3. ACQUISITION OF BUSINESS (continued)

The allocation of the fair values determined for the assets and liabilities arising from the acquisition was as follows:

Fair value of acquired assets and liabilities:

Property, plant and equipment and Intangible assets	1,573,946
Inventories	400,047
Cash and cash equivalents	278,162
Trade receivables	63,710
Other receivables	705,058
Deferred tax assets	13,686
Provisions	(799,938 )
Trade payables	(219,604 )
Other assets and liabilities, net	(124,078 )
Net assets acquired	1,890,989

According to this purchase price allocation, no goodwill was recorded.

Ternium entered into several derivative contracts to partially hedge the currency volatility risk associated with the Euro-denominated transaction price. As of the date of the closing of the acquisition, the fair value of those contracts amounted to \$75.9 million. Such value was deducted from the purchase consideration.

The purchase price allocation disclosed above was prepared with the assistance of a third-party expert. As of December 31, 2018, no adjustment has been recorded to the assets and liabilities assumed in comparison to the amounts registered as of December 31, 2017.

## (c) Main contingencies associated with the acquired business

Contrary to the recognition principles in IAS 37 Provisions, Contingent Liabilities and Contingent Assets, IFRS 3 Business Combinations requires an acquirer of a business to recognize contingent liabilities assumed in a business acquisition at the acquisition date even if it is not probable that an outflow of resources will be required to settle the obligation.

The main contingencies recognized in the Company's consolidated financial statements pursuant to IFRS 3 Business Combinations in connection with the acquisition of tkSI and CSA include the following:

## (i) Fishermen associations' claims

Civil contingencies include lawsuits brought by a number of fishermen associations on behalf of their associates, alleging that the dredge of Ternium Brasil's deep-water port has had a negative impact on fish farming and exploitation activities in the Sepetiba Bay area in Rio de Janeiro and that, as a result, fishermen in that area had suffered damages. A provision in the amount of \$24.5 million was recorded at the acquisition date in connection with this matter (\$19.7 million as of December 31, 2018).



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### 3. ACQUISITION OF BUSINESS (continued)

#### (ii) Tax assessments relating to the use of certain ICMS tax credits

The Imposto Sobre Operações Relativas à Circulação de Mercadorias e Serviços, or ICMS, is a Brazilian value-added tax on the services (inter-states) and the transfer of goods in Brazil. Payment of ICMS generates tax credits that, subject to applicable law, rules and regulations, may be either used to offset ICMS payment obligations generated in connection with domestic sales of products and services, or sold and transferred to third parties.

The Rio de Janeiro State Treasury Office is challenging the use by Ternium Brasil of ICMS tax credits generated in connection with purchases of refractory materials in the period from December 2010 through December 2016, and intends to assess taxes and impose fines on Ternium Brasil on the argument that such materials may not be qualified as raw materials or intermediary products but as goods for consumption and, accordingly, ICMS tax credits generated in connection with their purchase are not available and may not be used to offset ICMS payment obligations generated in connection with Ternium Brasil's domestic sales of carbon steel slabs. Ternium Brasil has appealed against the Rio de Janeiro State Treasury Office tax assessments and fines. A provision in the amount of \$57.7 million was recorded as of the acquisition date in connection with this matter (\$46.9 million as of December 31, 2018).

#### (iii) ICMS deferral tax benefit - Unconstitutionality

Through State Law No. 4,529, of March 31, 2005, the State of Rio de Janeiro granted Ternium Brasil a tax incentive consisting of a deferment of ICMS payable by Ternium Brasil in connection with the construction and operation of the company's Rio de Janeiro steelmaking complex. The incentive applies in respect of the acquisition of fixed assets and certain raw materials (i.e. iron ore, pellets, alloys, coke, coal and scrap) and significantly reduces input ICMS credit accumulation by Ternium Brasil. The tax incentive was granted for a period of 20 years from the commencement of the construction works for Ternium Brasil's Rio de Janeiro steel complex.

In 2012, a Brazilian political party filed a direct action of unconstitutionality against the above-mentioned State Law before the Brazilian Federal Supreme Court, predicated on the argument that, since the tax incentive granted pursuant to such State Law had not been approved by Brazil's National Council of Fiscal Policy (Conselho Nacional de Política Fazendária, or CONFAZ), such State Law should be declared unconstitutional.

In August 2017, the Brazilian Congress enacted Supplementary Law No. 160/2017, instituting a mechanism through which the States may confirm any ICMS incentives they had granted in prior years without CONFAZ approval and, in furtherance of such Supplementary Law, in December 2017 the States adopted ICMS Convention 190/2017, establishing the applicable rules and deadlines for so confirming such ICMS incentives. As per the terms of ICMS Convention 190/2017, all States are required to publish in their official gazettes, on or before March 29, 2018, a list of the ICMS incentives that are to be confirmed pursuant to Supplementary Law No. 160. On March 6, 2018, the State of Rio de Janeiro published its list of ICMS incentives, including, among others, the ICMS benefit granted to Ternium Brasil. ICMS Convention 190/2017 also required that all relevant documents concerning such incentives be filed with CONFAZ, and the State of Rio de Janeiro satisfied such requirements as well. On July 27, 2018, the Governor of Rio de Janeiro issued Executive Order (Decreto) No. 46,78, pursuant to which the State of Rio de Janeiro reconfirmed, in accordance with ICMS Convention 190/2017, the ICMS tax benefits listed in its official gazette publication made pursuant to the Convention, including, among others, Ternium Brasil's ICMS tax benefits.

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### 3. ACQUISITION OF BUSINESS (continued)

In October 2018, the State of Rio de Janeiro and the Federation of Industries of the State of Rio de Janeiro (Federação das Indústrias do Estado do Rio de Janeiro, or FIRJAN) filed petitions arguing that the action of unconstitutionality against the March 31, 2005 Rio de Janeiro State Law No. 4,529 could not be judged by the Federal Supreme Court since, following the revalidation of such law under Supplementary Law No.160/17 and the ICMS Convention 190/2017, such action of unconstitutionality had lost its purpose. Following the filing of such petitions, the Reporting Justice Minister in charge of the case summoned the plaintiff in such action of unconstitutionality, the Federal Attorney General's Office (Advocacia-Geral da União, or AGU) and the Chief of the Public Minister (Procuradoria-Geral da República, or PGR) to submit statements expressing their respective views on the arguments presented by the State of Rio de Janeiro and the FIRJAN with respect to the effect of Supplementary Law No.160/17 and the ICMS Convention 190/2017 on the pending action of unconstitutionality. In their respective statements, the plaintiff argued that Supplementary Law No.160/17 and the ICMS Convention 190/2017 do not affect the unconstitutionality of ICMS benefits granted through State Law No. 4,529, while the AGU stated that, in light of the additional legal support provided by Supplementary Law No.160/17 and the ICMS Convention 190/2017, a finding of unconstitutionality of State Law No. 4,529 would not be warranted. In turn, the PGR stated that a decision on the case should be postponed until the Federal Supreme Court completes its analysis of Supplementary Law No.160/17 and ICMS Convention 190/2017. As of the date of these consolidated financial statements, the Federal Supreme Court has not yet ruled on the above-referred petitions filed by the State of Rio de Janeiro and FIRJAN.

The tax benefits accumulated under Ternium Brasil's ICMS incentive as of the acquisition date amounted to approximately \$1,089 million. In accordance with the guidance in IFRS 3, the Company recorded as of the acquisition date a provision of \$651.8 million (including estimated penalties and interest) in connection with this matter, together with an asset of \$325.9 million arising from its right to recover part of the contingency amount from thyssenkrup Veerhaven B.V. (\$529.4 million and \$264.7 million, respectively, as of December 31, 2018). The calculation of this contingency has been determined taking into consideration the probability of negative outcome for the Company, if any, on an estimated total risk of \$1,630 million (including estimated penalties and interests).

#### (d) Acquisition financing

The acquisition was mainly financed through an unsecured 5-year syndicated facility in the principal amount of \$1.5 billion granted to the Company's subsidiary, Ternium Investments S.à.r.l., by a syndicate of banks.

The facility will be repaid in eight consecutive and equal semi-annual installments, commencing on March 5, 2019, and has been guaranteed by the Company's subsidiary, Ternium México, S.A. de C.V. The borrower and the guarantor are subject to certain covenants customary for transactions of this type, including limitations on liens and encumbrances, transactions with affiliates, consolidations and mergers and restrictions on investments. The guarantor is additionally subject to limitations on the sale of certain assets and compliance with a leverage ratio. There are no limitations to the payment of dividends applicable to the borrower or the guarantor, except, with respect to the borrower, upon an event of default under the facility. During 2018, the Company made prepayments of principal for \$375 million. As of December 31, 2018, the outstanding value of this syndicated facility was \$1.125 million and both the borrower and the guarantor were in compliance with all of its covenants.

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#### 4. ACCOUNTING POLICIES

The following is a summary of the principal accounting policies followed in the preparation of these Consolidated Financial Statements:

(a) Group accounting

(1) Subsidiary companies and transactions with non-controlling interests

Subsidiaries are all entities over which the Company has control. The Company controls an entity when the Company is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Company. They are deconsolidated from the date that control ceases.

The Company uses the acquisition method of accounting to account for business combinations. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred and the equity interests issued by the Company. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Acquisition-related costs are expensed as incurred. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at the fair values at the acquisition date. Indemnification assets are recognized at the same time that the Company recognizes the indemnified item and measures them on the same basis as the indemnified item, subject to the need for a valuation allowance for uncollectible amounts. The Company measures the value of a reacquired right recognized as an intangible asset on the basis of the remaining contractual term of the related contract regardless of whether market participants would consider potential contractual renewals in determining its fair value.

On an acquisition-by-acquisition basis, the Company recognizes any non-controlling interest in the acquiree at the non-controlling interest's proportionate share of the acquiree's net assets.

The excess of the consideration transferred, the amount of any non-controlling interest in the acquiree and the acquisition-date fair value of any previous equity interest in the acquiree over the fair value of the Company's share of the identifiable net assets acquired is recorded as goodwill. If this is less than the fair value of the net assets of the subsidiary acquired in the case of a bargain purchase, the difference is recognized directly in the income statement. The measurement period is the earlier of the date that the acquirer receives the information that it is looking for or cannot obtain the information and one year after the acquisition date. Where the accounting for a business combination is not complete by the end of the reporting period in which the business combination occurred provisional amounts are reported.

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#### 4. ACCOUNTING POLICIES (Continued)

The Company treats transactions with non-controlling interests as transactions with equity owners of the Company. For purchases from non-controlling interests, the difference between any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

When the Company ceases to have control or significant influence, any retained interest in the entity is remeasured to its fair value, with the change in carrying amount recognized in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognized in other comprehensive income in respect of that entity are accounted for as if the group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognized in other comprehensive income are reclassified to profit or loss.

Inter-company transactions, balances and unrealized gains on transactions between group companies are eliminated. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the group. However, the fact that the functional currency of some subsidiaries is their respective local currency, generates some financial gains (losses) arising from intercompany transactions, that are included in the consolidated income statement under Other financial expenses, net.

##### (2) Investments in non-consolidated companies

Associated companies are those entities in which Ternium has significant influence, but which it does not control. Joint arrangements are understood as combinations in which there are contractual agreements by virtue of which two or more companies hold an interest in companies that undertake operations or hold assets in such a way that any financial or operating decision is subject to the unanimous consent of the partners. A joint arrangement is classed as a joint operation if the parties hold rights to its assets and have obligations in respect of its liabilities or as a joint venture if the venturers hold rights only to the investee's net assets.

Investments in non-consolidated companies (associated companies and joint ventures) are accounted for using the equity method of accounting. Under this method, interests in joint ventures and associates are initially recognized in the consolidated statement of financial position at cost and adjusted thereafter to recognize the Company's share of the post-acquisition profits or losses in the income statement, and its share of post-acquisition changes in reserves recognized in reserves and in other comprehensive income in the income statement. Unrealized gains on transactions among the Company and its non-consolidated companies are eliminated to the extent of the Company's interest in such non-consolidated companies; unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. When the Company's share of losses in a non-consolidated company equals or exceeds its interest in such non-consolidated company, the Company does not recognize further losses unless it has incurred obligations or made payments on behalf of such non-consolidated company.

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#### 4. ACCOUNTING POLICIES (Continued)

The Company's investment in associates and joint ventures includes notional goodwill identified on acquisition. The Company determines at each reporting date whether there is any objective evidence that the investment is impaired. If this is the case, the group calculates the amount of impairment as the difference between the recoverable amount of the investment and its carrying value and recognizes the amount within "Equity on earnings (losses) of non-consolidated companies".

##### (b) Foreign currency translation

###### (1) Functional and presentation currency

Items included in the financial statements of each of the Company's subsidiaries and associated companies are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). Except for the Argentine and the non-consolidated companies whose functional currencies are their local currencies, Ternium determined that the functional currency of its subsidiaries is the U.S. dollar. Although Ternium is located in Luxembourg, it operates in several countries with different currencies. The \$ is the currency that best reflects the economic substance of the underlying events and circumstances relevant to Ternium as a whole.

###### (2) Subsidiary companies

The results and financial position of all the group entities (none of which operates in a hyperinflationary economy) that have a functional currency different from the presentation currency, are translated into the presentation currency as follows:

- (i) assets and liabilities are translated at the closing rate of each statement of financial position;
- (ii) income and expenses for each income statement are translated at average exchange rates (unless this average is not a reasonable approximation of the cumulative effect of the rates prevailing on the transaction dates, in which case income and expenses are translated at the rate on the dates of the transactions); and
- (iii) all resulting translation differences are recognized within other comprehensive income.

In the case of a sale or other disposition of any such subsidiary, any accumulated translation differences would be recognized in the income statement as part of the gain or loss on sale.

###### (3) Transactions in currencies other than the functional currency

Transactions in currencies other than the functional currency are translated into the functional currency using the exchange rates prevailing at the date of the transactions or valuation where items are re-measured.

At the end of each reporting period: (i) monetary items denominated in currencies other than the functional currency are translated using the closing rates, (ii) non-monetary items that are measured in terms of historical cost in a currency other than the functional currency are translated using the exchange rates prevailing at the date of the transactions; and (iii) non-monetary items that are measured at fair value in a currency other than the functional currency are translated using the exchange rates prevailing at the date when the fair value was determined.

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#### 4. ACCOUNTING POLICIES (Continued)

Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in currencies other than the functional currency are recorded as gains and losses from foreign exchange and included in "Other financial income (expenses), net" in the consolidated income statement, except when deferred in equity as qualifying cash flow hedges and qualifying net investment hedges. Translation differences on non-monetary financial assets and liabilities such as equities held at fair value through profit or loss are recognized in profit or loss as part of the "fair value gain or loss," while translation differences on non-monetary financial assets such as equities classified as fair value through other comprehensive income are included in other gains/(losses).

##### (c) Financial instruments

###### Non derivative financial instruments

Non derivative financial instruments comprise investments in equity and debt securities, trade and other receivables, cash and cash equivalents, loans and borrowings, and trade and other payables.

From January 1, 2018, the Company classifies its financial instruments in the following measurement categories:

**Amortized cost:** instruments that are held for collection or repayment of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. Interest income and expenses from these financial instruments are included in finance income or expense using the effective interest rate method. Any gain or loss arising on derecognition is recognized directly in profit or loss and presented in finance income or expense, together with foreign exchange gains and losses. Impairment losses are presented as separate line items in the statement of profit or loss.

**Fair value through other comprehensive income ("FVOCI"):** financial assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at FVOCI. Movements in the carrying amount are taken through OCI, except for the recognition of impairment gains or losses, interest revenue and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in OCI is reclassified from equity to profit or loss and recognized in other gains/(losses). Interest income from these financial assets is included in finance income using the effective interest rate method. Foreign exchange gains and losses are presented in other gains/(losses) and impairment expenses are presented as separate line item in the statement of profit or loss.

**Fair value through profit or loss ("FVPL"):** financial instruments that do not meet the criteria for amortized cost or FVOCI are measured at FVPL. A gain or loss on a debt investment that is subsequently measured at FVPL is recognized in profit or loss and presented net within other gains/(losses) in the period in which it arises.

The classification depends on the Company's business model for managing the financial instruments and the contractual terms of the cash flows.

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4. ACCOUNTING POLICIES (Continued)

For financial instruments measured at fair value, gains and losses will either be recorded in profit or loss or OCI. For investments in equity instruments that are not held for trading, this will depend on whether the group has made an irrevocable election at the time of initial recognition to account for the equity investment at FVOCI.

At initial recognition, the Company measures a financial instrument at its fair value plus, in the case of a financial instrument not at FVPL, transaction costs that are directly attributable to the acquisition of the financial instrument. Transaction costs of financial instruments carried at FVPL are expensed in profit or loss. Subsequent measurement of debt instruments depends on the Company's business model for managing the asset and the cash flow characteristics of the asset.

Until December 31, 2017 Ternium non derivative financial instruments were classified into the following categories:

• Financial instruments at fair value through profit or loss: comprising mainly cash and cash equivalents and investments in debt securities held for trading;

• Held-to-maturity instruments: measured at amortized cost using the effective interest method less impairment losses.

As of December 31, 2017, there were \$6.1 million classified under this category;

• Loans and receivables: measured at amortized cost using the effective interest method less impairment losses;

• Available-for-sale ("AFS") financial assets: gains and losses arising from changes in fair value were recognized within other comprehensive income ("OCI") with the exception of impairment losses, interest calculated using the effective interest method and foreign exchange gains and losses on monetary assets, which were recognized directly in profit or loss. Where the investment was disposed of or was determined to be impaired, the cumulative gain or loss previously recognized in OCI was included in the income statement for the period. As of December 31, 2017, there were no AFS amounts classified under this category;

• Other financial liabilities: measured at amortized cost using the effective interest method.

The classification depended on the nature and purpose of the financial assets and was determined at the time of initial recognition.

Financial assets and liabilities were recognized and derecognized on the settlement date.

Financial assets were initially measured at fair value, net of transaction costs, except for those financial assets classified as financial assets at fair value through profit or loss.

Financial liabilities, including borrowings, were initially measured at fair value, net of transaction costs and subsequently measured at amortized cost using the effective interest method, with interest expense recognized on an effective yield basis.

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#### 4. ACCOUNTING POLICIES (Continued)

##### Impairment of financial assets

From January 1, 2018, the Company assesses on a forward-looking basis the expected credit losses associated with its debt instruments carried at amortized cost and FVOCI. The impairment methodology applied depends on whether there has been a significant increase in credit risk.

For trade receivables, the Company applies the simplified approach permitted by IFRS 9, which requires expected lifetime losses to be recognized from initial recognition of the receivables, see note 4 (i) for further details.

