Vale S.A.
Form 6-K
April 02, 2018
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United States

Securities and Exchange Commission

Washington, D.C. 20549

FORM 6-K

Report of Foreign Private Issuer

Pursuant to Rule 13a-16 or 15d-16

of the

Securities Exchange Act of 1934

For the month of

March 2018

Vale S.A.

Avenida das Américas, No. 700 Bloco 8, Sala 218
22640-100 Rio de Janeiro, RJ, Brazil

(Address of principal executive office)

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

(Check One) Form 20-F x Form 40-F o

(Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1))

(Check One) Yes o No x

(Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7))

(Check One) Yes o No x

(Indicate by check mark whether the registrant by furnishing the information contained in this Form is also thereby furnishing information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.)

(Check One) Yes o No x

(If Yes is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b). 82- .)

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Financial Statements

December 31, 2017

BRGAAP in R$ (English)

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Vale S.A. Financial Statements

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Independent auditor s report on the financial statements

To The Stockholders, Board Members and Management of

Vale S.A.

Rio de Janeiro - RJ

Opinion

We have audited the individual and consolidated financial statements of Vale S.A. (the Company), identified as Parent Company and Consolidated, respectively, which comprise the individual and consolidated balance sheet as of December 31, 2017, the statements of income, comprehensive income, changes in equity and cash flows for the year then ended, and notes comprising significant accounting policies and other explanatory information. In our opinion, the aforementioned financial statements present fairly, in all material respects, the individual and consolidated financial position of Vale S.A. as of December 31, 2017, and of its individual and consolidated financial performance and its individual and consolidated cash flows for the year then ended in accordance with accounting practices adopted in Brazil and in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board - IASB.

Basis for Opinion

We conducted our audit in accordance with Brazilian and International Standards on Auditing. Our responsibilities under those standards are further described in the Auditors Responsibilities for the Audit of the individual and consolidated Financial Statements section of our report. We are independent of the Company and its subsidiaries in accordance with the ethical requirements of Ethics Standards Boards for Accountants and Professional Standard issued by Federal Accounting Council, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

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Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the current period. These matters were addressed in the context of our audit of the individual and consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

1. Impairment - Individual and consolidated financial statements

As per Notes 17,18 and 19 to the financial statements

Matter

The assessment with respect to the recoverability of property, plant and equipment (PP&E), intangible assets and goodwill, and definition of Cash-Generating Units (CGUs) encompasses significant judgments concerning factors related to the level of future production, commodities price, production cost and economic assumptions such as discount rates, inflation rates and exchange rates of the countries where the Company operates. Due to the materiality of PP&E, intangible assets and goodwill, and to the level of uncertainty for determining the related impairment, which may impact the value of those assets in the individual and consolidated financial statements and the value of the investment recorded under the equity pick-up method in the parent company s financial statements, we considered this subject as a significant matter for the audit.

Our procedures included, among others:

- Design, implementation and operating effectiveness testing of the relevant internal controls on the valuation of the Company s assets, including those aimed at identifying the need for recording or reversing impairment;

- Assessment of the Company s assumptions and estimates to determine the recoverable value of its assets, including the ones related to production, production cost, capital investments, discount rates and exchange rates;

- Assessment of the definition and identification criteria for Cash-Generating Units (CGUs);

- Assessment, with the support of our specialists in economic and financial assumptions, of the cash flow forecast, reasonableness and consistency of the assumptions used in the preparation of the cash flow forecasts and comparison of those assumptions with market information. Based on our knowledge of the Company and Industry, preparation of sensitivity analysis;

- Arithmetic checking of the economic models regarding future cash flows and forecast results, combining them with accounting information and management reports and approved business plans; and

- Appropriateness assessment of the disclosure in relation to the testing of the value in use and the comparison of the latter with the fair value, net of costs to sell, in the applicable cases.

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Based on the evidence obtained through the summarized procedures above, we considered acceptable the balances presented for property, plant and equipment, intangible assets and goodwill, as well as the respective disclosures in the accompanying notes, in the context of the individual and consolidated financial statements taken as a whole, for the year ended December 31, 2017.

2. Asset Retirement Obligation (ARO) - Individual and consolidated financial statements

As per Notes 25 and 26 to the financial statements

Matter

As a result of its operations, the Company incurs in obligations to restore and rehabilitate the environment on retiring the areas. The areas and environment rehabilitation is required by the combination of both the legislation in force and the Company s policies. Estimating costs related to those future activities requires considerable judgment in relation to factors such as how long a certain area will be used, the time required to rehabilitate and certain economic assumptions such as the discount rate and foreign currency exchange rates. Due to the relevance of the asset retirement obligations and the level of uncertainty for the determination of its estimate, which may impact the amount of this provision in the individual and consolidated financial statements and the amount of the investment recorded under the equity pick-up method in the financial statements of the parent company, we consider this subject as a significant matter for the audit.

Our procedures included, among others:

- Design, implementation and operating effectiveness testing of the relevant internal controls related to the determination of estimates for the asset retirement obligation provision to restore and rehabilitate areas commercially exploited by the Company;

- Analysis of assumptions used, including the base cost of the areas to be left, inflation rates, discount rates and risk rates;

- Analysis of the provision movement for the year related to the retired, restored/rehabilitated areas, and the relevant environmental obligation, aiming at verifying the primary inputs such as costs, inflation and discount rates, as well as an approved retirement plan; and

- Evaluate, with the support of our corporate finance specialists, the reasonableness and consistency of the assumptions used in preparation of the estimative of the asset retirement obligation provision in the areas commercially exploited by the Company;

- Arithmetic review of the estimative results, comparing them with the accounting information and management reports; and

- Appropriateness assessment of the disclosure in relation to the obligations to rehabilitate the environment on retiring the areas.