Until December 31, 2017, the Company assessed at the end of each reporting period whether there was objective evidence that a financial asset or group of financial assets was impaired. A financial asset or a group of financial assets was impaired and impairment losses were incurred only if there was objective evidence of impairment as a result of one or more events that occurred after the initial recognition of the asset (a "loss event") and that loss event (or events) had an impact on the estimated future cash flows of the financial asset or group of financial assets that could be reliably estimated. The Company first assessed whether objective evidence of impairment existed.

For loans and receivables category and for held-to-maturity investments, the amount of the loss was measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The carrying amount of the asset was reduced and the amount of the loss was recognized in the consolidated income statement.

If, in a subsequent period, the amount of the impairment loss decreased and the decrease could be related objectively to an event occurring after the impairment was recognized, the reversal of the previously recognized impairment loss was recognized in the consolidated income statement.

##### Derivative financial instruments

Information about accounting for derivative financial instruments and hedging activities is included in Note 29 "Financial Risk management" and Note 4 (y).

##### (d) Property, plant and equipment

Land and buildings comprise mainly factories and offices. All property, plant and equipment are recognized at historical acquisition or construction cost less accumulated depreciation and accumulated impairment (if applicable), except for land, which is carried at acquisition cost less accumulated impairment (if applicable). There are no material residual values for property, plant and equipment items.

Major overhaul and rebuilding expenditures are recognized as a separate asset when future economic benefits are expected from the item, and the cost can be measured reliably.

Ordinary maintenance expenses on manufacturing properties are recorded as cost of products sold in the period in which they are incurred.

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## TERNIUM S.A.

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## 4. ACCOUNTING POLICIES (Continued)

Where a tangible fixed asset comprises major components having different useful lives, these components are accounted for as separate items. Spare parts are included in property, plant and equipment.

Leases where the lessor retains a significant portion of the risks and rewards of ownership are classified as operating leases. Payments made under operating leases (net of any incentives received from the lessor) are charged to the income statement on a straight-line basis over the period of the lease.

Depreciation method is reviewed at each year end. Depreciation is calculated using the straight-line method to amortize the cost of each asset to its residual value over its estimated useful life as follows:

Land	No depreciation
Buildings and improvements	10-50 years
Production equipment	5-40 years
Vehicles, furniture and fixtures and other equipment	3-20 years

Property, plant and equipment used in mining activities are depreciated over its useful life or over the remaining life of the mine if shorter and there is no alternative use possible.

The assets' useful lives are reviewed, and adjusted if appropriate, at each year end. The re-estimation of assets useful lives by the Company did not materially affect depreciation charges in 2018, 2017 and 2016.

Gains and losses on disposals are determined by comparing the proceeds with the corresponding carrying amounts and are included in the income statement.

If the carrying amount of an asset were greater than its estimated recoverable amount, it would be written down to its recoverable amount (see Note 4 (f) "Impairment").

Amortization charges are included in cost of sales, selling, general and administrative expenses.

## (e) Intangible assets

## (1) Information system projects

Generally, costs associated with developing or maintaining computer software programs are recognized as an expense as incurred. However, costs directly related to the acquisition and implementation of information systems are recognized as intangible assets if they have a probable economic benefit exceeding the cost beyond one year and comply with the recognition criteria of IAS 38.

Information system projects recognized as assets are amortized using the straight-line method over their useful lives, not exceeding a period of 3 years. Amortization charges are included in cost of sales, selling, general and administrative expenses.

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4. ACCOUNTING POLICIES (Continued)

(2) Mining assets

Mining assets include:

(a) Mining licenses acquired;

(b) Capitalized exploration and evaluation costs, reclassified from exploration and evaluation costs (see note 4 (e) 3);  
and

(c) Capitalized developmental stripping costs (see note 4 (u)).

Mining licenses were recognized as separate intangible assets upon the acquisition of the investment in Mexico and comprise the right to exploit the mines and are recognized at its fair value at acquisition date less accumulated amortization.

These mining concessions were granted for a 50-year period; following the expiration of the initial concession term, the concessions are renewable for an additional 50-year term in accordance with, and subject to the procedures set forth in, applicable Mexican mining law.

Amortization charge is calculated by using the unit-of-production method, on the basis of actual mineral extracted in each period compared to the estimated mineral reserves, and is included in cost of sales. Any change in the estimation of reserves is accounted for prospectively. The resulting amortization rate for the years ended December 31, 2018, 2017 and 2016, is approximately 8%, 7% and 7% per year, respectively.

(3) Exploration and evaluation costs

Exploration and evaluation activities involve the search for iron ore resources, the determination of technical feasibility and the assessment of commercial viability of an identified resource.

Exploration and evaluation costs are measured at cost. Costs directly associated with exploration and evaluation activities are capitalized as intangible assets until the determination of reserves is evaluated. The costs associated to the acquisition of machinery and equipment are recognized as property, plant and equipment. If it is determined that commercial discovery has been achieved, costs incurred are reclassified into Mining assets and amortization starts once production begins.

Exploration costs are tested for impairment when there are indicators that impairment exists. Indicators of impairment include, but are not limited to:

• Rights to explore in an area have expired or will expire in the near future without renewal;

• No further exploration and evaluation is planned or budgeted;

• A decision to discontinue exploration and evaluation in an area because of the absence of commercial reserves; and

• Sufficient data exists to indicate that the book value will not be fully recovered from future development and production.

When analyzing the existence of impairment indicators, the exploration and evaluation areas from the mining cash-generating units will be evaluated.

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4. ACCOUNTING POLICIES (Continued)

(4) Goodwill

Goodwill represents the excess of the acquisition cost over the fair value of Ternium's participation in acquired companies' net assets at the acquisition date. Under IFRS 3, goodwill is considered to have an indefinite life and not amortized, but is subject to annual impairment testing.

Goodwill is allocated to Cash-generating units ("CGU") for the purpose of impairment testing. The allocation is made to those cash-generating units expected to benefit from the business combination which generated the goodwill being tested. The impairment losses on goodwill cannot be reversed.

As of December 31, 2018 and 2017, the carrying amount of goodwill allocated to the Mexico CGUs was \$662.3 million, of which \$619.8 million corresponds to steel operations and \$42.5 million to mining operations.

(5) Research and development

Research expenditures are recognized as expenses as incurred. Development costs are recorded as cost of sales in the income statement as incurred because they do not fulfill the criteria for capitalization. Research and development expenditures for the years ended December 31, 2018, 2017 and 2016 totaled \$8.9 million, \$9.8 million and \$9.2 million, respectively.

(6) Customer relationships acquired in a business combination

In accordance with IFRS 3 and IAS 38, Ternium has recognized the value of customer relationships separately from goodwill in connection with the acquisitions of Grupo Imsa and Ternium Colombia S.A.S. These customer relationships were amortized using the straight-line method over a useful life of approximately 10 years. As of December 31, 2017, these assets were fully amortized.

In accordance with IFRS 3 and IAS 38, Ternium has recognized the value of customer relationships in connection with the acquisition of Ternium Staal B.V. The value of the slab commitment agreement by which Ternium Investments S.à r.l. is entitled to invoice, under certain conditions, the price difference between slabs and hot rolled coils will be amortized using the units of slabs sold method.

(7) Trademarks acquired in a business combination

In accordance with IFRS 3 and IAS 38, Ternium has recognized the value of trademarks separately from goodwill in connection with the acquisitions of Grupo Imsa and Ternium Colombia S.A.S. As of December 31, 2017, these assets were fully amortized.

Trademarks are amortized using the straight-line method over a useful life of between 5 to 10 years.

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4. ACCOUNTING POLICIES (Continued)

(f) Impairment

Assets that have an indefinite useful life (including goodwill) are not subject to amortization and are tested annually for impairment or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Assets that are subject to amortization and investments in affiliates are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less cost to sell and the value in use.

To carry out these tests, assets are grouped at the lowest levels for which there are separately identifiable cash flows (each, a CGU). When evaluating long-lived assets for potential impairment, the Company estimates the recoverable amount based on the value in use of the corresponding CGU. The value in use of each CGU is determined on the basis of the present value of net future cash flows which will be generated by the assets tested.

Determining the present value of future cash flows involves highly sensitive estimates and assumptions specific to the nature of each CGU's activities, including estimates and assumptions relating to amount and timing of projected future cash flows, expected changes in market prices, expected changes in the demand of Ternium products and services, selected discount rate and selected tax rate.

Ternium uses cash flow projections for the next five years based on past performance and expectations of market development; thereafter, it uses a perpetuity rate. Application of the discounted cash flow (DCF) method to determine the value in use of a CGU begins with a forecast of all expected future net cash flows. Variables considered in forecasts include the gross domestic product (GDP) growth rates of the country under study and their correlation with steel demand, level of steel prices and estimated raw material costs as observed in industry reports.

Cash flows are discounted at rates that reflect specific country and currency risks associated with the cash flow projections. The discount rates used are based on the weighted average cost of capital (WACC), which is considered to be a good indicator of cost of capital. As of December 31, 2018 the discount rate used to test goodwill allocated to the Steel and Mining Mexico CGUs for impairment was 11.68% (as of December 31, 2017, 11.49%).

As a result of the above factors, actual cash flows and values could vary significantly from the forecasted future cash flows and related values derived using discounting techniques. Based on the information currently available, however, Ternium believes that it is not reasonably possible that the variation would cause the carrying amount to exceed the recoverable amount of the CGUs.

Considering the economic situation in Argentina, the increase in the inflation rates, the devaluation of the Argentine peso and a weaker industrial environment, the Company decided to assess the recoverability of its investments in Argentina, resulting in no impairment charges to be recognized. As of December 31, 2018, the discount rate used to test the investment in Argentine subsidiaries for impairment was 13.5%.

During the years 2018, 2017 and 2016, no impairment provisions were recorded in connection with assets that have an indefinite useful life (including goodwill).

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4. ACCOUNTING POLICIES (Continued)

(g) Other investments

Other investments consist primarily of investments in financial debt instruments and equity investments where the Company holds a minor equity interest and does not exert significant influence.

All purchases and sales of investments are recognized on the settlement date, which is not significantly different from the trade date, which is the date that Ternium commits to purchase or sell the investment.

Income from financial instruments at fair value through profit or loss is recognized in Other financial income (expenses), net in the consolidated income statement. The fair value of quoted investments is based on current bid prices. If the market for a financial investment is not active or the securities are not listed, the Company estimates the fair value by using standard valuation techniques. Dividends from investments in equity instruments are recognized in the income statement when the Company's right to receive payments is established.

Certain fixed income financial instruments purchased by the Company have been categorized as at fair value through other comprehensive income. The results of these financial investments are recognized in Finance Income in the Consolidated Income Statement using the effective interest method. Unrealized gains and losses other than impairment and foreign exchange results are recognized in Other comprehensive income. On maturity or disposal, net gain and losses previously deferred in Other comprehensive income are recognized in Finance Income in the Consolidated Income Statement.

(h) Inventories

Inventories are stated at the lower of cost (calculated using the first-in-first-out "FIFO" method) or net realizable value. The cost of finished goods and goods in process comprises raw materials, direct labor, depreciation, other direct costs and related production overhead costs. It excludes borrowing costs. Goods acquired in transit at year end are valued at supplier's invoice cost.

The cost of iron ore produced in our mines comprises all direct costs necessary to extract and convert stockpiled inventories into raw materials, including production stripping costs, depreciation of fixed assets related to the mining activity and amortization of mining assets for those mines under production.

The Company assesses the recoverability of its inventories considering their selling prices, if the inventories are damaged, or if they have become wholly or partially obsolete (see note 4 (bb) (4)).

(i) Trade receivables and other receivables

Trade and other receivables are recognized initially at fair value, generally the original invoice amount. Since January 1, 2018, the Company applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables. To measure the expected credit losses, trade receivables are grouped based on shared credit risk characteristics and the days past due. The Company keeps an allowance for trade receivables, recorded in an asset account to offset the trade receivables in an amount estimated sufficient to cover the losses resulting from the impossibility for the debtors to cancel the amounts owed. This allowance for trade receivables is recorded with a charge to selling expenses.

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4. ACCOUNTING POLICIES (Continued)

(j) Cash and cash equivalents

Cash and cash equivalents and highly liquid short-term securities are carried at fair market value or at a historical cost which approximates fair market value.

For purposes of the cash flow statement, cash and cash equivalents comprise cash, bank current accounts and short-term highly liquid investments (original maturity of three months or less at date of acquisition) and overdrafts. In the consolidated statement of financial position, bank overdrafts are included in borrowings within current liabilities.

(k) Non-current assets (disposal groups) classified as held for sale

Non-current assets (disposal groups) are classified as assets held for sale, complying with the recognition criteria of IFRS 5, and stated at the lower of carrying amount and fair value less cost to sell if their carrying amount is recovered principally through a sale transaction rather than through continuing use.

The carrying value of non-current assets classified as held for sale, at December 31, 2018 and 2017 totals \$2.1 million and \$2.8 million, respectively, which corresponds principally to land and other real estate items. Sale is expected to be completed within a one-year period.

(l) Borrowings

Borrowings are recognized initially for an amount equal to the net proceeds received. In subsequent periods, borrowings are stated at amortized cost following the effective interest method.

(m) Finance leases

Leases of property, plant and equipment where the Company, as lessee, has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease's inception at the fair value of the leased property or, if lower, the present value of the minimum lease payments. The corresponding rental obligations, net of finance charges, are included in other short-term and long-term payables. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to the profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The property, plant and equipment acquired under finance leases is depreciated over the asset's useful life or over the shorter of the asset's useful life and the lease term if there is no reasonable certainty that the Company will obtain ownership at the end of the lease term.

(n) Income taxes - current and deferred

The current income tax charge is calculated on the basis of the tax laws in force in the countries in which Ternium and its subsidiaries operate. Management evaluates positions taken in tax returns with respect to situations in which applicable tax regulation could be subject to interpretation. A liability is recorded for tax benefits that were taken in the applicable tax return but have not been recognized for financial reporting.

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#### 4. ACCOUNTING POLICIES (Continued)

Deferred income taxes are calculated using the liability method on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. Deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting, nor taxable profit or loss. The principal temporary differences arise on fixed assets, intangible assets, inventories valuation and provisions for pensions. Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period when the asset is realized or the liability is settled, based on tax rates and tax laws that have been enacted or substantially enacted at year end. Under IFRS, deferred income tax assets (liabilities) are classified as non-current assets (liabilities).

Deferred tax assets are recognized to the extent it is probable that future taxable income will be available to offset temporary differences.

Deferred income tax is provided on temporary differences arising on investments in subsidiaries and associated companies, except where the timing of the reversal of the temporary difference is controlled by the Company and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred tax assets and liabilities are re-estimated if tax rates change. These amounts are charged or credited to the consolidated income statement or to the item "Other comprehensive income for the year" in the consolidated statement of comprehensive income, depending on the account to which the original amount was charged or credited.

##### (o) Employee liabilities

##### (1) Post-employment obligations

The Company has defined benefit and defined contribution plans. A defined benefit plan is a pension plan that defines an amount of pension benefit that an employee will receive on retirement, usually dependent on one or more factors such as age, years of service and compensation.

The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually (at year end) by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related pension obligation. In countries where there is no deep market in such bonds, the market rates on government bonds are used.

Actuarial gains and losses arising from experience adjustments and changes in actuarial assumptions are charged or credited to equity in other comprehensive income in the period in which they arise. Past-service costs are recognized immediately in income.

For defined benefit plans, net interest income/expense is calculated based on the surplus or deficit derived by the difference between the defined benefit obligations less plan assets.

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Consolidated Financial Statements as of December 31, 2018 and 2017  
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#### 4. ACCOUNTING POLICIES (Continued)

For defined contribution plans, the Company pays contributions to publicly or privately administered pension insurance plans on a mandatory, contractual or voluntary basis. The Company has no further payment obligations once the contributions have been paid. The contributions are recognized as employee benefit expense when they are due. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in the future payments is available.

##### Mexico

Ternium Mexico has defined benefit and defined contribution plans.

The valuation of the liabilities for the defined benefit employee retirement plans (pensions and seniority premiums) covers all employees and is based primarily on their years of service, their present age and their remuneration at the date of retirement. The cost of the employee retirement plans (pension, health-care expenses and seniority premiums) is recognized as an expense in the year in which services are rendered in accordance with actuarial studies made by independent actuaries. The formal retirement plans are congruent with and complementary to the retirement benefits established by the Mexican Institute of Social Security. Additionally, the Company has established a plan to cover health-care expenses of retired employees. The Company has established a commitment for the payment of pensions and seniority premiums, as well as for health-care expenses.

The defined contribution plans provide a benefit equivalent to the capital accumulated with the company's contributions, which are provided as a match of employees' contributions to the plan. The plan provides vested rights according to the years of service and the cause of retirement.

##### Argentina

Ternium Argentina implemented an unfunded defined benefit employee retirement plan for certain senior officers. The plan is designed to provide certain benefits to those officers (additional to those contemplated under applicable Argentine labor laws) in case of termination of the employment relationship due to certain specified events, including retirement. This unfunded plan provides defined benefits based on years of service and final average salary.

##### (2) Termination benefits

Termination benefits are payable when employment is terminated before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Company recognizes termination benefits when it is demonstrably committed to either: (i) terminating the employment of current employees according to a detailed formal plan without possibility of withdrawal or (ii) providing termination benefits as a result of an offer made to encourage voluntary redundancy.

##### (3) Other compensation obligations

Employee entitlements to annual leave and long-service leave are accrued as earned.



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4. ACCOUNTING POLICIES (Continued)

During 2007, Ternium launched an incentive retention program (the "Program") applicable to certain senior officers and employees of the Company, who will be granted a number of Units throughout the duration of the Program. The value of each of these Units is based on Ternium's shareholders' equity (excluding non-controlling interest). Also, the beneficiaries of the Program are entitled to receive cash amounts based on (i) the amount of dividend payments made by Ternium to its shareholders, and (ii) the number of Units held by each beneficiary to the Program. Units vest ratably over a period of four years and will be redeemed by the Company ten years after grant date, with the option of an early redemption at seven years after grant date. As the cash payment of the benefit is tied to the book value of the shares, and not to their market value, Ternium valued this long-term incentive program as a long term benefit plan as classified in IAS 19.

As of December 31, 2018 and 2017, the outstanding liability corresponding to the Program amounts to \$43.0 million and \$30.8 million, respectively. The total value of the units granted to date under the program, considering the number of units and the book value per share as of December 31, 2018 and 2017, is \$42.2 million and \$30.3 million, respectively.

Under Mexican law, Ternium's subsidiaries are required to pay their employees an annual benefit which is determined as a percentage of taxable profit for the year.

(4) Social security contributions

Social security laws in force in the countries in which the Company operates provide for pension benefits to be paid to retired employees from government pension plans and/or private fund managed plans to which employees may elect to contribute. As stipulated by the respective laws, Ternium Argentina and Ternium Mexico make monthly contributions calculated based on each employee's salary to fund such plans. The related amounts are expensed as incurred. No additional liabilities exist once the contributions are paid.

(p) Provisions and other liabilities

Ternium has certain contingencies with respect to existing or potential claims, lawsuits and other proceedings. Unless otherwise specified, Ternium accrues a provision for a present legal or constructive obligation as a result of a past event, when it is probable that future cost could be incurred and that cost can be reasonably estimated. Generally, accruals are based on developments to date, Ternium's estimates of the outcomes of these matters and the advice of Ternium's legal advisors.

(q) Trade payables

Trade payables are recognized initially at fair value and subsequently measured at amortized cost using the effective interest method.

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4. ACCOUNTING POLICIES (Continued)

(r) Revenue recognition and other income

Revenue is recognized at a point of time from sales to direct customers upon the satisfaction of performance obligations, which occurs when control of the goods transfers to the customer and the customer obtains the benefits from the goods, the potential cash flows and the transaction price can be measured reliably, and it is probable that the Company will collect the consideration in connection with the exchange of the goods. The control over the goods is obtained by the customer depending on when the goods are made available to the shipper or the customer takes possession of the goods, depending on the delivery terms. The Company considers that it has completed its performance obligations when the goods are delivered to its customers or to a shipper who will transport the goods to its customers. The revenue recognized by the Company is measured at the transaction price of the consideration received or receivable to which the Company is entitled to, reduced by estimated returns and other customer credits, such as discounts and volume rebates, based on the expected value to be realized and after eliminating sales within the group.

Interest income is recognized on an effective yield basis.

(s) Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

Other borrowing costs are expensed in the period in which they are incurred.

The amount of borrowing costs that Ternium capitalized during a period will not exceed the amount of borrowing costs incurred during that period. At December 31, 2018, 2017 and 2016, the capitalized borrowing costs were of \$7.4 million, \$0.5 million and \$1.7 million, respectively.

(t) Cost of sales, selling, general and administrative expenses

Cost of sales and expenses are recognized in the income statement on the accrual basis of accounting.

Commissions, freight and other selling expenses, including shipping and handling costs, are recorded in Selling, general and administrative expenses in the Consolidated Income Statement.

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#### 4. ACCOUNTING POLICIES (Continued)

##### (u) Stripping costs

Stripping costs are the costs associated with the removal of overburden and other waste materials and can be incurred before the mining production commences (“development stripping”) or during the production stage (“production stripping”).

Development stripping costs that contribute to the future economic benefits of mining operations are capitalized as intangible assets (Mining assets). Production stripping costs which are part of on-going activities are included in the cost of the inventory produced (that is extracted) at each mine during the period in which they are incurred.

Capitalization of development stripping costs finishes when the commercial production of the mine commences. At that time, all development stripping costs are presented within Mining assets and depreciated on a unit-of-production basis. It is considered that commercial production begins when the production stage of mining operations begins and continues throughout the life of a mine.

##### (v) Mining development costs

Mining development costs are the costs associated to the activities related to the establishment of access to the mineral reserve and other preparations for commercial production. These activities often continue during production.

Development expenditures are capitalized and classified as Work in progress. On completion of development, all assets included in Work in progress are individually reclassified to the appropriate category of property, plant and equipment and depreciated accordingly.

##### (w) Asset retirement obligations

Ternium records asset retirement obligations (“ARO”) initially at the fair value of the legal or constructive obligation in the period in which it is incurred and capitalizes the ARO by increasing the carrying amount of property, plant and equipment. The fair value of the obligation is determined as the discounted value of the expected future cash flows and is included in Provisions. The liability is accreted to its present value through net financing cost and the capitalized cost is depreciated based in the unit of production method.

##### (x) Earnings per share

Earnings per share are calculated by dividing the net income attributable to shareholders by the daily weighted average number of ordinary shares issued during the year, excluding the average number of shares of the parent Company held by the Group. There are no dilutive securities for the periods presented.

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TERNIUM S.A.

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4. ACCOUNTING POLICIES (Continued)

(y) Derivative financial instruments and hedging activities

Ternium designates certain derivatives as hedges of a particular risk associated with a recognized asset or liability or a highly probable forecast transaction. These transactions are classified as cash flow hedges (mainly interest rate swaps, collars, currency forward contracts on highly probable forecast transactions and commodities contracts). The effective portion of the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in OCI.

Amounts accumulated in OCI are recognized in the income statement in the same period as any offsetting losses and gains on the hedged item. The gain or loss relating to the ineffective portion is recognized immediately in the income statement. The fair value of Ternium derivative financial instruments (asset or liability) continues to be reflected in the statement of financial position.

For transactions designated and qualifying for hedge accounting, Ternium documents the relationship between hedging instruments and hedged items, as well as its risk management objectives and strategy for undertaking various hedge transactions. At December 31, 2018 and 2017, the effective portion of designated cash flow hedges (net of taxes) amounted to \$0.5 million and \$0.7 million, respectively, and were included under "changes in the fair value of derivatives classified as cash flow hedges" line item in the statement of comprehensive income (see Note 27 (a)).

More information about accounting for derivative financial instruments and hedging activities is included in Note 29 "Financial risk management".

(z) Treasury shares

Acquisitions of treasury shares are recorded at acquisition cost, deducted from equity until disposal. The gains and losses on disposal of treasury shares are recognized under "Reserves" in the consolidated statement of financial position.

(aa) Cash flow

The consolidated statements of cash flows have been prepared using the indirect method and contain the use of the following expressions and their respective meanings:

- a) Operating activities: activities that constitute ordinary Group revenues, as well as other activities that cannot be qualified as investing or financing.
- b) Investing activities: acquisition, sale or disposal by other means of assets in the long-term and other investments not included in cash and cash equivalents.
- c) Financing activities: activities that generate changes in the size and composition of net equity and liabilities that do not form part of operating activities.

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#### 4. ACCOUNTING POLICIES (Continued)

##### (bb) Critical Accounting Estimates

The preparation of financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and the related disclosure of contingent assets and liabilities. Estimates and judgments are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Management makes estimates and assumptions concerning the future. Actual results may differ significantly from these estimates under different assumptions or conditions.

The principal estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are addressed below.

##### (1) Goodwill impairment test

Assessment of the recoverability of the carrying value of goodwill requires significant judgment. Management evaluates goodwill allocated to the operating units for impairment on an annual basis or whenever there is an impairment indicator.

Goodwill is tested at the level of the CGUs. Impairment testing of the CGUs is carried out and the value in use determined in accordance with the accounting policy stated in Note 4(f). The discount rates used for these tests are based on Ternium's weighted average cost of capital adjusted for specific country and currency risks associated with the cash flow projections. The discount rate used at December 31, 2018 was 11.68% and no impairment charge resulted from the impairment test performed. See notes 4(f) and 4(e)(4).

##### (2) Income taxes

Management calculates current and deferred income taxes according to the tax laws applicable to each subsidiary in the countries in which such subsidiaries operate. However, certain adjustments necessary to determine the income tax provision are finalized only after the balance sheet is issued. In cases in which the final tax outcome is different from the amounts that were initially recorded, such differences will impact the income tax and deferred tax provisions in the period in which such determination is made.

Also, when assessing the recoverability of tax assets, management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax planning strategies.

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4. ACCOUNTING POLICIES (Continued)

(3) Loss contingencies

Ternium is subject to various claims, lawsuits and other legal proceedings that arise in the ordinary course of business, including customer claims in which a third party is seeking reimbursement or indemnity. The Company's liability with respect to such claims, lawsuits and other legal proceedings cannot be estimated with certainty. Periodically, management reviews the status of each significant matter and assesses potential financial exposure. If the potential loss from the claim or proceeding is considered probable and the amount can be reasonably estimated, a liability is recorded. Management estimates the amount of such liability based on the information available and the assumptions and methods it has concluded are appropriate, in accordance with the provisions of IFRS. Accruals for such contingencies reflect a reasonable estimate of the losses to be incurred based on information available, including the relevant litigation or settlement strategy, as of the date of preparation of these financial statements. As additional information becomes available, management will reassess its evaluation of the pending claims, lawsuits and other proceedings and revise its estimates. The loss contingencies provision amounts to \$643.9 million and \$768.5 million as of December 31, 2018 and 2017, respectively.

(4) Allowance for obsolescence of supplies and spare parts and slow-moving inventory

Management assesses the recoverability of its inventories considering their selling prices or whether they are damaged or have become wholly or partly obsolete.

Net realizable value is the estimated selling price in the ordinary course of business, less the costs of completion and selling expenses.

The Company establishes an allowance for obsolete or slow-moving inventory in connection with finished goods and goods in process. The allowance for slow-moving inventory is recognized for finished goods and goods in process based on management's analysis of their aging. In connection with supplies and spare parts, the calculation is based on management's analysis of their aging, the capacity of such materials to be used based on their levels of preservation and maintenance, and their potential obsolescence due to technological change.

As of December 31, 2018 and 2017, the Company recorded no allowance for net realizable value and \$55.5 million and \$36.2 million, respectively, as allowance for obsolescence.

(5) Useful Lives and Impairment of Property, Plant and Equipment and Other Long-lived Assets

In determining useful lives, management considered, among others, the following factors: age, operating condition and level of usage and maintenance. Management conducted visual inspections for the purpose of (i) determining whether the current conditions of such assets are consistent with normal conditions of assets of similar age; (ii) confirming that the operating conditions and levels of usage of such assets are adequate and consistent with their design; (iii) establishing obsolescence levels and (iv) estimating life expectancy, all of which were used in determining useful lives. Management believes, however, that it is possible that the periods of economic utilization of property, plant and equipment may be different than the useful lives so determined. Furthermore, management believes that this accounting policy involves a critical accounting estimate because it is subject to change from period to period as a result of variations in economic conditions and business performance.

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4. ACCOUNTING POLICIES (Continued)

When assessing whether an impairment indicator may exist, the Company evaluates both internal and external sources of information, such as the following:

whether significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated;

whether market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset's value in use and decrease the asset's recoverable amount materially;

whether the carrying amount of the net assets of the entity is more than its market capitalization;

whether evidence is available of obsolescence or physical damage of an asset.

whether significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used.

These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, plans to dispose of an asset before the previously expected date, and reassessing the useful life of an asset as finite rather than indefinite; and

whether evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected.

Considering the economic situation in Argentina, the Company tested the recoverability of its investment in Ternium Argentina as of December 31, 2018, resulting in no impairment charges to be recognized.

Considering that no impairment indicators were identified in the rest of subsidiaries as of December 31, 2018 and 2017, the Company additionally tested the value of the goodwill for impairment, resulting in no impairment charges to be recognized.

(6) Allowances for doubtful accounts

Management makes estimates of the uncollectibility of our accounts receivable. Management analyses the trade accounts receivable on a regular basis and applies the IFRS 9 simplified approach to measuring expected credit losses, which uses a lifetime expected loss allowance for all trade receivables. To measure the expected credit losses, trade receivables are grouped based on shared credit risk characteristics and the days past due.

Allowances for doubtful accounts are adjusted periodically in accordance with the results obtained in the provision matrix. To calibrate the provision matrix, Management adjusts its historical credit loss experience with current and forward-looking information that might affect the customers' historical default rates. As of December 31, 2018 and 2017, allowance for doubtful accounts totals \$14.3 million and \$16.5 million, respectively.

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4. ACCOUNTING POLICIES (Continued)

(7) Mining reserve estimates

Reserves are estimates of the amount of product that can be economically and legally extracted from the Company's mining concessions. In order to estimate reserves, a range of geological, technical and economic factors is required to be considered. Estimating the quantity and/or grade of reserves requires complex and difficult geological judgments to interpret the data. Because the economic assumptions used to estimate reserves change from period to period, and because additional geological data is generated during the course of operations, estimates of reserves may change from period to period.

Changes in reported reserves may affect the Company's financial results and financial position, including the following:

• Asset carrying amounts may be affected due to changes in estimated future cash flows.

• Depreciation and amortization charges may change where such charges are determined by the units of production basis, or where the useful economic lives of assets change.

• Stripping costs recognized in Mining assets or charged to results may change due to changes in stripping ratios or the units of production basis of depreciation.

• Asset retirement obligations may change where changes in estimated reserves affect expectations about the timing or cost of these activities.

(8) Post-employment obligation estimates

The Company estimates at each year-end the provision necessary to meet its post-employment obligations in accordance with the advice from independent actuaries. The calculation of post-employment and other employee obligations requires the application of various assumptions. The main assumptions for post-employment and other employee obligations include discount rates, compensation growth rates, pension growth rates and life expectancy. Changes in the assumptions could give rise to adjustments in the results and liabilities recorded and might have an impact on the post-employment and other employee obligations recognized in the future.

(9) Business combinations

The recognition of business combinations requires the excess of the purchase price of acquisitions over the net book value of assets acquired to be allocated to the assets and liabilities of the acquired entity. The Company makes judgments and estimates in relation to the fair value allocation of the purchase price. If any unallocated portion is positive, it is recognized as goodwill, and if negative, it is recognized in the income statement. See further information in Note 3.



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#### 4. ACCOUNTING POLICIES (Continued)

(cc) Application of IAS 29 in financial reporting of Argentine subsidiaries and associates

IAS 29 “Financial Reporting in Hyperinflationary Economies” requires that the financial statements of entities whose functional currency is that of a hyperinflationary economy to be adjusted for the effects of changes in a suitable general price index and to be expressed in terms of the current unit of measurement at the closing date of the reporting period. Accordingly, the inflation produced from the date of acquisition or from the revaluation date, as applicable, must be computed in the non-monetary items.

In order to conclude on whether an economy is categorized as hyperinflationary under the terms of IAS 29, the Standard details a series of factors to be considered, including the existence of a cumulative inflation rate in three years that approximates or exceeds 100%.

Considering that the downward trend in inflation in Argentina observed in the previous year has reversed and observing a significant increase in inflation during 2018, which exceeded the 100% three-year cumulative inflation rate, and that the rest of the indicators do not contradict the conclusion that Argentina should be considered a hyperinflationary economy for accounting purposes, the Company considered that there was sufficient evidence to conclude that Argentina is a hyperinflationary economy under the terms of IAS 29 as from July 1, 2018, and, accordingly, applied IAS 29 as from that date in the financial reporting of its subsidiaries and associates with the Argentine peso as functional currency.

According to this principle, the financial statements of an entity that reports in the currency of a hyperinflationary economy should be stated in terms of the measuring unit current on the date of the financial statements. All statement of financial position amounts that are not stated in terms of the measuring unit current on the date of the financial statements must be restated by applying a general price index. All income statement components must be stated in terms of the measuring unit current on the date of the financial statements, applying the change in the general price index that occurred since the date when revenues and expenses were originally recognized in the financial statements. The inflation adjustment on the initial balances was calculated by means of conversion factor derived from the Argentine price indexes published by the National Institute of Statistics (“INDEC”). The average index for the year period ended December 31, 2018, was 1.48.

The main procedures for the above-mentioned adjustment are as follows:

• Monetary assets and liabilities which are carried at amounts current at the balance sheet date are not restated because they are already expressed in terms of the monetary unit current at the balance sheet date.

• Non-monetary assets and liabilities which are not carried at amounts current at the balance sheet date, and components of shareholders' equity are adjusted by applying the relevant conversion factors.

• All items in the income statement are restated by applying the relevant conversion factors.

• The effect of inflation on the Company's net monetary position is included in the income statement, in Other financial income (expenses), net, under the caption “Inflation adjustment results”.

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4. ACCOUNTING POLICIES (Continued)

The ongoing application of the re-translation of comparative amounts to closing exchange rates under IAS 21 and the hyperinflation adjustments required by IAS 29 will lead to a difference in addition to the difference arising on the adoption of hyperinflation accounting.

The comparative figures in these consolidated financial statements presented in a stable currency are not adjusted for subsequent changes in the price level or exchange rates. This resulted in an initial difference, arising on the adoption of hyperinflation accounting, between the closing equity of the previous year and the opening equity of the current year. The Company recognized this initial difference directly in equity.

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## 5. SEGMENT INFORMATION

### REPORTABLE OPERATING SEGMENTS

The Company is organized in two reportable segments: Steel and Mining.

The Steel segment includes the sales of steel products, which comprises slabs, hot rolled coils and sheets, cold rolled coils and sheets, tin plate, welded pipes, hot dipped galvanized and electro-galvanized sheets, pre-painted sheets, billets (steel in its basic, semi-finished state), wire rod and bars and other tailor-made products to serve its customers' requirements.

It also includes the sales of energy.

The Steel segment comprises four operating segments: Mexico, Southern Region, Brazil and Other markets. These four segments have been aggregated considering the economic characteristics and financial effects of each business activity in which the entity engages; the related economic environment in which it operates; the type or class of customer for the products; the nature of the products; and the production processes. The Mexico operating segment comprises the Company's businesses in Mexico. The Southern region operating segment manages the businesses in Argentina, Paraguay, Chile, Bolivia and Uruguay. The Brazil operating segment includes the business generated in Brazil. The Other markets operating segment includes businesses mainly in United States, Colombia, Guatemala, Costa Rica, Honduras, El Salvador and Nicaragua.

The Mining segment includes the sales of mining products, mainly iron ore and pellets, and comprises the mining activities of Las Encinas, an iron ore mining company in which Ternium holds a 100% equity interest and the 50% of the operations and results performed by Peña Colorada, another iron ore mining company in which Ternium maintains that same percentage over its equity interest. Both mining operations are located in Mexico. For Peña Colorada, the Company recognizes its assets, liabilities, revenue and expenses in relation to its interest in the joint operation. Ternium's Chief Operating Decision Maker (CEO) holds monthly meetings with senior management, in which operating and financial performance information is reviewed, including financial information that differs from IFRS principally as follows:

- The use of direct cost methodology to calculate the inventories, while under IFRS is at full cost, including absorption of production overheads and depreciation.

- The use of costs based on previously internally defined cost estimates, while, under IFRS, costs are calculated at historical cost (with the FIFO method).

- Other timing and non-significant differences.

Most information on segment assets is not disclosed as it is not reviewed by the CEO.

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## TERNIUM S.A.