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Based on the evidence obtained through the procedures described above, we considered acceptable the balance of the asset retirement obligation provision to restore and rehabilitate areas commercially exploited by the Company, in the context of the individual and consolidated financial statements taken as a whole, for the year ended December 31, 2017.

3. Income taxes - Individual and consolidated financial statements

As per Note 8 to the financial statements.

Matter

The Company has operations in various countries, each one with its own taxation regime. The nature of the Company s activities triggers various tax liabilities, including tax on income, and social contributions. The nature of the Company s commodities export operations also create complexities related to international transfer pricing issues. Applying tax legislation is a complex and highly specialized activity, which requires judgment for the assessment of tax exposure estimates and for quantification of contingent liabilities. Due to the level of uncertainty and judgment involved in determining this estimate that may impact the amount recorded in the individual and consolidated financial statements and the amount of the investment recorded under the equity pick-up method in the parent company s financial statements, we consider this subject as a significant matter for the audit.

Our procedures included, among others:

- Design, implementation and operating effectiveness testing of the relevant internal controls related to the determination of estimates for recording the amounts of provisions for taxes and contributions payable and taxes to be offset by the Company;

- With the support of our specialists from the tax department, we assess the criteria used for determining and paying taxes and contributions and the assumptions used by the Company to determine the provisions and amounts disclosed as tax exposure and contingencies;

- We compare the assumptions used by the Company with the tax legislation applicable to each jurisdiction, and in relation to market practices and assessments performed by ourselves, based on our knowledge of and experience in the Company s operations in the use of the aforementioned legislation and on applicable precedents and sentences; and

- Assessment of the appropriateness of the Company s disclosures, particularly disclosures regarding current and deferred taxes and contributions and possible tax exposure.

Based on the evidence obtained through the summarized procedures above, we considered acceptable the balance of deferred taxes and contributions payable on income in the context of the individual and consolidated financial statements taken as a whole, for the year ended December 31, 2017.

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4. Provisions for litigation and disclosures of contingent liabilities - Individual and consolidated financial statements

As per Note 27 to the financial statements

Matter

The Company is a party (as defendant) to various litigation of tax, civil and labor nature deriving from the ordinary course of its activities. The measurement, accounting recognition of a provision, and the disclosures of Provisions and Contingent Liabilities, related to the aforementioned litigation, require judgment from the Company s professionals and from its legal advisors with respect to the integrity of the existing cases, the appropriateness of the provisions recorded and their corresponding disclosures. Due to the materiality, complexity and judgment involved in the assessment and measurement of the Provisions and Contingent Liabilities, which may impact the amount recorded in the individual and consolidated financial statements and the amount of the investment recorded under the equity pick-up method in the financial statements of the parent company and, the disclosures of contingent liabilities, we consider this subject as a significant matter for the audit.

Our procedures included, among others:

- Design, implementation and operating effectiveness testing of the internal control related to the determination of estimates for recording the amounts in accordance with the loss prognosis for the lawsuits;

- Assessment of the sufficiency of provisions recognized and the amount of contingent liabilities disclosed, by means of analysis of criteria and assumptions used for measuring amounts recorded as provision and/or amounts disclosed, and took into account the assessments prepared by the Company s internal and external legal advisors, and comparison with the existing precedents;

- Assess the analysis of chances of loss regarding existing documentation and information related to the principal proceedings and complaints involving the Company through external confirmation of balances with their internal and external legal advisors;

- Assessment of the appropriateness of the Company s disclosures in relation to lawsuits provision and contingent liabilities.

Based on the evidence obtained through the procedures summarized above, we considered acceptable the balances of the provision for litigation and disclosures of contingent liabilities in the context of the individual and consolidated financial statements taken as a whole for the year ended December 31, 2017.

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5. Financial Instruments - Individual and consolidated financial statements

As per Notes 22, 23, 24 and 33 to the financial statements.

Matter

The Company contracts financial instruments which much be measured and assessed at their fair value - including derivative financial instruments, forward operations, swap operations, futures operations and zero cost-collars - as a strategy to hedge equity. Additionally, beginning on January 1st, 2017, the Company adopted hedge accounting for investments in foreign operations, designating its foreign currency loans as an instrument in a hedge transaction for its net investments in foreign operations, in order to mitigate exchange rate risk in its individual and consolidated financial statements.Estimating the fair value of financial instruments not traded on active markets requires considerable judgment from the Company when determining prices or parameters and assumptions such as the classification of fair value hierarchy, discount rates for calculating present value, taking the existing market conditions into account as of the reporting date. Due to the materiality, complexity and judgment involved in assessing and measuring the financial instruments, whether derivative financial instruments or not, which may impact the amount recorded in the individual and consolidated financial statements and the amount of the investment recorded under the equity pick-up method in the financial statements of the parent company, we consider this subject as a significant matter for the audit.