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## 5. SEGMENT INFORMATION (continued)

	Year ended December 31, 2018			
	Steel	Mining	Inter-segment eliminations	Total
<b>IFRS</b>				
Net sales	11,453,420	282,000	(280,613 )	11,454,807
Cost of sales	(8,524,890 )	(239,893 )	281,455	(8,483,328 )
Gross profit	2,928,530	42,107	842	2,971,479
Selling, general and administrative expenses	(860,881 )	(15,883 )	—	(876,764 )
Other operating income, net	12,950	706	—	13,656
Operating income - IFRS	2,080,599	26,930	842	2,108,371
<b>Management view</b>				
Net sales	11,723,883	333,892	(332,505 )	11,725,270
Operating income	1,768,115	91,418	(6,213 )	1,853,319
Reconciliation items:				
Differences in Cost of sales				541,492
Effect of inflation adjustment (Note 4 (cc))				(286,440 )
Operating income - IFRS				2,108,371
Financial income (expense), net				(179,576 )
Equity in earnings (losses) of non-consolidated companies				102,772
Income before income tax expense - IFRS				2,031,567
Depreciation and amortization - IFRS	(537,885 )	(51,415 )	—	(589,299 )
The effect of the application of IAS 29 - Hyperinflationary economies in Argentina is only allocated in the Steel segment, having an impact of \$(270) million on Net sales, \$(38) million in Cost of sales, \$24 million in Selling, general and administrative expenses and \$(3) million in Other operating expenses, net.				
	Year ended December 31, 2017			
	Steel	Mining	Inter-segment eliminations	Total
<b>IFRS</b>				
Net sales	9,700,260	271,477	(271,441 )	9,700,296
Cost of sales	(7,465,751 )	(212,860 )	275,586	(7,403,025 )

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Gross profit	2,234,509	58,617	4,145	2,297,271
Selling, general and administrative expenses	(811,487 )	(12,760 )	—	(824,247 )
Other operating income, net	(17,011 )	771	—	(16,240 )
Operating income - IFRS	1,406,011	46,628	4,145	1,456,784
Management view				
Net sales	9,700,260	287,152	(287,116 )	9,700,296
Operating income	1,065,605	66,694	(1,291 )	1,131,008
Reconciliation items:				
Differences in Cost of sales				325,776
Operating income - IFRS				1,456,784
Financial income (expense), net				(165,090 )
Equity in earnings (losses) of non-consolidated companies				68,115
Income before income tax expense - IFRS				1,359,809
Depreciation and amortization - IFRS	(424,529 )	(49,770 )	—	(474,299 )

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## 5. SEGMENT INFORMATION (continued)

	Year ended December 31, 2016			
	Steel	Mining	Inter- segment eliminations	Total
<b>IFRS</b>				
Net sales	7,221,751	204,894	(202,670 )	7,223,975
Cost of sales	(5,391,038)	(192,038)	198,686	(5,384,390)
Gross profit	1,830,713	12,856	(3,984 )	1,839,585
Selling, general and administrative expenses	(677,007 )	(10,935 )	—	(687,942 )
Other operating income, net	(9,543 )	(382 )	—	(9,925 )
Operating income - IFRS	1,144,163	1,539	(3,984 )	1,141,718
<b>Management view</b>				
Net sales	7,221,751	208,230	(206,006 )	7,223,975
Operating income	936,164	3,871	269	940,303
Reconciliation items:				
Differences in Cost of sales				201,415
Operating income - IFRS				1,141,718
Financial income (expense), net				(37,885 )
Equity in earnings (losses) of non-consolidated companies				14,624
Income before income tax expense - IFRS				1,118,457
Depreciation and amortization - IFRS	(361,685 )	(45,205 )	—	(406,890 )

## GEOGRAPHICAL INFORMATION

The Company has revenues attributable to the Company's country of incorporation (Luxembourg), related to a contract acquired as a part of the business combination disclosed in note 3.

For purposes of reporting geographical information, net sales are allocated based on the customer's location.

Allocation of depreciation and amortization is based on the geographical location of the underlying assets.

Year ended December 31, 2018

	Mexico	Southern region	Brazil and Other markets	Total
			(2)	
Net sales	6,345,137	1,941,168	3,168,502	11,454,807

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Non-current assets (1)	4,093,288	1,071,705	1,665,140	6,830,133
Year ended December 31, 2017				
			Brazil	
	Mexico	Southern region	and Other markets	Total
			(2)	

Net sales 5,629,267 2,316,444 1,754,585 9,700,296

Non-current assets (1)	4,042,914	643,411	1,756,007	6,442,332
Year ended December 31, 2016				
	Mexico	Southern region	Other markets	Total

Net sales 4,491,761 1,867,622 864,592 7,223,975

Non-current assets (1) 4,108,539 634,048 235,947 4,978,534

(1) Includes Property, plant and equipment and Intangible assets.

(2) Includes the assets related to the business acquisition disclosed in note 3.

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## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017  
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## 5. SEGMENT INFORMATION (continued)

## REVENUES BY PRODUCT

	Year ended December 31,		
	2018	2017	2016
Semi-finished (1)	103,099	123,752	19,878
Slabs	1,818,235	715,513	—
Hot rolled (2)	3,961,144	3,366,697	2,763,403
Cold rolled	1,264,940	1,321,663	1,110,671
Coated (3)	3,506,040	3,391,328	2,900,009
Roll-formed and tubular (4)	437,514	472,253	413,991
Other products (5)	363,835	309,090	16,023
<b>TOTAL SALES</b>	<b>11,454,807</b>	<b>9,700,296</b>	<b>7,223,975</b>

(1) Semi-finished includes billets and round bars.

(2) Hot rolled includes hot rolled flat products, merchant bars, reinforcing bars, stirrups and rods.

(3) Coated includes tin plate and galvanized products.

(4) Roll-formed and tubular includes tubes, beams, insulated panels, roofing and cladding, roof tiles, steel decks and pre-engineered metal building systems.

(5) Other products include mainly sales of energy and pig iron.

## 6. COST OF SALES

	Year ended December 31,		
	2018	2017	2016
Inventories at the beginning of the year	2,550,930	1,647,869	1,579,120
Acquisition of business (Note 3)	—	400,047	—
Effect of initial inflation adjustment (Note 4 (cc))	191,708	—	—
Translation differences	(413,436 )	(97,148 )	(82,515 )
<b>Plus: Charges for the year</b>			
Raw materials and consumables used and other movements	6,961,704	6,337,283	4,060,783
Services and fees	158,551	110,949	77,698
Labor cost	699,447	673,821	560,513
Depreciation of property, plant and equipment	456,522	348,415	314,649
Amortization of intangible assets	25,374	35,275	40,225
Maintenance expenses	519,625	480,496	457,734
Office expenses	8,586	7,350	7,112
Insurance	8,769	7,968	8,432
Charge of obsolescence allowance	17,322	(4,028 )	4,600
Recovery from sales of scrap and by-products	(27,744 )	(25,973 )	(21,010 )
Others	15,799	31,631	24,918
<b>Less: Inventories at the end of the year</b>	<b>(2,689,829)</b>	<b>(2,550,930)</b>	<b>(1,647,869)</b>



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Cost of Sales	8,483,328	7,403,025	5,384,390
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## 7. SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

	Year ended December 31,		
	2018	2017	2016
Services and fees (1)	76,066	86,990	65,965
Labor cost	241,552	229,529	193,118
Depreciation of property, plant and equipment	13,561	12,345	13,589
Amortization of intangible assets	93,842	78,264	38,427
Maintenance and expenses	5,096	5,038	3,092
Taxes	95,072	98,786	90,166
Office expenses	35,663	35,922	36,223
Freight and transportation	300,676	259,898	234,801
Increase of allowance for doubtful accounts	1,629	685	288
Others	13,607	16,790	12,273
Selling, general and administrative expenses	876,764	824,247	687,942

(1) For the year ended December 31, 2018, it includes fees accrued for professional services rendered by PwC to Ternium S.A. and its subsidiaries that amounted to \$4,704, including \$3,937 for audit services, \$61 for audit-related services, \$281 for tax services and \$425 for all other services.

For the year ended December 31, 2017, it includes fees accrued for professional services rendered by PwC to Ternium S.A. and its subsidiaries that amounted to \$3,501, including \$2,863 for audit services, \$91 for audit-related services, \$229 for tax services and \$318 for all other services.

For the year ended December 31, 2016, it includes fees accrued for professional services rendered by PwC to Ternium S.A. and its subsidiaries that amounted to \$3,385, including \$2,869 for audit services, \$99 for audit-related services, \$251 for tax services and \$166 for all other services.

## 8. LABOR COSTS (Included Cost of sales and Selling, General and Administrative expenses)

	Year ended December 31,		
	2018	2017	2016
Wages, salaries and social security costs	884,536	849,354	698,825
Termination benefits	26,601	25,783	27,048
Post-employment benefits (Note 21 (i))	29,862	28,213	27,758
Labor costs	940,999	903,350	753,631

As of December 31, 2018, 2017 and 2016, the quantity of employees was 20,660, 21,335 and 16,725, respectively.

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## 9. OTHER OPERATING INCOME (EXPENSES), NET

	Year ended December 31,		
	2018	2017	2016
Results of sundry assets	1,895	1,190	1,270
Provision for legal claims and other matters (Note 19 and 25 (ii))	7,625	—	—
Other operating income	4,136	—	—
Other operating income	13,656	1,190	1,270
Provision for legal claims and other matters (Note 19 and 25 (ii))	—	(2,783 )	(1,678 )
Other operating expense	—	(14,647)	(9,517 )
Other operating expense	—	(17,430)	(11,195)
Other operating (expenses) income, net	13,656	(16,240)	(9,925 )

## 10. OTHER FINANCIAL INCOME (EXPENSES), NET

	Year ended December 31,		
	2018	2017	2016
Interest expense	(131,172)	(114,583)	(89,971)
Finance expense	(131,172)	(114,583)	(89,971)
Interest income	21,236	19,408	14,129
Finance income	21,236	19,408	14,129
Net foreign exchange (loss) gain	(177,645)	(65,479 )	20,334
Inflation adjustment results (Note 4 (cc))	191,427	—	—
Change in fair value of financial assets	—	(1,057 )	7,663
Derivative contract results	(99,259 )	4,132	11,614
Others	15,837	(7,511 )	(1,654 )
Other financial income (expenses), net	(69,640 )	(69,915 )	37,957

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## 11. INCOME TAX EXPENSE

Income tax expense for each of the years presented is as follows:

	Year ended December 31,		
	2018	2017	2016
Current tax	(588,773)	(450,384)	(394,045)
Effect of changes in tax law (1)	(28,596 )	—	—
Deferred tax (Note 20)			
Deferred tax	232,485	106,047	(16,821 )
Effect of changes in tax law (1)	—	7,455	2,028
Withholding tax on dividend distributions (2)	—	—	(2,690 )
Recovery of income tax (3)	15,449	—	—
Income tax expense	(369,435)	(336,882)	(411,528)

(1) For 2018, it includes mainly the option exercised by the Company of the asset revaluation for tax purpose in Argentina, for which an amount of \$28.6 millions was included. The option was formally presented on March 28, 2019. For 2017, it includes the effects of the Argentine tax reform, which became effective starting January 1, 2018, including a reduction in the corporate income tax rate from 35% to 30% during the first two years (i.e., fiscal years starting on or after January 1, 2018 until December 31, 2019, inclusive) and to 25% going forward. Also, a one-time tax on an asset revaluation for tax purposes was approved.

It also includes the effects of the U.S. tax reform, which among other provisions, reduced the U.S. corporate tax rate from 35% to 21%, effective January 1, 2018. This required a revaluation of the deferred tax assets and liabilities and certain current tax payables to the newly enacted tax rates at the date of enactment. Consequently, the Company has recorded a net adjustment to deferred income tax benefit of \$5.2 million for the year ended December 31, 2017.

For 2016, it includes mainly the effects of the Colombian tax rate reform which introduced an increase from 39% to 40% in 2016, 42% in 2017, 43% in 2018 and of the Mexican mining tax.

(2) It includes the 10% withholding tax on dividend distributions made by Argentine companies to foreign beneficiaries since 2013.

(3) It includes the recovery of tax credits in Ternium Brasil Ltda.

Income tax expense for the years ended December 31, 2018, 2017 and 2016 differed from the amount computed by applying the statutory income tax rate in force in each country in which the company operates to pre-tax income as a result of the following:

	Year ended December 31,		
	2018	2017	2016
Income before income tax	2,031,567	1,359,809	1,118,457
Income tax expense at statutory tax rate	(604,493 )	(387,666 )	(324,592 )
Non taxable income	102,870	16,232	606
Non deductible expenses	(16,201 )	(24,070 )	(5,838 )
Effect of currency translation on tax base (1)	161,536	51,167	(81,042 )
Recovery of income tax	15,449	—	—
Withholding tax on dividend distributions	—	—	(2,690 )
Effect of changes in tax law	(28,596 )	7,455	2,028

Income tax expense (369,435 ) (336,882 ) (411,528 )

(1) Ternium applies the liability method to recognize deferred income tax on temporary differences between the tax bases of assets and their carrying amounts in the financial statements. By application of this method, Ternium recognizes gains and losses on deferred income tax due to the effect of the change in the value on the tax basis in subsidiaries, which have a functional currency different to their local currency, mainly Mexico.

Tax rates used to perform the reconciliation between tax expense (income) and accounting profit are those in effect at each relevant date or period in each applicable jurisdiction.

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Capitalized borrowing costs	—	—	—	—	563	—	563
Disposals / Consumptions	(1,139 )	(14,776 )	(167 )	(922 )	(612 )	(14,063 )	(31,679 )
Transfers	(98 )	101,661	174,321	13,501	(290,215)	690	(140 )
Depreciation charge	—	(73,880 )	(269,272 )	(13,898 )	—	(3,710 )	(360,760 )
Closing net book value	562,042	1,533,436	2,640,650	47,580	456,021	110,024	5,349,753
Values at the end of the year							
Cost	562,042	2,096,959	4,927,478	151,883	456,021	113,188	8,307,571
Accumulated depreciation	—	(563,523 )	(2,286,828 )	(104,303 )	—	(3,164 )	(2,957,818)
Net book value at December 31, 2017	562,042	1,533,436	2,640,650	47,580	456,021	110,024	5,349,753

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## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017  
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## 13. INTANGIBLE ASSETS, NET

	Year ended December 31, 2018						
	Information system projects	Mining assets	Exploration and evaluation costs	Customer relationships and other contractual rights	Trademarks	Goodwill	Total
Values at the beginning of the year							
Cost	249,379	216,196	10,333	604,931	73,935	662,307	1,817,081
Accumulated depreciation	(188,470)	(121,859)	—	(340,238)	(73,935)	—	(724,502)
Net book value at January 1, 2018	60,909	94,337	10,333	264,693	—	662,307	1,092,579
Opening net book value	60,909	94,337	10,333	264,693	—	662,307	1,092,579
Effect of initial inflation adjustment (Note 4 (cc))	4,966	—	—	—	—	—	4,966
Translation differences	(6,674)	—	—	—	—	—	(6,674)
Additions	27,594	10,243	2,641	—	—	—	40,478
Disposals / Consumptions	(87)	—	—	—	—	—	(87)
Transfers	480	(10,237)	10,235	—	—	—	478
Depreciation charge	(15,427)	(18,055)	—	(85,734)	—	—	(119,216)
Closing net book value	71,761	76,288	23,209	178,959	—	662,307	1,012,524
Values at the end of the year							
Cost	320,600	216,203	23,209	604,931	73,935	662,307	1,901,185
Accumulated depreciation	(248,839)	(139,915)	—	(425,972)	(73,935)	—	(888,661)
Net book value at December 31, 2018	71,761	76,288	23,209	178,959	—	662,307	1,012,524
	Year ended December 31, 2017						
	Information system projects	Mining assets	Exploration and evaluation costs	Customer relationships and other contractual rights	Trademarks	Goodwill	Total
Values at the beginning of the year							
Cost	215,662	202,931	5,689	298,475	73,665	662,307	1,458,729
Accumulated depreciation	(164,203)	(106,424)	—	(272,923)	(72,622)	—	(616,172)
Net book value at January 1, 2017	51,459	96,507	5,689	25,552	1,043	662,307	842,557
Opening net book value	51,459	96,507	5,689	25,552	1,043	662,307	842,557
Translation differences	(1,730)	—	—	—	—	—	(1,730)
Acquisition of business (Note 3)	2,731	—	—	314,177	—	—	316,908
Additions	35,867	8,076	9,829	—	—	—	53,772
Disposals / Consumptions	(32)	—	—	—	—	—	(32)



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Transfers	(512 )	5,185	(5,185 )	(4,845 )	—	—	(5,357 )
Depreciation charge	(26,874 )	(15,431 )	—	(70,191 )	(1,043 )	—	(113,539 )
Closing net book value	60,909	94,337	10,333	264,693	—	662,307	1,092,579
Values at the end of the year							
Cost	249,379	216,196	10,333	604,931	73,935	662,307	1,817,081
Accumulated depreciation	(188,470)	(121,859)	—	(340,238 )	(73,935 )	—	(724,502 )
Net book value at December 31, 2017	60,909	94,337	10,333	264,693	—	662,307	1,092,579

The Company has not registered any impairment charges in connection with Goodwill.

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## TERNIUM S.A.

Consolidated Financial Statements as of December 31, 2018 and 2017  
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## 14. INVESTMENTS IN NON-CONSOLIDATED COMPANIES

	As of December 31,	
	2018	2017
At the beginning of the year	478,348	418,379
Equity in earnings (losses) of non-consolidated companies	102,772	68,115
Other comprehensive income	(77,042 )	(4,786 )
Dividends from non-consolidated companies	(8,837 )	(3,360 )
At the end of the year	495,241	478,348

The principal investments in non-consolidated companies, all of which are unlisted, except for Usiminas, are:

Company	Country of incorporation	Main activity	Voting rights at		Value at	
			December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Usinas Siderurgicas de Minas Gerais S.A. - USIMINAS	Brazil	Manufacturing and selling of steel products	34.39 %	34.39 %	480,084	466,299
Techgen S.A. de C.V.	Mexico	Provision of electric power	48.00 %	48.00 %	10,291	6,862
Other non-consolidated companies (1)					4,866	5,187
					495,241	478,348

(1) It includes the investment held in Finma S.A.I.F., Techinst S.A., Recrotek S.R.L. de C.V. and Gas Industrial de Monterrey S.A. de C.V.

## (a) Usinas Siderurgicas de Minas Gerais S.A. – USIMINAS

Ternium, through its subsidiaries Ternium Investments S.à r.l. (“Ternium Investments”), Ternium Argentina S.A. (“Ternium Argentina”) and Prosid Investments S.A. (“Prosid”), owns a total of 242.6 million ordinary shares and 8.5 million preferred shares, representing 20.5% of the issued and outstanding share capital of Usinas Siderurgicas de Minas Gerais S.A. - USIMINAS (“Usiminas”), the largest flat steel producer in Brazil for the energy, automotive and other industries.

Ternium Investments, Ternium Argentina and Prosid, together with Tenaris S.A.’s Brazilian subsidiary Confab Industrial S.A. (“TenarisConfab”), are part of Usiminas’ control group, comprising the so-called T/T Group. The other members of Usiminas’ control group are Previdência Usiminas (Usiminas’ employee pension fund) and the so-called NSSMC Group, comprising Nippon Steel & Sumitomo Metal Corporation Group (“NSSMC”), Nippon Usiminas Co., Ltd., Metal One Corporation and Mitsubishi Corporation do Brasil, S.A.

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14. INVESTMENTS IN NON-CONSOLIDATED COMPANIES (continued)

On April 10, 2018, the T/T Group, the NSSMC Group and Previdência Usiminas entered into a new shareholders' agreement (the "New SHA") to govern their relations as shareholders and members of the control group of Usiminas. The New SHA sets forth Usiminas' corporate governance rules, including, among others, an alternation mechanism for the nomination of each of the chief executive officer and the chairman of the board of directors, as well as a mechanism for the nomination of other members of Usiminas' executive board. The right to nominate Usiminas' chief executive officer and chairman will alternate between Ternium and NSSMC at every 4-year interval, comprising two consecutive 2-year terms. For the initial four years, Ternium will be entitled to nominate the CEO and NSSMC will be entitled to nominate the chairman. The executive board will be composed of six members, including the chief executive officer and five vice-presidents, with Ternium and NSSMC nominating three members each.

Usiminas' control group holds, in the aggregate, 483.6 million ordinary shares bound to the New SHA, representing approximately 68.6% of Usiminas' voting capital, with the T/T Group holding approximately 47.1% of the total shares held by the control group (39.5% corresponding to Ternium and the other 7.5% corresponding to TenarisConfab); the NSSMC Group holding approximately 45.9% of the total shares held by the control group; and Previdência Usiminas holding the remaining 7% of the total shares held by the control group.

The New SHA provides for an exit mechanism consisting of a buy-and-sell procedure, exercisable at any time during the term of the New SHA after November 16, 2022. Such exit mechanism shall apply with respect to shares held by the NSSMC Group and the T/T Group, and would allow either Ternium or NSSMC to purchase all or a majority of the Usiminas shares held by the other shareholder group.

The 51.4 million ordinary shares of Usiminas acquired by Ternium on October 30, 2014 and 6.7 million ordinary shares acquired by NSSMC prior to execution of the January 16, 2012 shareholders' agreement remain free from any transfer restrictions under the New SHA and will not be subject to the exit mechanism described above.

As of December 31, 2018, the closing price of the Usiminas ordinary and preferred shares, as quoted on the BM&F Bovespa Stock Exchange, was BRL 11.44 (approximately \$2.95; December 31, 2017: BRL10.83 - \$3.27) per ordinary share and BRL9.22 (approximately \$2.38; December 31, 2017: BRL9.10 - \$2.75) per preferred share, respectively. Accordingly, as of December 31, 2018, Ternium's ownership stake had a market value of approximately \$736.5 million and a carrying value of \$480.1 million.

The Company reviews periodically the recoverability of its investment in Usiminas. To determine the recoverable value, the Company estimates the value in use of the investment by calculating the present value of the expected cash flows or its fair value less costs of disposal.

Usiminas financial restructuring process (that started in April 2016 with the capital increase) was completed by the end of August 2017. The completion of this process together with the higher share price since June 2016, and the improvement in business conditions may lead to an increase in the value of the investment in Usiminas in future periods.

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## 14. INVESTMENTS IN NON-CONSOLIDATED COMPANIES (continued)

As of December 31, 2018 and 2017, the value of the investment in Usiminas is comprised as follows:

Value of investment	USIMINAS	
	As of December 31, 2018	As of December 31, 2017
At the beginning of the year	466,299	411,134
Share of results (1)	97,733	63,030
Other comprehensive income	(75,195 )	(4,570 )
Dividends	(8,753 )	(3,295 )
At the end of the year	480,084	466,299

(1) It includes the adjustment of the values associated to the purchase price allocation.

The investment in Usiminas is based in the following calculation:

Usiminas' shareholders' equity	3,681,815
Percentage of interest of the Company over shareholders' equity	20.43 %
Interest of the Company over shareholders' equity	752,048
Purchase price allocation	71,013
Goodwill	268,255
Impairment	(611,232 )
Total Investment in Usiminas	480,084

On February 14, 2019, Usiminas approved its annual accounts as of and for the year ended December 31, 2018, which state that revenues, net profit from continuing operations and shareholders' equity amounted to \$3,766 million, \$193 million and \$3,682 million, respectively.

Summarized balance sheet (in million \$)	USIMINAS	
	As of December 31, 2018	As of December 31, 2017
Assets		
Non-current	4,697	5,662
Current	1,711	1,494
Other current investments	151	164
Cash and cash equivalents	286	535
Total Assets	6,845	7,855
Liabilities		
Non-current	544	637
Non-current borrowings	1,389	1,707
Current	740	622

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Current borrowings	121	299
Total Liabilities	2,794	3,265
Non-controlling interest	369	426
Shareholders' equity	3,682	4,164

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## 14. INVESTMENTS IN NON-CONSOLIDATED COMPANIES (continued)

Summarized income statement (in million \$)	USIMINAS	
	As of December 31, 2018	As of December 31, 2017
Net sales	3,766	3,368
Cost of sales	(3,154)	(2,854)
Gross Profit	612	514
Selling, general and administrative expenses	(213)	(206)
Other operating income (loss), net	(153)	(78)
Operating income	246	230
Financial expenses, net	15	(145)
Equity in earnings of associated companies	70	49
Profit (Loss) before income tax	331	134
Income tax benefit	(110)	(34)
Net profit (loss) before non-controlling interest	221	100
Non-controlling interest in other subsidiaries	(28)	(26)
Net profit (loss) for the year	193	74

## (b)Techgen S.A. de C.V.

Techgen is a Mexican natural gas-fired combined cycle electric power plant in the Pesquería area of the State of Nuevo León, Mexico. The company started producing energy on December 1st, 2016 and is fully operational. As of February 2017, Ternium, Tenaris, and Tecpetrol International S.A. (a wholly-owned subsidiary of San Faustin S.A., the controlling shareholder of both Ternium and Tenaris) completed their investments in Techgen. Techgen is currently owned 48% by Ternium, 30% by Tecpetrol and 22% by Tenaris. Ternium and Tenaris also agreed to enter into power supply and transportation agreements with Techgen, pursuant to which Ternium and Tenaris will contract 78% and 22%, respectively, of Techgen's power capacity of 900 megawatts. During 2017 and 2016, Techgen's shareholders made additional investments in Techgen, in the form of subordinated loans, which in the case of Ternium amounted to \$151.6 million as of December 31, 2018, and which are due in June 2020.

For commitments from Ternium in connection with Techgen, see note 25.

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## 15. RECEIVABLES, NET – NON CURRENT AND CURRENT

	As of December 31,	
	2018	2017
Receivables with related parties (Notes 26 and 14 (b))	151,388	126,859
Employee advances and loans	2,425	4,171
Advances to suppliers for the purchase of property, plant and equipment	74,741	27,734
Advances to suppliers for the purchase of property, plant and equipment with related parties (Note 26)	7,493	3,252
Other receivables (Note 3 (c) (iii))	264,683	311,394
Tax credits	146,711	202,853
Others	2,006	1,036
Receivables, net – Non-current	649,447	677,299
	As of December 31,	
	2018	2017
Value added tax	156,627	149,021
Tax credits	72,957	77,887
Employee advances and loans	4,701	6,429
Advances to suppliers	15,563	44,239
Advances to suppliers with related parties (Note 26)	2,854	3
Expenses paid in advance	15,862	13,244
Government tax refunds on exports	17,311	32,522
Receivables with related parties (Note 26)	9,536	29,190
Others	14,339	9,638
Receivables, net – Current	309,750	362,173

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## 16. TRADE RECEIVABLES, NET – NON CURRENT AND CURRENT

	As of December 31,		
	2018	2017	
Trade receivables	4,766	4,832	
Trade receivables, net – Non-current	4,766	4,832	
Current accounts	1,096,072	926,310	
Trade receivables with related parties (Note 26)	46,744	96,831	
Allowance for doubtful accounts (Note 19)	(14,346 )	(16,543 )	
Trade receivables, net - Current	1,128,470	1,006,598	
	Trade receivables, net as of December 31, 2018		
	Total	Fully performing	Past due
Guaranteed	564,015	502,822	61,193
Not guaranteed	583,567	532,214	51,353
Trade receivables	1,147,582	1,035,036	112,546
Allowance for doubtful accounts (Note 19)	(14,346 )	—	(14,346 )
Trade receivables, net	1,133,236	1,035,036	98,200
	Trade receivables, net as of December 31, 2017		
	Total	Fully performing	Past due
Guaranteed	412,036	366,902	45,134
Not guaranteed	615,937	543,791	72,146
Trade receivables	1,027,973	910,693	117,280
Allowance for doubtful accounts (Note 19)	(16,543 )	—	(16,543 )
Trade receivables, net	1,011,430	910,693	100,737

## 17. INVENTORIES, NET

	As of December 31,	
	2018	2017
Raw materials, materials and spare parts	850,182	616,870
Goods in process	1,187,071	1,251,779
Finished goods	464,154	423,372



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Goods in transit	243,876	295,106
Obsolescence allowance (Note 19)	(55,454 )	(36,197 )
Inventories, net	2,689,829	2,550,930

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## 18. CASH, CASH EQUIVALENTS AND OTHER INVESTMENTS – NON CURRENT AND CURRENT

	As of December 31, 2018 2017	
Investments in companies under cost method	252	252
Investments in debt instruments	6,943	3,128
Other investments, net – Non-current	7,195	3,380
	As of December 31, 2018 2017	
(i) Other investments		
Other deposits with maturity of more than three months	44,529	132,736
Other investments - Current	44,529	132,736
(ii) Cash and cash equivalents		
Cash and banks	87,863	100,739
Restricted cash	2,216	50
Short-term bank deposits	140,456	229,239
Other deposits with maturity of less than three months	20,006	7,751
Cash and cash equivalents	250,541	337,779

## 19. ALLOWANCES AND PROVISIONS – NON CURRENT AND CURRENT

## Provisions and allowances - Non current

	Liabilities	Liabilities
	Legal claims and other matters	Asset retirement obligation
Year ended December 31, 2018		
Values at the beginning of the year	768,517	27,829
Effect of initial inflation adjustment (Note 4 (cc))	1,315	—
Translation differences	(113,571)	82
Additions	6,438	5,383
Reversals	(14,097)	(8,740)
Uses	(4,652)	—
At December 31, 2018	643,950	24,554

Year ended December 31, 2017

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Values at the beginning of the year	6,950	18,301
Translation differences	(39,757 )	853
Acquisition of business (Note 3)	799,938	—
Additions	3,112	8,675
Reversals	(329 )	—
Uses	(1,397 )	—
At December 31, 2017	768,517	27,829

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## 19. ALLOWANCES AND PROVISIONS – NON CURRENT AND CURRENT (continued)

Provisions and allowances - Current	Deducted from assets Allowance for doubtful accounts	Obsolescence allowance	Liabilities Asset retirement obligation
Year ended December 31, 2018			
Values at the beginning of the year	16,543	36,197	2,659
Effect of initial inflation adjustment (Note 4 (cc))	202	6,530	—
Translation differences	(2,076 )	(2,384 )	(10 )
Additions	2,732	22,822	7,659
Reversals	(1,103 )	(5,500 )	—
Uses	(1,952 )	(2,211 )	(457 )
At December 31, 2018	14,346	55,454	9,851
Year ended December 31, 2017			
Values at the beginning of the year	6,019	33,433	4,262
Translation differences	(504 )	(860 )	246
Acquisition of business (Note 3)	10,822	12,385	—
Additions	1,365	9,959	443
Reversals	(680 )	(13,987 )	—
Uses	(479 )	(4,733 )	(2,292 )
At December 31, 2017	16,543	36,197	2,659

## 20. DEFERRED INCOME TAX

Deferred income taxes are calculated in full on temporary differences under the liability method using the tax rate of the applicable country.

Changes in deferred income tax are as follows:

	As of December 31, 2018	2017
At the beginning of the year	(392,265)	(523,209)
Acquisition of business (Note 3)	—	13,686
Translation differences	(7,201 )	(1,052 )
Effect of changes in tax law (Note 11)	—	7,455
Effect of initial inflation adjustment	(182,773)	—
Credits (Charges) directly to other comprehensive income	9,547	4,808
Deferred tax (charge) credit (Note 11)	232,485	106,047
At the end of the year	(340,207)	(392,265)

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## 20. DEFERRED INCOME TAX (continued)

The changes in deferred tax assets and liabilities (prior to offsetting the balances within the same tax jurisdiction) during the year are as follows:

Deferred tax liabilities	PP&E	Inventories	Intangible assets	Other	Total at December 31, 2018		
At the beginning of the year	(539,839)	(57,006 )	(18,692 )	(2,056)	(617,593 )		
Translation differences	9,726	527	497	(688 )	10,062		
Effect of initial inflation adjustment	(161,044)	(20,967 )	(762 )	—	(182,773 )		
Income statement credit (charge)	168,702	36,130	3,031	1,656	209,519		
At the end of the year	(522,455)	(41,316 )	(15,926 )	(1,088)	(580,785 )		
Deferred tax assets			Provisions	Trade receivables	Tax losses (1)	Other	Total at December 31, 2018
At the beginning of the year			61,101	8,200	43,355	112,672	225,328
Translation differences			(6,036 )	(1,089 )	—	(10,137 )	(17,263 )
Credits (Charges) directly to other comprehensive income			—	—	—	9,547	9,547
Effect of changes in tax law			—	—	—	—	—
Income statement credit (charge)			17,882	4,154	(9,973 )	10,903	22,966
At the end of the year			72,947	11,265	33,382	122,984	240,578

(1) As of December 31, 2018, the recognized deferred tax assets on tax losses amount to \$33,383 and there are net unrecognized deferred tax assets of \$0.7 billion and unrecognized tax losses amounting to \$1.2 billion. These two last effects are connected to the acquisition of Ternium Brasil (see Note 3).

Deferred tax liabilities	PP&E	Inventories	Intangible assets	Other	Total at December 31, 2017		
At the beginning of the year	(625,963)	(48,637 )	(28,050 )	(3,050)	(705,700 )		
Translation differences	6,907	(215 )	67	(29 )	6,730		
Charges directly to other comprehensive income	—	—	—	(108 )	(108 )		
Effect of changes in tax law	17,293	185	352	11	17,841		
Income statement credit (charge)	61,924	(8,339 )	8,939	1,120	63,644		
At the end of the year	(539,839)	(57,006 )	(18,692 )	(2,056)	(617,593 )		
Deferred tax assets			Trade receivables	Tax losses (2)	Other	Total at December 31, 2017	
At the beginning of the year			53,188	7,488	56,297	65,518	182,491

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Translation differences	(501 )	(273 )	—	(7,008 )	(7,782 )
Acquisition of business (Note 3)	—	—	—	13,686	13,686
Charges directly to other comprehensive income	—	—	—	4,916	4,916
Effect of changes in tax law	(2,692 )	(238 )	—	(7,456 )	(10,386 )
Income statement credit (charge)	11,106	1,223	(12,942)	43,016	42,403
At the end of the year	61,101	8,200	43,355	112,672	225,328

(2) As of December 31, 2017, the recognized deferred tax assets on tax losses amount to \$43,355 and there are no net unrecognized deferred tax assets of \$0.9 billion and unrecognized tax losses amounting to \$1.5 billion. These two last effects are connected to the acquisition of Ternium Brasil (see note 3).

Deferred tax assets and liabilities are offset when the entity a) has a legally enforceable right to set off the recognized amounts; and b) intends to settle the tax on a net basis or to realize the asset and settle the liability simultaneously.

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## 20. DEFERRED INCOME TAX (continued)

The amounts shown in the statement of financial position (prior to offsetting the balances within the same tax jurisdiction) include the following:

	As of December 31,	
	2018	2017
Deferred tax assets to be recovered after more than 12 months	153,681	155,350
Deferred tax assets to be recovered within 12 months	86,897	69,978
Deferred tax liabilities to be settled after more than 12 months	(538,854)	(558,890)
Deferred tax liabilities to be settled within 12 months	(41,931 )	(58,703 )
	(340,207)	(392,265)

## 21. OTHER LIABILITIES – NON CURRENT AND CURRENT

As of December  
31,  
2018 2017

## (i) Other liabilities - Non current

Post-employment benefits	312,293	275,950
Other employee benefits	38,891	31,312
Asset retirement obligation (Note 19) (1)	24,554	27,829
Other	38,803	37,955

Other liabilities – Non-current 414,541 373,046

(1) The asset in connection with this liability is included in Property, plant and equipment.

## Post-employment benefits

The amounts recognized in the consolidated statement of financial position are determined as follows:

	Post-employment benefits As of December 31,	
	2018	2017
Present value of unfunded obligations	312,293	275,950

Liability in the statement of financial position 312,293 275,950

The amounts recognized in the consolidated income statement are as follows:

	Post-employment benefits Year ended December 31,	
	2018	2017
Current service cost	7,284	6,555



Interest cost 22,578 21,658

Total included in labor costs 29,862 28,213

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## 21. OTHER LIABILITIES – NON CURRENT AND CURRENT (continued)

Changes in the liability recognized in the consolidated statement of financial position are as follows:

	Post-employment benefits As of December 31,	
	2018	2017
At the beginning of the year	275,950	252,624
Transfers, new participants and funding of the plan	(3,177 )	840
Total expense	29,862	28,213
Remeasurements	38,263	15,068
Effect of changes in demographic assumptions	22,575	(4,950 )
Effect of changes in financial assumptions	2,272	14,110
Effect of experience adjustments	13,416	5,908
Translation differences	(283 )	10,527
Contributions paid	(28,322 )	(31,322 )
At the end of the year	312,293	275,950

The principal actuarial assumptions used were as follows:

	Year ended December 31,	
	2018	2017
Mexico		
Discount rate	8.75	% 7.75 %
Compensation growth rate	6.00% - 7.00%	5.00 %
	Year ended December 31,	
Argentina	2018	2017
Discount rate	6.00% - 7.00%	6.00% - 7.00%
Compensation growth rate	2.00% - 3.00%	2.00% - 3.00%

The sensitivity of the defined benefit obligation to changes in the weighted principal assumptions is as follows:

	Impact on defined benefit obligation					
	Change in assumption		Increase in assumption		Decrease in assumption	
Discount rate	1.00	%	-8.4	%	10.1	%
Compensation growth rate	1.00	%	1.4	%	-4.2	%
Pension growth rate	1.00	%	-1.5	%	1.8	%
Life expectancy	1 year		3.8	%	-3.8	%

The estimated future payments for the next five years will be between 23.8 and 29.9 million per year.