Our procedures included, among others:

- Design, implementation and operating effectiveness testing of the relevant internal controls related to the process of identifying and valuing financial instruments;

- We tested the models developed by the Company, with the support of our specialists in financial instruments, to determine fair values and reasonableness of data, parameters and information included in the pricing models used, recalculated the amount of operations, and compared the assumptions used to determine fair values with similar operations performed in the marketplace;

- With support of our specialists, we obtained an understanding of the hedge strategies adopted by the Company including those related to hedge accounting for net investments in foreign operations. We evaluated the adequacy of the documentation prepared by the Company that supports the designation as hedge accounting, specifically the formal designations containing the descriptions of all strategies and methodologies used to measure effectiveness. We also recalculated the effectiveness test of prospective and retrospective coverage prepared by the Company. In addition, we compared the amounts measured with those presented in the note disclosures.

- Assessment of the appropriateness of the Company s disclosures, regarding sensitivity analyses, interest rate risk and foreign exchange risk, and the classification of instruments, among others.

Based on the evidence obtained through the procedures described above, we considered acceptable the balances of financial instruments including hedge accounting for net investments in foreign operations, in the context of the individual and consolidated financial statements taken as a whole, for the year ended December 31, 2017.

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Other Information - Statement of Added Value

The individual and consolidated statements of value added (DVA) for the year ended December 31, 2017, prepared under the responsibility of the Company s management, and presented as supplementary information for IFRS purposes, was submitted for the auditing procedures jointly with audit of the Company s financial statements. For the purposes of forming our opinion, we evaluate whether these statements are reconciled with the financial statements and accounting records, as applicable, and if their form and content are in accordance with the criteria as defined in Technical Pronouncement CPC 09 - Statement of Added Value. In our opinion, this statement of value added have been properly prepared, in all material respects, in accordance with the criteria defined in this Technical Pronouncement and is consistent with the individual and consolidated financial statements taken as a whole.

Other information accompanying the individual and consolidated financial statements and the auditor s report

Management is responsible for the other information, which comprises the Management report.

Our opinion on the individual and consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the individual and consolidated financial statements, our responsibility is to read the Management Report and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this Management Report, we are required to report that fact. We have nothing to report regarding this matter.

Responsibilities of management and those charged with governance for the individual and consolidated financial statements

Management is responsible for the preparation and fair presentation of the individual and consolidated financial statements in accordance with accounting practices adopted in Brazil and in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB) , and for such internal control as management determines is necessary to enable the preparation of individual and consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the individual and consolidated financial statements, management is responsible for assessing the Company s ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company and subsidiaries or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Company s and its subsidiaries financial reporting process.

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Auditors responsibilities for the audit of the individual and consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the individual and consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Brazilian and International Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these individual and consolidated financial statements.

As part of an audit in accordance with Brazilian and International Standards on Auditing, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the individual and consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management s use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company s ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors report to the related disclosures in the individual and consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors report. However, future events or conditions may cause the Company to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the individual and consolidated financial statements represent the underlying transactions

and events in a manner that achieves fair presentation.

- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

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We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the (consolidated) financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditors report unless law or regulation precludes public disclosure about the matter, or, when in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Rio de Janeiro, February 27, 2018

KPMG Auditores Independentes

CRC SP-014428/O-6 F-RJ

(Original report in Portuguese signed by)

Manuel Fernandes Rodrigues de Sousa

Accountant CRC RJ-052428/O-2

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Income Statement

In millions of Brazilian reais, except earnings per share data

		Year ended December 31				
		Consolidated			Parent company	
	Notes	2017	2016	2015	2017	2016
Continuing operations						
Net operating revenue	3(d)	108,532	94,633	78,057	64,037	46,424
Cost of goods sold and services rendered	5(a)	(67,257)	(61,143)	(62,780)	(33,327)	(29,663)
Gross profit		**41,275**	**33,490**	**15,277**	**30,710**	**16,761**
Operating (expenses) income						
Selling and administrative expenses	5(b)	(1,697)	(1,755)	(2,009)	(959)	(1,021)
Research and evaluation expenses		(1,086)	(1,098)	(1,326)	(679)	(677)
Pre operating and operational stoppage		(1,317)	(1,570)	(3,127)	(941)	(684)
Equity results from subsidiaries					5,277	6,503
Other operating expenses, net	5(c)	(1,338)	(937)	(588)	(893)	(1,166)
		(5,438)	**(5,360)**	**(7,050)**	**1,805**	**2,955**
Impairment and other results on non-current assets	15, 18 and 19	(1,025)	(4,168)	(33,893)	(549)	205
Operating income (loss)		**34,812**	**23,962**	**(25,666)**	**31,966**	**19,921**
Financial income	6	11,074	27,657	25,968	8,864	25,656
Financial expenses	6	(20,724)	(21,355)	(62,021)	(18,225)	(19,900)
Equity results in associates and joint ventures	15	302	1,111	(1,526)	302	1,111
Impairment and other results in associates and joint ventures	15, 19 and 21	(579)	(4,353)	(1,431)	(579)	(4,233)
Income (loss) before income taxes		**24,885**	**27,022**	**(64,676)**	**22,328**	**22,555**
Income taxes	8					
Current tax		(2,664)	(3,307)	(1,148)	(1,158)	(2,186)
Deferred tax		(1,943)	(6,260)	20,487	(957)	(2,908)
		(4,607)	**(9,567)**	**19,339**	**(2,115)**	**(5,094)**
Net income (loss) from continuing operations		**20,278**	**17,455**	**(45,337)**	**20,213**	**17,461**
Net income (loss) attributable to noncontrolling interests		65	(6)	(1,815)		
Net income (loss) from continuing operations attributable to Vale s stockholders		**20,213**	**17,461**	**(43,522)**	**20,213**	**17,461**
Discontinued operations	14					
Loss from discontinued operations		(2,608)	(4,159)	(660)	(2,586)	(4,150)
Net income (loss) attributable to noncontrolling interests		(22)	(9)	31		
Loss from discontinued operations attributable to Vale s stockholders		**(2,586)**	**(4,150)**	**(691)**	**(2,586)**	**(4,150)**