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## 21. OTHER LIABILITIES – NON CURRENT AND CURRENT (continued)

	As of December 31,	
	2018	2017
(ii) Other liabilities - Current		
Payroll and social security payable	177,407	183,249
VAT liabilities	79,060	79,085
Other tax liabilities	36,203	30,927
Termination benefits	1,501	1,816
Related Parties (Note 26)	3,341	6,215
Asset retirement obligation (Note 19)	9,851	2,659
Others	43,853	53,050
Other liabilities – Current	351,216	357,001

## 22. DERIVATIVE FINANCIAL INSTRUMENTS

Net fair values of derivative financial instruments

The net fair values of derivative financial instruments at December 31, 2018 and 2017 were as follows:

	As of December 31,	
	2018	2017
Contracts with positive fair value		
Interest rate swap contracts	818	302
Foreign exchange contracts	770	2,002
	1,588	2,304

Contracts with negative fair value

Foreign exchange contracts	(12,981)	(6,001)
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(12,981) (6,001)

Derivative financial instruments breakdown is as follows:

## (a) Interest rate contracts

Fluctuations in market interest rates create a degree of risk by affecting the amount of the Company's interest payments and the value of its floating-rate debt. As of December 31, 2018, most of the Company's long-term borrowings were at variable rates.

During 2012 and 2013, Ternium entered into several forward starting interest rate swap agreements in order to fix the interest rate to be paid over an aggregate amount of \$100 million, at an average rate of 1.92%. These agreements are effective from July 2014, will due on July 2022 and have been accounted for as cash flow hedges. As of December 31, 2018, the after-tax cash flow hedge reserve related to these agreements amounted to \$0.5 million.

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## 22. DERIVATIVE FINANCIAL INSTRUMENTS (continued)

Changes in fair value of derivative instruments designated as cash flow hedges for each of the years presented are included below:

	Cash flow hedges		
	Gross amount	Income tax	Total
At December 31, 2016	75	(22 )	53
(Decrease) / Increase	363	3	366
Reclassification to income statement	372	(110 )	262
At December 31, 2017	810	(129 )	681
(Decrease) / Increase	(14 )	(108 )	(122)
Reclassification to income statement	(117)	35	(82 )
At December 31, 2018	679	(202 )	477

The gross amount of the pre-tax reserve recorded in other comprehensive income at December 31, 2018 (amounting to a gain of \$0.7 million) is expected to be reclassified to the income statements in accordance to the payments of interests in connection with the borrowings hedged by these derivative contracts, during 2019 and up to the end of the life of the borrowing in 2022.

## (b) Foreign exchange contracts

From time to time, Ternium's subsidiaries enter into derivative agreements to manage their exposure to currencies other than the \$, in accordance with the Company's policy for derivative instruments.

During 2018, 2017 and 2016, Prosid Investments entered into several non-deliverable forward agreements in order to manage the exchange rate exposure generated by Ternium Argentina's debt in ARS. As of December 31, 2018, there were no outstanding agreements.

Furthermore, during 2018, 2017 and 2016, Ternium Colombia S.A.S. has entered into non-deliverable forward agreements to manage the exposure of certain trade receivables denominated in its local currency. As of December 31, 2018, the notional amounts on these agreements amounted to \$30.0 million.

As part of the acquisition of the subsidiary in Brazil, the Company maintained several non-deliverable forward agreements which were entered into to manage the exchange rate exposure generated by financial debt in BRL. As of December 31, 2018, the outstanding notional amounts in \$ are offset on these agreements.

During 2018 and 2017, Ternium Mexico entered into a forward agreement in order to manage the exchange rate exposure generated by future payables in EUR related to the investment plan. As of December 31, 2018, the notional amount on this agreement amounted to \$228.2 million.

During 2018, Ternium Investments S.à.r.l., entered into a several non-deliverable forward and forward agreements in order to manage the exchange rate exposure generated by Ternium Argentina's debt in ARS, future payables in EUR related to the investment plan of Ternium Colombia and future receivables in EUR related to sales of Ternium International España. As of December 31, 2018 the notional amount on these agreements amounted to \$28.7 million.

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## 22. DERIVATIVE FINANCIAL INSTRUMENTS (continued)

The net fair values of the exchange rate derivative contracts as of December 31, 2018 and December 31, 2017 were as follows:

Currencies	Contract	Notional amount	Fair value at December 31,	
			2018	2017
EUR/\$	ND Forward - Buy EUR	212.9 million EUR	(12,954)	224
BRL/\$	ND Forward - Buy BRL	34.5 million BRL	(493 )	1,514
EUR/\$	ND Forward - Sell EUR	1.9 million EUR	(27 )	—
BRL/\$	ND Forward - Sell BRL	32.0 million BRL	1,154	247
COP/\$	ND Forward - Sell COP	194.9 billion COP	109	17
ARS/\$	ND Forward - Buy ARS	6.4 billion ARS	—	(6,534)
ARS/\$	ND Forward - Sell ARS	187.0 million ARS	—	533
			(12,211)	(3,999)

ARS: Argentine pesos; COP: Colombian pesos; EUR: E.U. euros; \$: U.S. dollars; BRL: Brazilian reais.

## 23. FINANCE LEASES

As of December 31, 2018, the Company is party to a contract that qualifies as financial lease agreement with Air Liquide Argentina S.A., being the object of the lease a plant for the provision of industrial gas located in the Company's plant in San Nicolas, Argentina. This contract does not consider a purchase option of the related asset on its expiry date. The total commitment generated a current finance lease liability of \$8.0 million (2017: \$8.0 million) and a non-current finance lease liability of \$65.8 million (2017: \$69.0 million). The total finance lease liability to be paid on expiry of the lease contract amounts to \$73.8 million (2017: \$77.0 million).

The reconciliation of the minimum future payments and the present value of the contract are as follows:

	As of December 31, 2018	As of December 31, 2017
Commitments in relation to finance leases are payable as follows:		
Within one year	8,328	8,328
Later than one year but not later than five years	33,312	33,312
Later than five years	71,482	79,810
Minimum lease payments	113,122	121,450
Future finance charges	(39,294 )	(44,415 )
Total Financial lease liabilities	73,828	77,035

The present value of finance lease liabilities is as follows:

Within one year	8,030	8,030
Later than one year but not later than five years	27,208	27,208
Later than five years	38,590	41,797

Total minimum lease payments 73,828 77,035

Property, plant and equipment include a net book value of \$25.3 million (2017: \$61.4 million) in connection with assets leased to the Company under this finance lease. The lease term is 15 years and the amortization period of the

related asset is 15 years as well.

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## 24. BORROWINGS

As of December 31,  
2018      2017

## (i) Non-current

Bank borrowings	1,648,124	1,724,454
Less: debt issue costs	(11,023 )	(8,117 )
	1,637,101	1,716,337

## (ii) Current

Bank borrowings	404,390	1,510,820
Less: debt issue costs	(4,534 )	(5,250 )
	399,856	1,505,570

Total Borrowings	2,036,957	3,221,907
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The maturity of borrowings is as follows:

	Expected Maturity Date			At December 31, (1)	
	2019	2020	2021 and thereafter	2018	2017
Fixed Rate	269,908	19,975	—	289,883	1,146,631
Floating Rate	129,948	508,098	1,109,028	1,747,074	2,075,276

Total	399,856	528,073	1,109,028	2,036,957	3,221,907
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(1) As most borrowings incorporate floating rates that approximate market rates and the contractual repricing occurs mostly every 1 month, the fair value of the borrowings approximates their carrying amount and it is not disclosed separately.

The weighted average interest rates - which incorporate instruments denominated mainly in U.S. dollars and Argentine pesos and which do not include the effect of derivative financial instruments nor the devaluation of these local currencies - at year-end were as follows:

As of  
December 31,  
2018    2017

Bank borrowings	3.65 %	4.76 %
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The nominal average interest rates shown above were calculated using the rates set for each instrument in its corresponding currency and weighted using the dollar-equivalent outstanding principal amount of said instruments at December 31, 2018 and 2017, respectively.



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## 24. BORROWINGS (continued)

Breakdown of borrowings by currency is as follows:

Currencies	Contract	As of December 31,	
		2018	2017
USD	Floating	1,747,074	2,061,106
USD	Fixed	262,873	791,158
ARS	Floating	—	2,377
ARS	Fixed	—	328,060
COP	Floating	—	11,793
COP	Fixed	17,009	18,500
GTQ	Fixed	10,001	8,913

2,036,957 3,221,907

USD: U.S. dollars; ARS: Argentine pesos; COP: Colombian pesos; GTQ: Guatemalan quetzales.

Ternium's most significant borrowings as of December 31, 2018, were those incurred under Ternium México's syndicated loan facilities, in order to finance the construction of its hot rolling mill, hot-dip galvanizing and painting lines in Pesquería, under Tenigal's syndicated loan facility, in order to finance the construction of its hot-dipped galvanizing mill in Pesquería, Mexico, and under Ternium Investments S.à r.l., in order to finance the acquisition of Ternium Brasil:

Date	Borrower	Type	In \$ million		Maturity
			Original principal amount	Outstanding principal amount as of December 31, 2018	
November 2013	Ternium Mexico	Syndicated loan	800	—	November 2018
Years 2012 and 2013	Tenigal	Syndicated loan	200	100	July 2022
September 2017	Ternium Investments S.à r.l.	Syndicated loan	1,500	1,125	September 2022
June 2018	Ternium Mexico	Syndicated loan (1)	1,000	400	June 2023

(1) From the original principal amount of USD 1,000 million, USD 400 million were disbursed as of December 31, 2018. The remainder USD 600 million are available to be drawn until June 2019.

The main covenants on these loan agreements are limitations on liens and encumbrances, limitations on the sale of certain assets and compliance with financial ratios (i.e. leverage ratio). As of December 31, 2018, Ternium was in compliance with all of its covenants.

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25. CONTINGENCIES, COMMITMENTS AND RESTRICTIONS ON THE DISTRIBUTION OF PROFITS

Ternium is involved in litigation arising from time to time in the ordinary course of business. The Company recorded a provision for those cases in which there is a probable cash outflow and the outcome can be reliably estimated. Based on management's assessment and the advice of legal counsel, it is not anticipated that the ultimate resolution of existing litigation would be material to Ternium's consolidated financial position, results of operations or liquidity. For the contingencies related to Ternium Brasil, please refer to Note 3.

(i) Tax claims and other contingencies

(a) Companhia Siderúrgica Nacional (CSN) – Tender offer litigation

In 2013, the Company was notified of a lawsuit filed in Brazil by Companhia Siderúrgica Nacional, or CSN, and various entities affiliated with CSN against Ternium Investments, its subsidiary Ternium Argentina, and TenarisConfab. The entities named in the CSN lawsuit had acquired a participation in Usiminas in January 2012. The CSN lawsuit alleges that, under applicable Brazilian laws and rules, the acquirers were required to launch a tag-along tender offer to all non-controlling holders of Usiminas ordinary shares for a price per share equal to 80% of the price per share paid in such acquisition, or BRL 28.8, and seeks an order to compel the acquirers to launch an offer at that price plus interest. If so ordered, the offer would need to be made to 182,609,851 ordinary shares of Usiminas not belonging to Usiminas' control group; Ternium Investments and Ternium Argentina's respective shares in the offer would be 60.6% and 21.5%.

On September 23, 2013, the first instance court dismissed the CSN lawsuit, and on February 8, 2017, the court of appeals of São Paulo maintained the understanding of the first instance court. On March 6, 2017, CSN filed a motion for clarification against the decision of the court of appeals, which was rejected on July 19, 2017. On August 18, 2017, CSN filed with the court of appeals an appeal seeking the review and reversal of the decision issued by the court of appeals by the Superior Court of Justice. On March 5, 2018, the court of appeals ruled that CSN's appeal did not meet the requirements for review by the Superior Court of Justice and rejected such appeal. On May 8, 2018, CSN appealed against such ruling and on January 22, 2019, the court of appeals rejected such appeal and ordered that the case be submitted to the Superior Court of Justice. The Superior Court of Justice will review the admissibility of CSN's appeal, and, if the appeal is declared admissible, will then render a decision on the merits. The Superior Court of Justice is restricted to the analysis of alleged violations to federal laws and cannot assess matters of fact.

Ternium continues to believe that all of CSN's claims and allegations are groundless and without merit, as confirmed by several opinions of Brazilian legal counsel, two decisions issued by the Brazilian securities regulator (CVM) in February 2012 and December 2016, and the first and second instance court decisions referred to above. Accordingly, no provision has been recorded in these Consolidated Financial Statements.

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(b) Shareholder claims relating to the October 2014 acquisition of Usiminas shares

On April 14, 2015, the staff of CVM, determined that an acquisition of additional ordinary shares of Usiminas by Ternium Investments made in October 2014, triggered a requirement under applicable Brazilian laws and regulations for Usiminas' controlling shareholders to launch a tender offer to all non-controlling holders of Usiminas ordinary shares. The CVM staff's determination was made further to a request by NSSMC and its affiliates, who alleged that Ternium's 2014 acquisition had exceeded a threshold that triggers the tender offer requirement. In the CVM staff's view, the 2014 acquisition exceeded the applicable threshold by 5.2 million shares. On April 29, 2015, Ternium filed an appeal to be submitted to the CVM's Board of Commissioners. On May 5, 2015, the CVM staff confirmed that the appeal would be submitted to the Board of Commissioners and that the effects of the staff's decision would be stayed until such Board rules on the matter.

On June 15, 2015, upon an appeal filed by NSSMC, the CVM staff changed its earlier decision and stated that the obligation to launch a tender offer would fall exclusively on Ternium. Ternium's appeal has been submitted to the CVM's Board of Commissioners and it is currently expected that such Board will rule on the appeal in 2019. In addition, on April 18, 2018, Ternium filed a petition with the CVM's reporting Commissioner requesting that the applicable threshold for the tender offer requirement be recalculated taking into account the new ordinary shares issued by Usiminas in connection with its 2016 BRL 1 billion capital increase and that, in light of the replenishment of the threshold that would result from such recalculation, the CVM staff's 2015 determination be set aside. In the event the appeal is not successful, under applicable CVM rules Ternium may elect to sell to third parties the 5.2 million shares allegedly acquired in excess of the threshold, in which case no tender offer would be required.

(c) Potential Mexican income tax adjustment

In March 2015, the Mexican tax authorities, as part of a tax audit to Ternium Mexico with respect to fiscal year 2008, challenged the deduction by Ternium Mexico's predecessor IMSA Acero of a tax loss arising from an intercompany sale of shares in December 2008. Although the tax authorities have not yet determined the amount of their claim, they have indicated in a preliminary report that they have observations that may result in an income tax adjustment currently estimated at approximately \$57.8 million, including interest and fines. Additionally, in September 2018, the Mexican tax authority, as a result of a tax audit for the fiscal year 2011 to Ternium Mexico, as predecessor of APM, objected mainly the deduction of the tax loss remaining for the year 2008, for which the estimated income tax adjustment would be of approximately \$25.4 million, including interest and fines.

Ternium Mexico requested an injunction from the Mexican courts against the audit observations for the year 2008 and the fiscal credit of the year 2011, and also filed its defense and supporting documents with the Mexican tax authorities. The Company, based on the advice of counsel, believes that an unfavorable outcome in connection with this matter is not probable and, accordingly, no provision has been recorded in its financial statements.

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(d) Class action

The Company is aware that, following its November 27, 2018 announcement that its chairman Paolo Rocca was included in an Argentine court investigation known as the Notebooks Case, a putative class action complaint was filed in the U.S. District Court for the Eastern District of New York purportedly on behalf of purchasers of Ternium securities from May 1, 2014 through November 27, 2018. The individual defendants named in the complaint are our chairman, our former CEO, our current CEO and our CFO. That complaint alleges that during the class period (May 2014-November 2018), the Company and the individual defendants inflated the price of Ternium's ADSs by failing to disclose that sale proceeds received by Ternium when Sidor was expropriated by Venezuela were received or expedited as a result of alleged improper payments made to Argentine officials. The complaint does not specify the damages that plaintiff is seeking.

(ii) Commitments

The following are Ternium's main off-balance sheet commitments:

(a) Ternium Argentina signed agreements to cover 80% of its required iron ore, pellets and iron ore fines volumes until December 31, 2021, for an estimated total amount of \$764.0 million. Although they do not set a minimum amount or a minimum commitment to purchase a fixed volume, under certain circumstances a penalty is established for the party that fails of:

- 7% in case the annual operated volume is between 70% and 75% of the total volume of purchases of the Company; such percentage is applied over the difference between the actual purchased volume and the 80% of the total volume of purchases.

- 15% in case the annual operated volume is lower than 70% of the total volume of purchases of the Company; such percentage is applied over the difference between the actual purchased volume and the 80% of the total volume of purchases.

(b) Ternium Argentina has also signed various contracts for the provision of natural gas, including Tecpetrol, a related company of Ternium, assuming firm commitments for a total of \$33.7 million payable until April 2019.

(c) Ternium Argentina signed an agreement with Air Liquide Argentina S.A. for the supply of oxygen, nitrogen and argon until 2021, for an aggregate amount of \$21.9 million, which is due to terminate in 2032.

(d) On April 24, 2017, Ternium Mexico entered into a 25-year contract (effective as of December 1, 2016, through December 1, 2041) with Techgen, S.A. de C.V. for the supply of 699 MW (which represents 78% of Techgen's capacity) and covers most of Ternium Mexico's facilities electricity needs. Monthly payments are determined on the basis of capacity charges, operation costs, back-up power charges, and transmission charges. As of the seventh contract year (as long as Techgen's existing or replacing bank facility has been repaid in full), Ternium Mexico has the right to suspend or early terminate the contract if the rate payable under the agreement is higher than the rate charged by Comisión Federal de Electricidad ("CFE") or its successors. Ternium Mexico may instruct Techgen to sell to any affiliate of Ternium Mexico, to CFE, or to any other third party all or any part of unused contracted energy under the agreement and Ternium Mexico will benefit from the proceeds of such sale.

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(e) On December 20, 2000, Hylsa (Ternium Mexico's predecessor) entered into a 25-year contract with Iberdrola Energía Monterrey, S.A. de C.V. ("Iberdrola"), a Mexican subsidiary of Iberdrola Energía, S.A., for the supply of energy to four of Ternium Mexico's plants. On March 31, 2008, two of those plants were terminated by Iberdrola. The contracted electrical demand as of December 31, 2018, is 51.7 MW. Iberdrola currently supplies approximately 25% of Ternium Mexico's electricity needs under this contract. Although the contract was to be effective through 2027, on April 28, 2014, Ternium Mexico and Iberdrola entered into a new supply contract and terminated the previous one. In consideration of the termination of the previous contract, Iberdrola has granted Ternium Mexico a credit of \$750 thousand per MW of the 111.2 MW originally contracted capacity, resulting over time in a total value of \$83.4 million. In addition, Iberdrola agreed to recognize to Ternium México \$15.0 million through discounted rates. As a result of the above mentioned credit and discount, the company expects to incur in electricity rates comparable to those obtained in the past under the previous contract's terms for a period that is estimated to be approximately 7 months. Following such period, Ternium Mexico's rates under the contract will increase to market rates with a 2.5% discount; however, Ternium Mexico will be entitled to terminate the contract without penalty.