Net income (loss)		**17,670**	**13,296**	**(45,997)**	**17,627**	**13,311**
Net income (loss) attributable to noncontrolling interests		43	(15)	(1,784)		
Net income (loss) attributable to Vale s stockholders		**17,627**	**13,311**	**(44,213)**	**17,627**	**13,311**
Earnings (loss) per share attributable to Vale s stockholders:						
Basic and diluted earnings (loss) per share (restated):	9					
Common share (R$)		3.39	2.56	(8.51)	3.39	2.56

The accompanying notes are an integral part of these financial statements.

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Statement of Comprehensive Income

In millions of Brazilian reais

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Net income (loss)	**17,670**	**13,296**	**(45,997)**	**17,627**	**13,311**
Other comprehensive income (loss):					
Items that will not be reclassified subsequently to the income statement					
Retirement benefit obligations	(164)	(266)	257	(125)	(107)
Equity results in associates and joint ventures				(39)	(156)
Total items that will not be reclassified subsequently to the income statement, net of tax	**(164)**	**(266)**	**257**	**(164)**	**(263)**
Items that may be reclassified subsequently to the income statement					
Translation adjustments	3,337	(14,188)	35,944	3,309	(13,283)
Cash flow hedge		20	2,632		
Net investments hedge	(310)	4	2	(310)	
Equity results in associates and joint ventures		16	(17)		30
Transfer of realized results to net income	(34)	(276)	(1,157)		(266)
Total of items that may be reclassified subsequently to the income statement, net of tax	**2,993**	**(14,424)**	**37,404**	**2,999**	**(13,519)**
Total comprehensive income (loss)	**20,499**	**(1,394)**	**(8,336)**	**20,462**	**(471)**
Comprehensive income (loss) attributable to noncontrolling interests	37	(923)	(252)		
Comprehensive income (loss) attributable to Vale s stockholders	**20,462**	**(471)**	**(8,084)**		
From continuing operations	20,568	(13)	(8,439)		
From discontinued operations	(106)	(458)	355		
	20,462	**(471)**	**(8,084)**		

Items above are stated net of tax and the related taxes are disclosed in note 8.

The accompanying notes are an integral part of these financial statements.

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Statement of Cash Flows

In millions of Brazilian reais

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Cash flow from operating activities:					
Income (loss) before income taxes from continuing operations	24,885	27,022	(64,676)	22,328	22,555
Continuing operations adjustments for:					
Equity results in investees	(302)	(1,111)	1,526	(5,579)	(7,614)
Impairment and other results on non-current assets	1,025	4,168	33,893	549	(205)
Impairment and other results in associates and joint ventures	587	4,353	1,431	579	4,233
Depreciation, amortization and depletion	11,842	12,107	12,450	5,604	5,209
Financial results, net	9,650	(6,302)	36,053	9,361	(5,756)
Changes in assets and liabilities:					
Accounts receivable	3,983	(9,863)	5,212	15,301	4,503
Inventories	(1,030)	616	(749)	(612)	(135)
Suppliers and contractors	691	768	2,143	670	243
Provision - Payroll, related charges and others remunerations	1,236	435	(1,713)	980	714
Other taxes assets and liabilities, net	(976)	(371)	(687)	(514)	(227)
Deferred revenue - Gold stream		1,683	1,670		
Other assets and liabilities, net	(1,734)	2,225	(896)	677	(1,923)
	49,857	**35,730**	**25,657**	**49,344**	**21,597**
Interest on loans and borrowings paid	(5,373)	(5,894)	(4,812)	(5,911)	(5,905)
Derivatives paid, net	(763)	(5,604)	(3,771)	(577)	(2,215)
Interest on participative stockholders debentures paid	(428)	(268)	(209)	(428)	(268)
Income taxes	(1,763)	(1,401)	(1,790)	(824)	(69)
Income taxes - Settlement program	(1,559)	(1,426)	(1,284)	(1,527)	(1,397)
Net cash provided by operating activities from continuing operations	**39,971**	**21,137**	**13,791**	**40,077**	**11,743**
Cash flow from investing activities:					
Financial investments redeemed (invested)	(256)	45	932	(255)	15
Loans and advances - net receipts (payments) (note 21)	(1,421)	(698)	(34)	(8,037)	3,069
Guarantees and deposits - net receipts (payments)	(150)	(141)	(246)	(143)	(127)
Additions to investments	(292)	(875)	(332)	(1,895)	(1,918)
Additions to property, plant and equipment and intangible	(12,236)	(17,343)	(26,931)	(8,413)	(11,494)
Proceeds from disposal of assets and investments (note 15)	2,926	1,785	5,211	23	169
Dividends and interest on capital received from associates and joint ventures	739	669	1,064	2,645	1,591
Proceeds from gold stream transaction		885	1,156		
Net cash used in investing activities from continuing operations	**(10,690)**	**(15,673)**	**(19,180)**	**(16,075)**	**(8,695)**

Cash flow from financing activities:					
Loans and borrowings					
Additions	6,223	25,667	16,603	2,014	10,126
Repayments	(28,878)	(26,630)	(9,949)	(21,058)	(11,651)
Transactions with stockholders:					
Dividends and interest on capital attributed to stockholders	(4,667)	(857)	(5,026)	(4,667)	(857)
Dividends and interest on capital paid to noncontrolling interest	(404)	(972)	(46)		
Transactions with noncontrolling stockholders (note 15)	(305)	(69)	3,875		19
Net cash provided by (used in) financing activities from continuing operations	**(28,031)**	**(2,861)**	**5,457**	**(23,711)**	**(2,363)**
Net cash provided by (used in) discontinued operations (note 14)	**(817)**	**(527)**	**785**		
Increase in cash and cash equivalents	**433**	**2,076**	**853**	**291**	**685**
Cash and cash equivalents in the beginning of the period	13,891	14,022	10,555	1,203	518
Effect of exchange rate changes on cash and cash equivalents	38	(2,207)	2,614		
Effects of disposals of subsidiaries and merger, net on cash and cash equivalents	(44)			382	
Cash and cash equivalents at end of the period	**14,318**	**13,891**	**14,022**	**1,876**	**1,203**
Non-cash transactions:					
Additions to property, plant and equipment - capitalized loans and borrowing costs	1,179	2,291	2,531	1,176	1,679

The accompanying notes are an integral part of these financial statements.

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Statement of Financial Position

In millions of Brazilian reais

	Notes	Consolidated December 31, 2017	December 31, 2016	Parent company December 31, 2017	December 31, 2016
Assets					
Current assets					
Cash and cash equivalents	20	14,318	13,891	1,876	1,203
Accounts receivable	10	8,602	11,937	9,560	26,223
Other financial assets	13	6,689	951	409	665
Inventories	11	12,987	10,913	4,601	3,982
Prepaid income taxes		2,584	518	2,378	312
Recoverable taxes	12	3,876	5,296	2,091	3,962
Others		1,780	2,047	1,542	972
		50,836	**45,553**	**22,457**	**37,319**
Non-current assets held for sale	14	11,865	27,994	7,082	8,936
		62,701	**73,547**	**29,539**	**46,255**
Non-current assets					
Judicial deposits	27(c)	6,571	3,135	6,110	2,681
Other financial assets	13	10,690	2,041	1,865	2,178
Prepaid income taxes		1,754	1,718		
Recoverable taxes	12	2,109	2,368	2,062	2,223
Deferred income taxes	8(a)	21,959	23,931	14,200	15,299
Others		882	899	810	618
		43,965	**34,092**	**25,047**	**22,999**
Investments	15	11,802	12,046	117,387	107,539
Intangibles	17	28,094	22,395	13,471	11,314
Property, plant and equipment	18	181,535	180,616	102,978	102,056
		265,396	**249,149**	**258,883**	**243,908**
Total assets		**328,097**	**322,696**	**288,422**	**290,163**
Liabilities					
Current liabilities					
Suppliers and contractors		13,367	11,830	7,503	7,116
Loans and borrowings	20	5,633	5,410	4,378	4,171
Other financial liabilities	13	1,237	2,499	4,413	9,956
Taxes payable	8(d)	2,307	2,144	1,991	1,883
Provision for income taxes		1,175	556		
Liabilities related to associates and joint ventures	21	1,080	951	1,080	951
Provisions	25	4,610	3,103	2,904	1,792
Dividends and interest on capital	29(d)	4,742	2,660	4,439	2,602
Others		5,307	3,903	2,552	1,242
		39,458	**33,056**	**29,260**	**29,713**
Liabilities associated with non-current assets held for sale	14	3,899	3,554		

		43,357	**36,610**	**29,260**	**29,713**
Non-current liabilities					
Loans and borrowings	20	68,759	90,154	28,966	47,877
Other financial liabilities	13	9,575	6,804	54,955	56,802
Taxes payable	8(d)	16,176	16,170	15,853	15,838
Deferred income taxes	8(a)	5,687	5,540		
Provisions	25	23,243	18,730	6,900	4,396
Liabilities related to associates and joint ventures	21	2,216	2,560	2,216	2,560
Deferred revenue - Gold stream		6,117	6,811		
Others		4,861	5,615	6,514	5,736
		136,634	**152,384**	**115,404**	**133,209**
Total liabilities		**179,991**	**188,994**	**144,664**	**162,922**
Stockholders equity	29				
Equity attributable to Vale s stockholders		143,758	127,241	143,758	127,241
Equity attributable to noncontrolling interests		4,348	6,461		
Total stockholders equity		**148,106**	**133,702**	**143,758**	**127,241**
Total liabilities and stockholders equity		**328,097**	**322,696**	**288,422**	**290,163**

The accompanying notes are an integral part of these financial statements.

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Statement of Changes in Equity

In millions of Brazilian reais

	Share capital	Results on conversion of shares	Capital reserve	Results from operation with noncontrolling interest	Profit reserves	Treasury stocks	Unrealized fair value gain (losses)	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale s stockholders	Equ attribut noncont inter
Balance at December 31, 2014	**77,300**	**50**		**(970)**	**53,085**	**(2,746)**	**(4,553)**	**24,248**		**146,414**	
Loss									**(44,213)**	**(44,213)**	
Other comprehensive income:											
Retirement benefit obligations							260			260	
Cash flow hedge							1,458			1,458	
Available-for-sale financial instruments							2			2	
Translation adjustments							(1,040)	35,449		34,409	
Transactions with stockholders:											
Dividends and interest on capital of Vale s stockholders					(5,026)					(5,026)	
Dividends of noncontrolling interest											
Acquisitions and disposal of noncontrolling interest (note 15)				(911)				(1,233)		(2,144)	
Capitalization of noncontrolling interest advances											
Appropriation to undistributed retained earnings					(44,213)				44,213		
Balance at December 31, 2015	**77,300**	**50**		**(1,881)**	**3,846**	**(2,746)**	**(3,873)**	**58,464**		**131,160**	
									13,311	**13,311**	