(f) Following the maturity of a previously existing railroad freight services agreement during 2013, in April 2014, Ternium México and Ferrocarril Mexicano, S. A. de C. V. ("Ferromex") entered into a new railroad freight services agreement pursuant to which Ferromex will transport Ternium Mexico's products through railroads operated by Ferromex for a term of five years through 2019. Subject to Ternium's board approval, both Ternium Mexico and Ferromex would be required to make (within a period of 36 months) certain investments to improve the loading and unloading of gondolas. The total investment commitment of Ternium México and Ferromex was already invested as of December 31, 2018. Under the agreement, Ternium Mexico has guaranteed to Ferromex its service for the minimum average transport load of 200,000 metric tons per month in any six-month period. In the event that the actual per-month average transport loads in any six-month period were lower than such guaranteed minimum, Ternium Mexico would be required to compensate Ferromex for the shortfall so that Ferromex receives a rate equivalent to a total transport load of 1,200,000 metric tons for such six-month period. However, any such compensation will not be payable if the lower transport loads were due to adverse market conditions, or to adverse operating conditions at Ternium Mexico's facilities.

(g) Ternium México issued a guarantee letter covering up to approximately \$25.0 million of the obligations of Gas Industrial de Monterrey, S.A. de C.V. ("GIMSA"), under the natural gas trading agreement between GIMSA and BP Energía México. The credit line granted by BP Energía México in connection with this natural gas trading agreement amounted to approximately \$25.0 million. As of December 31, 2018, the outstanding amount under the natural gas trading agreement was \$16.7 million, which is below the amount included in the guarantee letter issued by Ternium México.

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(h) On June, 2018, Ternium Mexico entered into a loan agreement with a syndicate of banks for a \$1,000 million syndicated loan facility for the purpose of financing capital expenditures, the repayment or prepayment of existing debt, and other general corporate purposes. The loan has a one year availability period in which Ternium Mexico can disburse in one or several drawings. The Company entered the Facility on June 12, 2018, and the final maturity date is on June 12, 2023, being payable in eight consecutive and equal semi-annual installments commencing on December 13, 2019. The main financial covenant that the Facility requires to meet is the consolidated net senior leverage ratio to be not greater than 3.5 to 1.00. As of December 31, 2018, \$400 million were disbursed under the facility and the Company complied with the aforementioned financial covenant.

(i) Ternium Mexico issued a guarantee letter covering up to approximately \$60.8 million of the obligations of Techgen, S.A. de C.V. (“Techgen”), under the Clean Energy Certificates trading agreement between Techgen and Enel Rinnovabile SA de CV (“ENEL”). The amount of the guarantee is equal to 78% of the amount payable by Techgen if Techgen decides to terminate the agreement prior to the expiration date (and therefore decreases as the term of the contract passes). The trading agreement was signed on May 25, 2018, and terminates on June 30, 2041.

(j) Techgen is a party to gas transportation capacity agreements with Kinder Morgan Gas Natural de Mexico, S. de R.L. de C.V., Kinder Morgan Texas Pipeline LLC and Kinder Morgan Tejas Pipeline LLC for a natural gas transportation capacity of 150,000 million BTU per day starting on August 1, 2016 and ending on July 31, 2036. As of December 31, 2018, the outstanding value of this commitment was approximately \$250 million. Ternium’s exposure under the guarantee in connection with these agreements amounts to \$120 million, corresponding to the 48% of the agreements’ outstanding value as of December 31, 2018.

(k) Ternium issued a Corporate Guarantee covering 48% of the obligations of Techgen under a syndicated loan agreement between Techgen and several banks led by Citigroup Global Markets Inc., Credit Agricole Corporate and Investment Bank, and Natixis, New York Branch acting as joint bookrunners. The loan agreement amounted to \$800 million and the proceeds were used by Techgen in the construction of the facility. As of December 31, 2018, the outstanding amount under the loan agreement was \$600 million, as a result the amount guaranteed by Ternium was approximately \$288 million. The main covenants under the Corporate Guarantee are Ternium’s commitment to maintain its participation in Techgen or the right to purchase at least 78% of Techgen’s firm energy, and compliance with a maximum permitted leverage ratio. As of December 31, 2018, Techgen and Ternium, as guarantor, were in compliance with all of their covenants.

(l) During 2006, CSA, the predecessor of Ternium Brasil, has entered into a 15-year contract denominated Contrato de comercialização de energia elétrica no ambiente regulado - CCEAR por disponibilidade to provide electric energy to 24 distributors starting on 2011. Under this contract, Ternium Brasil has to provide 200 MW average per year and the price is adjusted by the Brazilian inflation index. The penalty for not delivering the volume of energy of the contract is the difference between the spot price and the unit variable cost (calculated and published by the Agência Nacional de Energia Elétrica), calculated per hour.

(m) Ternium Brasil signed an exclusivity agreement with Vale S.A. for the purchase of iron ore (pellets, sinter feed and lump ore), which is due to terminate in 2029. The total purchased volume, in accordance with the actual production capacity, is of approximately 8.0 million tons per year. Ternium Brasil has not the obligation to take or pay the mentioned volume and only should pay logistic costs in case of not purchasing the contracted volume.

(n) Ternium Brasil, for its activity of energy generation through gas and steam turbines, signed on March 2017 a contract with GE Global Parts and Products GMBH, General Electric International Inc. and Alstom Energia Térmica e Indústria Ltda. for the maintenance services of such turbines (including the supply of spare parts) for a period of 20 years. As of December 31, 2018, the outstanding amount of this commitment was \$129.8 million.

(o) Ternium Brasil also signed on November 2007 a contract with Primetals Technologies Brazil Ltda. for the provision of maintenance services at a central workshop for the entire steel mill complex, including caster

maintenance for the steel plant. As of December 31, 2018, the outstanding amount of the mentioned services was approximately \$223.5 million and is due to terminate on November 2024. Ternium Brasil is currently using more hours than the minimum quantity of contracted hours.

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(p) Ternium Brasil is a party to a long-term contract with the Consortium formed by Air Liquide Brasil Ltda., AirSteel Ltda., White Martins Gases Industriais Ltda., White Martins Steel Ltda. and ThyssenKrupp MinEnergy GmbH for the supply of air, oxygen, nitrogen and argon to satisfy the requirements up to January 2029. The outstanding amount was approximately \$343.3 million as of December 31, 2018. The contract has minimum daily-required volumes.

(q) Ternium Brasil signed on January 2015 a contract with Companhia Distribuidora de Gás do Rio de Janeiro for the supply of natural gas. This agreement is due to terminate on December 2019 and it totals an aggregate amount of \$33.9 million per year or 61.3 million m<sup>3</sup> per year. Ternium Brasil is currently purchasing more than the minimum volume required by the contract, which is 85% of the volume mentioned before.

(r) Ternium Brasil signed on May 2016 a contract with Stahllog Solução Logísticas Ltda. for logistic services. This agreement is due to terminate on May 2021 and the outstanding amount was \$26.8 million as of December 31, 2018. The contract has minimum required volumes.

(iii) Restrictions on the distribution of profits

Under Luxembourg law, at least 5% of net income per year calculated in accordance with Luxembourg law and regulations must be allocated to a reserve until such reserve has reached an amount equal to 10% of the share capital. At December 31, 2018, this reserve reached the above-mentioned threshold.

As of December 31, 2018, Ternium may pay dividends up to \$2.9 billion in accordance with Luxembourg law and regulations.

Shareholders' equity under Luxembourg law and regulations comprises the following captions:

	As of December 31, 2018
Share capital	2,004,743
Legal reserve	200,474
Non distributable reserves	1,414,122
Reserve for own shares	59,600
Accumulated profit at January 1, 2018	2,887,918
Loss for the year	(20,620 )

Total shareholders' equity under Luxembourg GAAP 6,546,237

26. RELATED PARTY TRANSACTIONS

As of December 31, 2018, Techint Holdings S.à r.l. ("Techint") owned 62.02% of the Company's share capital and Tenaris Investments S.à r.l. ("Tenaris") held 11.46% of the Company's share capital. Each of Techint and Tenaris were controlled by San Faustin S.A., a Luxembourg company ("San Faustin"). Rocca & Partners Stichting Administratiekantoor Aandelen San Faustin ("RP STAK"), a Dutch private foundation (Stichting), held voting shares in San Faustin sufficient in number to control San Faustin. No person or group of persons controls RP STAK.

For commitments with Related parties, see note 25.

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## 26. RELATED PARTY TRANSACTIONS (continued)

The following transactions were carried out with related parties:

	Year ended December 31,		
	2018	2017	2016
(i) Transactions			
(a) Sales of goods and services			
Sales of goods to non-consolidated parties	774,526	453,551	—
Sales of goods to other related parties	141,230	164,694	29,480
Sales of services and others to non-consolidated parties	176	177	737
Sales of services and others to other related parties	1,286	660	654
	917,218	619,082	30,871
(b) Purchases of goods and services			
Purchases of goods from non-consolidated parties	483,182	404,891	144,673
Purchases of goods from other related parties	50,928	57,941	58,929
Purchases of services and others from non-consolidated parties	10,266	13,126	12,836
Purchases of services and others from other related parties	90,536	111,439	126,859
	634,912	587,397	343,297
(c) Financial results			
Income with non-consolidated parties	9,330	7,611	3,507
	9,330	7,611	3,507
(d) Dividends received			
Dividends from non-consolidated parties	8,837	3,360	183
	8,837	3,360	183
(e) Other income and expenses			
Income (expenses), net with non-consolidated parties	1,012	2,723	1,660
Income (expenses), net with other related parties	492	247	712
	1,504	2,970	2,372
		As of December 31,	
		2018	2017
(ii) Year-end balances			
(a) Arising from sales/purchases of goods/services and other transactions			
Receivables from non-consolidated parties	201,693	223,847	
Receivables from other related parties	5,975	29,033	
Advances from non-consolidated parties	2,812	—	
Advances to suppliers with other related parties	7,534	3,255	
Payables to non-consolidated parties	(37,384)	(24,570)	
Payables to other related parties	(23,495)	(21,547)	

157,135 210,018

(iii) Officers and Directors' compensation

During the year ended December 31, 2018 the cash compensation of Officers and Directors amounted to \$16,205 (\$23,031 for the year ended December 31, 2017). In addition, Officers received 894.000 Units for a total amount of \$2,851 (\$2,069 for the year ended December 31, 2017) in connection with the incentive retention program mentioned in note 4 (o)(3).

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## 27. OTHER REQUIRED DISCLOSURES

## (a) Statement of comprehensive income

	Cash flow hedges		Total	Currency translation adjustment
	Gross	Income amount tax		
At December 31, 2016	75	(22 )	53	(3,152,645)
(Decrease) / Increase	363	3	366	(104,393 )
Reclassification to income statement	372	(110 )	262	—
At December 31, 2017	810	(129 )	681	(3,257,038)
(Decrease) / Increase	(14 )	(108 )	(122)	(449,981 )
Reclassification to income statement	(117)	35	(82 )	—
At December 31, 2018	679	(202 )	477	(3,707,019)

## (b) Statement of cash flows

	Year ended December 31,		
	2018	2017	2016
(i) Changes in working capital (1)			
Inventories	(186,409)	(540,162)	(151,263)
Receivables and others	8,652	(108,257)	488
Trade receivables	(123,388)	(303,114)	(161,670)
Other liabilities	17,138	40,230	89,032
Trade payables	55,430	46,333	61,040
	(228,577)	(864,970)	(162,373)
(ii) Income tax accrual less payments			
Tax accrued (Note 11)	369,435	336,882	411,528
Taxes paid	(523,801)	(610,325)	(229,196)
	(154,366)	(273,443)	182,332
(iii) Interest accruals less payments			
Interest accrued (Note 10)	131,172	114,583	89,971
Interest paid	(144,186)	(95,099 )	(77,272 )
	(13,014 )	19,484	12,699

(1) Changes in working capital are shown net of the effect of exchange rate changes.

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## 27. OTHER REQUIRED DISCLOSURES (continued)

## (c) Financial debt reconciliation

	Financial debt			
	Finance lease liabilities	Short term borrowings	Long term borrowings	Total
As of December 31, 2016	—	(821,893 )	(396,742 )	(1,218,635)
Cash flows	364	(540,918 )	(1,511,860)	(2,052,414)
Reclassifications	—	(192,547 )	192,547	—
Acquisitions - finance leases	(76,879)	—	—	(76,879 )
Foreign exchange adjustments	(14,949)	(32,574 )	(371 )	(47,894 )
Other non cash movements	14,429	82,362	89	96,880
As of December 31, 2017	(77,035)	(1,505,570)	(1,716,337)	(3,298,942)
Cash flows	7,565	1,492,568	(401,725 )	1,098,408
Reclassifications	—	(459,520 )	459,520	—
Foreign exchange adjustments	(47,390)	(121,801 )	—	(169,191 )
Other non cash movements	43,032	194,467	21,441	258,940
As of December 31, 2018	(73,828)	(399,856 )	(1,637,101)	(2,110,785)

## 28. RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS

The following amendments, standards and interpretations have been applied on the year starting January 1, 2018: International Financial Reporting Standard 9, "Financial instruments"

In July 2014, the IASB issued IFRS 9, "Financial instruments", which replaces the guidance in IAS 39. It includes requirements on the classification and measurement of financial assets and liabilities, as well as an expected credit losses model that replaces the current incurred loss impairment model.

IFRS 9 was adopted without restating comparative. The reclassifications and the adjustments arising from the new impairment rules are directly recognized in the opening balance sheet on January 1, 2018. The Company has also updated its accounting policies accordingly.

	Reserves	Retained earnings
Closing balance as of December 31, 2017 - IAS 39	1,416,121	6,491,385
Financial instruments	733	(658 )
Income tax related to Financial instruments	(124 )	124
Allowance for impairment of trade receivables	—	569
Income tax related to Allowance for impairment of trade receivables	—	(137 )
Effect on Minority interest related to the adoption of IFRS 9	(159 )	(45 )
Opening balance as of January 1, 2018 - IFRS 9	1,416,571	6,491,238

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## 28. RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS (continued)

IFRS 9 replaces the provisions of IAS 39 related to the recognition, classification and measurement of financial assets and financial liabilities, derecognition of financial instruments, impairment of financial assets and hedge accounting. The adoption of IFRS 9 Financial Instruments from January 1, 2018, resulted in changes in accounting policies and adjustments to the amounts recognized in the financial statements.

The total impact on the Company's financial instruments as of January 1, 2018 is as follows:

	Fair value through profit or loss	Fair value through other comprehensive income	Held to maturity	Amortized cost (Loans and receivables 2017)
Closing balance as of December 31, 2017 - IAS 39	332,143	—	6,129	131,675
Reclassification of Investments in bonds from Held to maturity to Fair value through other comprehensive income	—	6,129	(6,129)	—
Reclassification of Investments in bonds from Fair value through profit or loss to Fair value through other comprehensive income	(78,258)	78,258	—	—
Reclassification of Other financial Instruments from Fair value through profit or loss to Amortized cost	(28,343)	—	—	28,343
Adjustment of Other comprehensive income from adoption of IFRS 9	—	75	—	—
Opening balance as of January 1, 2018 - IFRS 9	225,542	84,462	—	160,018

The Company applies the IFRS 9 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all trade receivables.

To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due. On that basis, the loss allowance as of January 1, 2018, was determined as follows for trade receivables:

	Fully performing	Past due between 1 and 90 days	Past due between 91 and 360 days	Past due more than 360 days
Expected loss rate	0.12%	0.93%	8.08%	99.54%
Non-guaranteed trade receivables - Gross carrying amount	543,792	51,669	6,080	14,397
Allowance for trade receivables	(668)	(483)	(491)	(14,331)

International Financial Reporting Standard 15, "Revenue from contracts with customers".

In May 2014, the IASB issued IFRS 15, "Revenue from contracts with customers", which sets out the requirements in accounting for revenue arising from contracts with customers and which is based on the principle that revenue is recognized when control of a good or service is transferred to the customer.

The Company has adopted IFRS 15 Revenue from Contracts with Customers, which resulted in no changes in accounting policies and adjustments to the amounts recognized in the financial statements. The Company's revenues are mainly recognized at a point of time from sales to direct customers. At December 2018, 2017 and 2016, the Company recognized customer advances in the amount of \$40.3, 39.2 and 31.5 million, respectively. These amounts related to years 2017 and 2016 were reclassified to revenues during the subsequent year. In these periods, no adjustment in revenues were performed related to performance obligations previously satisfied.





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28. RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS (continued)

The following standard, is not mandatory for the financial year beginning January 1, 2018 and has not been early adopted:

International Financial Reporting Standard 16, "Leases"

In January 2016, the IASB issued IFRS 16, "Leases". The new standard will result in almost all leases recognized on the balance sheet (except for short term and low value leases), as the distinction between operating and finance leases is removed. IFRS 16 must be applied on annual periods beginning on or after January 1, 2019.

The Company has assessed the effects of applying the new standard and the main area affected will be the accounting for operating leasing.

The Company expects to recognize right-of-use assets and lease liabilities of approximately \$300 million on January 1, 2019.

The Company intends to adopt this standard using the simplified transition approach and will not restate comparative amounts for the year prior to first adoption.

Other accounting pronouncements that became effective during 2018 have no material effect on the Company's financial condition or results of operations.

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## 29. FINANCIAL RISK MANAGEMENT

## 1) Financial risk factors

Ternium's activities expose the Company to a variety of risks: market risk (including the effects of changes in foreign currency exchange rates, interest rates and commodities prices), credit risk and liquidity risk.

Ternium's overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on the financial performance. Ternium's subsidiaries may use derivative financial instruments to hedge certain risk exposures.

## 1.1) Market Risk

## (i) Foreign exchange rate risk

Ternium operates and sells its products in different countries, and as a result is exposed to foreign exchange rate volatility. In addition, the Company entered into several borrowings that contain covenants providing for the compliance with certain financial ratios, including ratios measured in currencies other than the U.S. dollar. This situation exposes Ternium to a risk of non-compliance derived from volatility in foreign exchange rates. Ternium's subsidiaries may use derivative contracts in order to hedge their exposure to exchange rate risk derived from their trade and financial operations.

Ternium's foreign exchange policy is to minimize the negative impact of fluctuations in the value of other currencies with respect to the U.S. dollar. Ternium's subsidiaries monitor their net cash flows in currencies other than the U.S. dollar, and analyze potential hedging according to market conditions. This hedging can be carried out by netting positions or by financial derivatives. However, regulatory or legal restrictions in the countries in which Ternium's subsidiaries operate, could limit the possibility of the Company carrying out its hedging policy.

Ternium has foreign operations, whose net assets are exposed to foreign currency translation risk, some of which may impact net income. The fact that some subsidiaries have measurement currencies other than the U.S. dollar may, at times, distort the results of the hedging efforts as reported under IFRS.