Net income (loss)									
Other comprehensive income:									
Retirement benefit obligations						(263)			(263)
Cash flow hedge						26			26
Available-for-sale financial instruments						4			4
Translation adjustments						367	(13,916)		(13,549)
Transactions with stockholders:									
Dividends and interest on capital of Vale s stockholders								(3,459)	(3,459)
Dividends of noncontrolling interest									
Acquisitions and disposal of noncontrolling interest (note 15)			11						11
Capitalization of noncontrolling interest advances									
Appropriation to undistributed retained earnings				9,852				(9,852)	
Balance at December 31, 2016	**77,300**	**50**	**(1,870)**	**13,698**	**(2,746)**	**(3,739)**	**44,548**		**127,241**
Net income								**17,627**	**17,627**
Other comprehensive income:									
Retirement benefit obligations						(164)			(164)
Net investments hedge (note 24b)							(310)		(310)
Translation adjustments						(9)	3,318		3,309
Transactions with stockholders:									
Dividends and interest on capital of Vale s stockholders				(2,065)				(4,721)	(6,786)
Dividends of noncontrolling interest									
Acquisitions and disposal of noncontrolling interest (note 15)			(793)						(793)

Capitalization of noncontrolling interest advances										
Appropriation to undistributed retained earnings					12,906				(12,906)	
Merger of Valepar (note 29)			3,634							3,634
Balance at December 31, 2017	**77,300**	**50**	**3,634**	**(2,663)**	**24,539**	**(2,746)**	**(3,912)**	**47,556**		**143,758**

The accompanying notes are an integral part of these financial statements.

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Value Added Statement

In millions of Brazilian Reais

	Year ended December 31			
	Consolidated		Parent company	
	2017	2016	2017	2016
Generation of value added from continuing operations				
Gross revenue				
Revenue from products and services	110,007	95,915	65,049	47,173
Results on measurement or sale of non-current assets	(1,706)	(1,074)	(549)	(597)
Revenue from the construction of own assets	6,449	12,721	5,857	10,185
Allowance for doubtful accounts	(14)	(9)	4	(3)
Other revenues	663	1,459	419	387
Less:				
Acquisition of products	(1,728)	(1,758)	(652)	(821)
Material, service and maintenance	(27,022)	(29,819)	(16,796)	(19,328)
Oil and gas	(4,199)	(4,284)	(2,872)	(2,720)
Energy	(3,108)	(2,414)	(1,470)	(1,040)
Freight	(10,717)	(8,641)	(106)	(71)
Impairment of non-current assets and others results	102	(7,447)	(579)	(3,431)
Other costs and expenses	(7,681)	(12,118)	(3,027)	(1,390)
Gross value added	**61,046**	**42,531**	**45,278**	**28,344**
Depreciation, amortization and depletion	(11,842)	(12,107)	(5,604)	(5,209)
Net value added	**49,204**	**30,424**	**39,674**	**23,135**
Received from third parties				
Equity results from entities	302	1,111	5,945	6,754
Equity results from descontinued operations			(2,952)	(3,290)
Financial income	1,532	606	364	345
Monetary and exchange variation of assets	500	(6,791)	443	(6,398)
Total value added from continuing operations to be distributed	**51,538**	**25,350**	**43,474**	**20,546**
Value added from discontinued operations to be distributed	1,534	2,439		
Total value added to be distributed	**53,072**	**27,789**	**43,474**	**20,546**
Personnel	7,673	7,699	3,702	3,082
Taxes and contributions	6,553	4,835	6,528	7,124
Current income tax	2,664	3,307	1,158	2,186
Deferred income tax	1,943	6,260	957	2,908
Financial expense (excludes capitalized interest)	11,325	10,169	8,483	9,987
Monetary and exchange variation of liabilities	2,630	(17,610)	1,950	(17,807)
Other remunerations of third party funds	1,058	(2,615)	3,069	(245)
Reinvested net income (absorbed loss)	17,627	13,311	17,627	13,311
Net income (loss) attributable to noncontrolling interest	65	(6)		
Distributed value added from continuing operations	**51,538**	**25,350**	**43,474**	**20,546**
Distributed value added from discontinued operations	1,534	2,439		
Distributed value added	**53,072**	**27,789**	**43,474**	**20,546**

The accompanying notes are an integral part of these financial statements.

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Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

1. Corporate information

Vale S.A. (the Parent Company) is a public company headquartered in the city of Rio de Janeiro, Brazil with securities traded on the stock exchanges of São Paulo - B3 S.A. (Vale3), New York - NYSE (VALE), Paris - NYSE Euronext (Vale3) and Madrid - LATIBEX (XVALO).

Vale S.A. and its direct and indirect subsidiaries (Vale or Company) are global producers of iron ore and iron ore pellets, key raw materials for steelmaking, and producers of nickel, which is used to produce stainless steel and metal alloys employed in the production of several products. The Company also produces copper, metallurgical and thermal coal, manganese ore, ferroalloys, platinum group metals, gold, silver and cobalt. The information by segment is presented in note 3.

On December 22, 2017 after the conversion of the class A preferred shares into common shares, the Company migrated to the special listing segment of B3 S.A. (Novo Mercado), and became a company with no defined controlling shareholder (further details in the notes 4 and 29). As of this date, Vale s common shares are traded in the Novo Mercado.

2. Basis for preparation of the financial statements

a) Statement of compliance

The consolidated and individual financial statements of the Company (financial statements) have been prepared and are being presented in accordance with the International Financial Reporting Standards (IFRS) as implemented in Brazil by the Brazilian Accountant Pronouncements Committee (CPC), approved by the Brazilian Securities Exchange Commission (CVM) and by the Brazilian Federal Accounting Council (CFC). All relevant information from its own financial statements, and only this information, are being presented and correspond to those used by the Company s Management.

b) Basis of presentation

The financial statements have been prepared under the historical cost convention as adjusted to reflect: (i) the fair value of financial instruments measured at fair value through income statement or available-for-sale financial instruments measured at fair value through the statement of comprehensive income; and (ii) impairment of assets.

The issue of these financial statements was authorized by the Board of Directors on February 27, 2018.

c) Consolidation and investments

The financial statements reflect the assets, liabilities and transactions of the Parent Company and its direct and indirect controlled entities (subsidiaries). These subsidiaries are consolidated when the Company is exposed or has rights to variable returns from its involvement with the investee and has the ability to direct the significant activities of the investee. The Company also consolidates subsidiaries that Vale does not own the majority of the voting capital, but has control through other means, such as a stockholder s agreement. Intercompany balances and transactions, which include unrealized profits, are eliminated.

The entities over which the Company has joint control (joint ventures) or significant influence, but not control (associates) are presented in note 15. Those investments are accounted for using the equity method. For interests in joint arrangements not classified as joint ventures (joint operations), the Company recognizes its share of assets, liabilities and net income.

Unrealized gains on downstream or upstream transactions between the Company and its associates and joint ventures are eliminated fully or proportionately to the Company s interest.

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The material consolidated entities in each business segment are as follows:

	Location	Main activity/Business	% Ownership	% Voting capital	% Noncontrolling interest
Direct and indirect subsidiaries					
Companhia Portuária da Baía de Sepetiba	Brazil	Iron ore	100.0%	100.0%	0.0%
Mineração Corumbaense Reunida S.A.	Brazil	Iron ore and manganese	100.0%	100.0%	0.0%
Minerações Brasileiras Reunidas S.A. (MBR)	Brazil	Iron ore	62.5%	98.3%	37.5%
Salobo Metais S.A.	Brazil	Copper	100.0%	100.0%	0.0%
PT Vale Indonesia	Indonesia	Nickel	59.2%	59.2%	40.8%
Vale International Holdings GmbH	Austria	Holding and research	100.0%	100.0%	0.0%
Vale Canada Limited	Canada	Nickel	100.0%	100.0%	0.0%
Vale International S.A.	Switzerland	Trading and holding	100.0%	100.0%	0.0%
Vale Malaysia Minerals Sdn.Bhd.	Malaysia	Iron ore	100.0%	100.0%	0.0%
Vale Manganês S.A.	Brazil	Manganese and ferroalloys	100.0%	100.0%	0.0%
Vale Moçambique S.A.	Mozambique	Coal	81.0%	81.0%	19.0%
Vale Nouvelle Caledonie S.A.S.	New Caledonia	Nickel	95.0%	95.0%	5.0%
Vale Oman Distribution Center LLC	Oman	Iron ore and pelletizing	100.0%	100.0%	0.0%
Vale Oman Pelletizing Company LLC	Oman	Pelletizing	70.0%	70.0%	30.0%

Investments held by investors in Vale s subsidiaries are classified as noncontrolling interests. The Company treats transactions with noncontrolling interests as transactions with equity owners of the Company as described in note 16.

For purchases from noncontrolling interests, the difference between any consideration paid and the proportion acquired of the carrying value of net assets of the subsidiary is recorded in stockholders equity. Gains or losses on disposals to noncontrolling interest are also directly recorded in stockholders equity in Results from operation with noncontrolling interest .

As explained in note 14, the Fertilizer Segment is presented as discontinued operations, which includes the following subsidiaries:

	Location	Main activity/Business	% Ownership	% Voting capital	% Noncontrolling interest
Direct and indirect subsidiaries					
Compañia Minera Miski Mayo S.A.C.	Peru	Fertilizers	40.0%	51.0%	60.0%

Vale Fertilizantes S.A.	Brazil	Fertilizers	100.0%	100.0%	0.0%
Vale Cubatão Fertilizantes Ltda	Brazil	Fertilizers	100.0%	100.0%	0.0%

d) Functional currency and presentation currency

The financial statements of the Company and its associates and joint ventures are measured using the currency of the primary economic environment in which the entity operates (functional currency), which in the case of the Parent Company is the Brazilian real (R$). For presentation purposes, these financial statements are presented in Brazilian Reais.

Transactions in foreign currencies are translated into the functional currency using the exchange rate prevailing at the transaction date. The foreign exchange gains and losses resulting from the translation at the exchange rates prevailing at the end of the year are recognized in the income statement as financial income or expense . The exceptions are transactions for which gains and losses are recognized in the statement of comprehensive income.