The following table shows a breakdown of Ternium's assessed financial position exposure to currency risk as of December 31, 2018. These balances include intercompany positions where the intervening parties have different functional currencies.

\$ million Exposure to	Functional currency	
	\$	ARS
U.S. dollar (\$)	—	(210)
EU euro (EUR)	40	2
Argentine peso (ARS)	—	—
Mexican peso (MXN)	(575)	—
Brazilian real (BRL)	(150)	(4 )
Colombian peso (COP)	24	—
Other currencies	(3 )	—

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29. FINANCIAL RISK MANAGEMENT (continued)

The main relevant exposures correspond to:

(a) Argentine peso vs. U.S. dollar

The cumulative devaluation for the Argentine peso during 2018 was 50.5% (2017: 14.8%). The devaluation generated a negative effect of \$387 million (2017: \$97 million), included as currency translation adjustment in Other comprehensive income in connection with the valuation of Ternium's Argentine subsidiaries' equities (mainly Ternium Argentina S.A.), and a loss of \$188 million (2017: \$47 million), included as net foreign exchange results in the Income Statement, partially offset by the positive impact of the inflation adjustment of \$173 million.

If the Argentine peso had weakened by 1% against the U.S. dollar, it would have generated a pre-tax loss of \$2.1 million as of December 31, 2018, and a pre-tax loss of \$1.1 million as of December 31, 2017.

(b) Mexican peso vs. U.S. dollar

If the Mexican peso had weakened by 1% against the U.S. dollar, it would have generated a pre-tax gain of \$5.8 million and \$4.3 million as of December 31, 2018 and 2017, respectively.

(c) Colombian peso vs. U.S. dollar

If the Colombian peso had weakened by 1% against the U.S. dollar, it would have generated a pre-tax loss of \$ 0.2 million and a pre-tax loss of \$ 0.2 million as of December 31, 2018 and 2017, respectively.

(d) Brazilian real vs. U.S. dollar

If the Brazilian real had weakened by 1% against the U.S. dollar, it would have generated a pre-tax gain of \$1.5 million and a pre-tax gain of \$1.9 million as of December 31, 2018 and 2017, respectively.

We estimate that if the Argentine peso, Mexican peso, Colombian peso and Brazilian real had weakened simultaneously by 1% against the U.S. dollar with all other variables held constant, total pre-tax income for the year would have been \$5.0 million higher (\$4.9 million higher as of December 31, 2017), as a result of foreign exchange gains/losses on translation of U.S. dollar-denominated financial position, mainly trade receivables, trade payables, borrowings and other liabilities.

Considering the same variation of the currencies against the U.S. dollar of all net investments in foreign operations amounting to \$1.8 billion, the currency translation adjustment included in total equity would have been \$17.7 million lower (\$11.9 million lower as of December 31, 2017), arising mainly from the adjustment on translation of the equity related to the Argentine peso and the Brazilian real.

(ii) Interest rate risk

Ternium manages its exposure to interest rate volatility through its financing alternatives and hedging instruments. Borrowings issued at variable rates expose the Company to the risk of increased interest expense in the event of a raise in market interest rates, while borrowings issued at fixed rates expose the Company to a variation in its fair value. The Company's interest-rate risk mainly arises from long-term borrowings that bear variable-rate interest that is partially fixed through different derivative transactions, such as interest rate swaps.

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29. FINANCIAL RISK MANAGEMENT (continued)

Ternium's nominal weighted average interest rate for its debt instruments, which do not include neither the effect of derivative financial instruments, nor the devaluation of the local currencies, was 3.65% and 4.76% for 2018 and 2017, respectively. These rates were calculated using the rates set for each instrument in its corresponding currency and weighted using the dollar-equivalent outstanding principal amount of each instrument as of December 31, 2018 and 2017, respectively.

Ternium's total variable interest rate debt amounted to \$1,747 million (85.8% of total borrowings) at December 31, 2018 and \$2,075 million (64.4% of total borrowings) at December 31, 2017.

If interest rates on the aggregate average notional of U.S. dollar denominated borrowings held during 2018, excluding borrowings with derivatives contracts mentioned in Note 22 (a), had been 100 basis points higher with all other variables held constant, total pre-tax income for the year ended December 31, 2018 would have been \$26.8 million lower (\$20.5 million lower as of December 31, 2017).

1.2) Credit risk

Credit risk arises from cash and cash equivalents, deposits with banks and financial institutions, as well as credit exposures to customers, including outstanding receivables and committed transactions. Ternium's subsidiaries have credit guidelines in place to ensure that derivative and treasury counterparties are limited to high credit quality financial institutions.

Ternium invests in financial assets with a minimum credit rating of investment grade established by an international qualification agency renowned in the financial market, in line with corporate investment portfolio policies.

Approximately 82.6% of the Company's liquid financial assets correspond to investment grade rated instruments as of December 31, 2018, in comparison with approximately 75.7% as of December 31, 2017.

Ternium has no significant concentrations of credit risk from customers. No single customer accounts for more than five percent of Ternium's sales. Ternium's subsidiaries have policies in place to ensure that sales are made to customers with an appropriate credit history, and that credit insurances, letters of credit or other instruments are requested to reduce credit risk whenever deemed necessary. The subsidiaries maintain allowances for potential credit losses. The utilization of credit limits is regularly monitored.

Trade and other receivables are carried at face value less allowance for doubtful accounts, if applicable. This amount does not differ significantly from fair value. The other receivables do not contain significant impaired assets.

As of December 31, 2018, trade receivables total \$1,033.2 million (\$1,011.4 million as of December 31, 2017). These trade receivables are collateralized by guarantees under letter of credit and other bank guarantees of \$23.3 million (\$2.6 million as of December 31, 2017), credit insurance of \$506.8 million (\$380.0 million as of December 31, 2017) and other guarantees of \$18.6 million (\$15.0 million as of December 31, 2017).

As of December 31, 2018, trade receivables of \$1,035.0 million (\$910.7 million as of December 31, 2017) were fully performing.

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## 29. FINANCIAL RISK MANAGEMENT (continued)

As of December 31, 2018, trade receivables of \$112.5 million (\$117.3 million as of December 31, 2017) were past due (mainly up to 180 days).

The amount of the allowance for doubtful accounts was \$14.3 million as of December 31, 2018 (\$16.5 million as of December 31, 2017).

The carrying amounts of the Company's trade and other receivables as of December 31, 2018, are denominated in the following currencies:

Currency	\$ million
U.S. dollar (\$)	1,059
EU euro (EUR)	60
Argentine peso (ARS)	8
Mexican peso (MXN)	171
Brazilian real (BRL)	444
Colombian peso (COP)	83
Other currencies	1
	1,828

## 1.3) Liquidity risk

Management maintains sufficient cash and marketable securities and credit facilities to finance normal operations.

Management monitors rolling forecasts of the group's liquidity reserve on the basis of expected cash flow.

The table below analyses financial liabilities into relevant maturity groups based on the remaining period at the date of the statement of financial position to the contractual maturity date. The amounts disclosed in the table are the contractual undiscounted cash flows.

\$ million	2019	2020	2021	2022	Thereafter
Borrowings	400	528	509	510	90
Interests to be accrued (1)	70	55	35	15	4
Trade payables and other liabilities	907	14	13	14	22
Total	1,377	597	557	539	116

(1) These amounts do not include the effect of derivative financial instruments.

As of December 31, 2018, total borrowings less cash and cash equivalents and other current and non-current investments amounted to \$1,734.9 million.

## 1.4) Capital risk

Ternium seeks to maintain an adequate debt/equity ratio considering the industry and the markets where it operates.

The year-end ratio debt over debt plus equity is 0.21 and 0.36 as of December 31, 2018 and 2017, respectively. The Company does not have to comply with regulatory capital adequacy requirements as known in the financial services industry.

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## 29. FINANCIAL RISK MANAGEMENT (continued)

## 2) Financial instruments by category and fair value hierarchy level

The accounting policies for financial instruments have been applied to the line items below. According to the scope and definitions set out in IFRS 7 and IAS 32, employers' rights and obligations under employee benefit plans, and non-financial assets and liabilities such as advanced payments and income tax payables, are not included.

As of December 31, 2018 (in \$ thousands)	Amortized cost	Assets at fair value through profit or loss	Assets at fair value through OCI	Total
<b>(i) Assets as per statement of financial position</b>				
Receivables	449,077	—	—	449,077
Derivative financial instruments	—	1,588	—	1,588
Trade receivables	1,133,236	—	—	1,133,236
Other investments	14,843	—	36,630	51,473
Cash and cash equivalents	110,086	140,455	—	250,541
<b>Total</b>	<b>1,707,242</b>	<b>142,043</b>	<b>36,630</b>	<b>1,885,915</b>
<b>(ii) Liabilities as per statement of financial position</b>				
As of December 31, 2018 (in \$ thousands)	Liabilities at fair value through profit or loss	Amortized cost	Total	
<b>(i) Liabilities as per statement of financial position</b>				
Other liabilities	—	105,659	105,659	
Trade payables	—	864,827	864,827	
Derivative financial instruments	12,981	—	12,981	
Finance lease liabilities	—	73,828	73,828	
Borrowings	—	2,036,957	2,036,957	
<b>Total</b>	<b>12,981</b>	<b>3,081,271</b>	<b>3,094,252</b>	
As of December 31, 2017 (in \$ thousands)	Loans and receivables	Assets at fair value through profit or loss	Held to maturity	Total
<b>(i) Assets as per statement of financial position</b>				
Receivables	488,718	—	—	488,718
Derivative financial instruments	—	2,304	—	2,304
Trade receivables	1,011,430	—	—	1,011,430

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Other investments	30,231	99,505	6,129	135,865
Cash and cash equivalents	101,444	236,335	—	337,779
Total	1,631,823	338,144	6,129	1,976,096
As of December 31, 2017 (in \$ thousands)	Derivatives	Other financial liabilities	Held to maturity	Total
(ii) Liabilities as per statement of financial position				
Other liabilities	—	116,549	—	116,549
Trade payables	—	860,767	—	860,767
Derivative financial instruments	6,001	—	—	6,001
Finance lease liabilities	—	77,035	—	77,035
Borrowings	—	3,221,907	—	3,221,907
Total	6,001	4,276,258	—	4,282,259

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Consolidated Financial Statements as of December 31, 2018 and 2017  
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## 29. FINANCIAL RISK MANAGEMENT (continued)

## Fair Value by Hierarchy

Following the requirements contained in IFRS 13, Ternium categorizes each class of financial instrument measured at fair value in the statement of financial position into three levels, depending on the significance of the judgment associated with the inputs used in making the fair value measurements:

Level 1 comprises financial assets and financial liabilities whose fair values have been determined on the basis of quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 includes financial assets and financial liabilities for which fair values have been estimated using inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3 comprises financial instruments for which inputs to estimate fair value of the assets or liabilities are not based on observable market data (unobservable inputs).

The following table presents the assets and liabilities that are measured at fair value as of December 31, 2018 and 2017:

Description	Fair value measurements as of December 31, 2018 (in \$ thousands):		
	Total	Level 1	Level 2
Financial assets at fair value through profit or loss / OCI			
Cash and cash equivalents	140,455	140,455	—
Other investments	36,630	36,630	—
Derivative financial instruments	1,588	—	1,588
Total assets	178,673	177,085	1,588
Financial liabilities at fair value through profit or loss / OCI			
Derivative financial instruments	12,981	—	12,981
Total liabilities	12,981	—	12,981

Description	Fair value measurements as of December 31, 2017 (in \$ thousands):		
	Total	Level 1	Level 2
Financial assets at fair value through profit or loss			
Cash and cash equivalents	236,335	236,335	—
Other investments	99,505	99,505	—
Derivative financial instruments	2,304	—	2,304
Total assets	338,144	335,840	2,304
Financial liabilities at fair value through profit or loss			

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Derivative financial instruments	6,001	—	6,001
Total liabilities	6,001	—	6,001

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Consolidated Financial Statements as of December 31, 2018 and 2017  
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29. FINANCIAL RISK MANAGEMENT (continued)

There were no significant transfers between Level 1 and Level 2 of the fair value hierarchy and there were no financial assets and liabilities considered as Level 3.

The fair value of financial instruments traded in active markets is based on quoted market prices at the reporting date. A market is regarded as active if quoted prices are readily and regularly available from an exchange, dealer, broker, industry group, pricing service, or regulatory agency, and those prices represent actual and regularly occurring market transactions on an arm's length basis. The quoted market price used for financial assets held by Ternium is the current mid price. These instruments are included in Level 1 and comprise primarily corporate and sovereign debt securities.

The fair value of financial instruments that are not traded in an active market (such as certain debt securities, certificates of deposits with original maturity of more than three months, forward and interest rate derivative instruments) is determined by using valuation techniques which maximize the use of observable market data when available and rely as little as possible on entity specific estimates. If all significant inputs required to value an instrument are observable, the instrument is included in Level 2. Ternium values its assets and liabilities included in this level using mid prices, interest rate curves, broker quotations, current exchange rates and forward rates volatilities obtained from market contributors as of the valuation date.

If one or more of the significant inputs are not based on observable market data, the instruments are included in Level 3. Ternium values its assets and liabilities in this level using observable market inputs and management assumptions which reflect the Company's best estimate on how market participants would price the asset or liability at measurement date.

3 Accounting for derivative financial instruments and hedging activities

Derivative financial instruments are initially recognized in the statement of financial position at cost and subsequently measured at fair value. Changes in fair value are disclosed under "Other financial income (expenses), net" line item in the income statement. Ternium does not hedge its net investments in foreign entities.

Ternium designates certain derivatives as hedges of a particular risk associated with a recognized asset or liability or a highly probable forecast transaction. These transactions are classified as cash flow hedges (mainly interest rate swaps). The effective portion of the fair value of derivatives that are designated and qualify as cash flow hedges is recognized within other comprehensive income. Amounts accumulated in other comprehensive income are recognized in the income statement in the same period than any offsetting losses and gains on the hedged item. The gain or loss relating to the ineffective portion is recognized immediately in the income statement. The fair value of Ternium derivative financial instruments (asset or liability) continues to be reflected on the statement of financial position.

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29. FINANCIAL RISK MANAGEMENT (continued)

For transactions designated and qualifying for hedge accounting, Ternium documents at inception the relationship between hedging instruments and hedged items, as well as its risk management objectives and strategy for undertaking various hedge transactions. The Company also documents its assessment, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in fair values or cash flows of hedged items. At December 31, 2018, the effective portion of designated cash flow hedges amounts to \$0.5 million (net of taxes) and is included as “Cash flow hedges” line item in the statement of comprehensive income.

The fair values of various derivative instruments used for hedging purposes are disclosed in Note 22. The full fair value of a hedging derivative is classified as a non-current asset or liability when the remaining maturity of the hedged item is more than 12 months and as a current asset or liability when the remaining maturity of the hedged item is less than 12 months.

Changes in the fair value of any derivative instruments that do not qualify for hedge accounting under IAS 39 are recognized immediately in the income statement.

4) Fair value estimation

The estimated fair value of a financial instrument is the amount at which the instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

For the purpose of estimating the fair value of financial assets and liabilities with maturities of less than one year, the Company uses the market value less any estimated credit adjustments. For other investments, the Company uses quoted market prices.

As most borrowings incorporate floating rates that approximate market rates and the contractual repricing occurs mostly every 1 month, the fair value of the borrowings approximates their carrying amount and it is not disclosed separately.

In assessing the fair value of derivatives and other financial instruments, Ternium uses a variety of methods, including, but not limited to, estimated discounted value of future cash flows using assumptions based on market conditions existing at each year end.

30. SUBSEQUENT EVENTS - TECHGEN REFINANCING

On February 13, 2019, Techgen entered into a \$640 million loan agreement with several banks to refinance its obligations under the existing syndicated loan. Techgen’s obligations under the new facility, which is “non-recourse” on the sponsors, will be guaranteed by a Mexican security trust covering Techgen’ shares, assets and accounts as well as Techgen’s affiliates rights under certain contracts. In addition, Techgen’s collection and payment accounts not subject to the trust have been pledged in favor of the lenders under the new loan agreement, and certain direct agreements -customary for these type of transactions- have been entered into with third parties and affiliates, including in connection with the agreements for the sale of energy produced by the project and the agreements for the provision of gas and long-term maintenance services to Techgen. The commercial terms and conditions governing the purchase, by the Company’s Mexican subsidiaries, of the energy generated by the project remain unchanged.

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30. SUBSEQUENT EVENTS - TECHGEN REFINANCING (Continued)

Under the loan agreement, Techgen is committed to maintain a debt service reserve account covering debt service becoming due during two consecutive quarters; such account is funded by stand-by letters of credit issued for the account of Techgen's sponsors in proportion to their respective participations in Techgen. Accordingly, the Company and its Luxembourg subsidiary Ternium Investments S.à r.l. applied for stand-by letters of credit covering 48% of the debt service coverage ratio, which as of the date hereof amounts to \$21.4 million.

The loan was drawn on February 26, 2019 and the proceeds thereof were used to repay all loans outstanding under the existing facility, and as result Ternium's corporate guarantee issued in connection with the existing syndicated loan has been released.

Pablo Brizzio  
Chief Financial Officer

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Item 19. Exhibits

Exhibit Number	Description
<u>1.1</u>	Updated and Consolidated Articles of Association of Ternium S.A., dated as of May 2, 2018
<u>2.1</u>	Deposit Agreement entered into between Ternium S.A. and The Bank of New York*
<u>4.1</u>	Shareholders' Agreement, dated January 9, 2006, between Tenaris S.A. and Inversora Siderurgica Limited**
<u>4.3</u>	Shareholders Agreement, dated April 10, 2018, between Nippon Steel & Sumitomo Metal Corporation, Nippon Usiminas Co., Ltd., Ternium Investments S.à r.l., Confab Industrial S.A., Prosid Investments S.A., Ternium Argentina S.A., Previdência Usiminas, Metal One Corporation and Mitsubishi Corporation do Brasil S.A. ***
<u>8.1</u>	List of subsidiaries of Ternium S.A.
<u>12.1</u>	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
<u>12.2</u>	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
<u>13.1</u>	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
<u>13.2</u>	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
*	Incorporated by reference to the Registration Statement on Form F-6, filed by Ternium S.A. on January 11, 2006 (File No. 333-130952).
**	Incorporated by reference to the Registration Statement on Form F-1, filed by Ternium S.A. on January 27, 2006 (File No. 333-130950).
***	Incorporated by reference to the Annual Report on Form 20-F, filed by Ternium S.A. on April 24, 2018 (File No. 001-32734 18771303).

SIGNATURE

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

TERNIUM S.A.

/s/ Pablo Brizzio

Name: Pablo Brizzio

Title: Chief Financial Officer

Date: April 16, 2019