The income statement and statement of financial position of the subsidiaries for which the functional currency is different from the presentation currency are translated into the presentation currency as follows: (i) assets, liabilities and stockholders equity, except for the components described in item (iii) are translated at the closing rate at the statement of financial position date; (ii) income and expenses are translated at the average exchange rates, except for specific significant transactions that, are translated at the rate at the transaction date and; (iii) capital, capital reserves and treasury stock are translated at the rate at each transaction date. All resulting exchange differences are recognized directly in the comprehensive income as translation adjustments . When a foreign operation is partially disposed of or sold, foreign exchanges differences that were recognized in equity are recognized in the income of statement.

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The exchange rates used by the Company to translate its foreign operations are as follows:

	Closing rate			Average rate for the year ended		
	2017	2016	2015	2017	2016	2015
US Dollar (US$)	3.3080	3.2591	3.9048	3.1925	3.4833	3.3387
Canadian dollar (CAD)	2.6344	2.4258	2.8171	2.4618	2.6280	2.6020
Australian dollar (AUD)	2.5849	2.3560	2.8532	2.4474	2.5876	2.4979
Euro (EUR or)	3.9693	3.4384	4.2504	3.6088	3.8543	3.6999

e) Significant accounting policies

Significant and relevant accounting policies for the understanding of the recognition and measurement basis used on the preparation of these financial statements were included in the respective notes. The accounting policies applied in the preparation of these financial statements are consistent with those adopted and disclosed in the financial statements of prior years.

The Company has not early adopted any standards and interpretations that have been issued or amended but are not yet effective for the year ended December 31, 2017.

The following new accounting standards were issued by IASB, but are not yet effective for 2017. The Company has performed an assessment on the Company s financial statements and the current expected impacts are detailed below:

- IFRS 9 Financial instrument - In July 2014, the IASB issued the final version of IFRS 9 that replaces IAS 39 Financial Instruments: Recognition and Measurement. This standard addresses the classification and measurement of financial assets and liabilities, new impairment model and new rules for hedge accounting. This standard shall apply for annual periods beginning on or after January 1, 2018. The Company has reviewed its financial assets and liabilities and is expecting the following impact from the adoption of the new standard on 1 January 2018:

- Classification and measurement - IFRS 9 establishes a new approach to determine whether a financial asset should be measured at amortized cost or fair value, based on the cash flow characteristics and the business model in which an asset is held. The Company does not currently expect the impact of these changes to be significant.

- Impairment - IFRS 9 requires expected credit loss impairment model for accounts receivables measured at amortized cost, on either a 12-month or the lifetime basis, rather than only incurred credit losses as is the case under IAS 39. Given that Vale s account receivables are short-term in nature and considering its credit rating and risk management policies in place, the Company does not expect these changes will have a significant impact on its financial statements.

- Hedge accounting - the changes in IFRS 9 relating to hedge accounting will have no impact as the Company does not currently apply cash flow or fair value hedge accounting. The Company currently applies the net investment hedge, which there is no changes introduced by this new standard.

- **IFRS 15 Revenue from Contracts with Customers** - In May 2014, the IASB issued IFRS 15, which replaces IAS 18 Revenues and the related interpretations. IFRS 15 introduces the five-step model for revenue recognition from contracts with customers. The new standard is based on the core principle that revenue is recognized when the control of a good or service transfers to a customer of an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This standard shall apply for annual periods beginning on or after January 1, 2018.

The Company will adopt this new standard on the required effective date using the modified retrospective method. Accordingly, the Company will not be required to restate the comparative figures.

During 2017, the Company performed a detailed assessment of IFRS 15, based on the contractual arrangements across the Company s main revenue streams. The result of this assessment and the impacts identified in relation to the IFRS 15 first adoption are summarized as follows:

Vale s revenue is predominantly derived from commodities sales, where the point of recognition is dependent on the sales arrangement, which is governed by parameters established by the International Commercial Terms (Incoterms). There will be no significant impact on the timing of commodities revenue recognition under IFRS 15, since usually the transfer of risks and rewards and the transfer of control under the sales contracts are at the same point in time.

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However, a significant proportion of Vale s sales are under CFR (Cost and Freight) or CIF (Cost, Insurance and Freight) Incoterms, in which the Company is responsible for providing shipping services after the date that Vale transfers control of the goods to the customers. Currently, the revenue from shipping services are recognized upon loading, as well as the related costs, and are not considered a separate service under IAS 18.

Under IFRS 15, the provision of shipping services for CFR and CIF contracts will be a distinct service and, therefore, a separate performance obligation to which a proportion of the transaction price should be allocated and recognized over time as the shipping services are provided. The impact on the timing of revenue recognition of the proportion allocated to the shipping service is deemed not significant to the Company s year-end results. Therefore, such revenue will not be presented separately in the Company s financial statements.

The accounting treatment for contracts with provisional pricing features that are currently considered as an embedded derivative in accordance with IAS 39 - Financial Instruments, shall remain unmodified in accordance with IFRS 15 and IFRS 9 - Financial Instruments. In addition, IFRS 15 introduces a new disclosure requirement for the provisional prices impact on the financial statements. When applicable, systems and processes will be amended to allow the disclosure of this information in the Company s financial statements.

IFRS 15 also requires the Company to treat deferred revenue related to the gold stream transaction as variable and, therefore must be adjusted each time there is a change in the underlying production profile. The Company does not expect to record a significant adjustment upon transition to this new standard.

- **IFRS 16 Lease** - In January 2016, the IASB issued IFRS 16, which replaces IAS 17 Leases and related interpretations. The IFRS 16 set forth that the lessee must recognize all leases on the statement of financial position, as the distinction between operating and finance leases is removed. The standard provides certain exemptions from recognizing leases on the statement of financial position, including where the underlying asset is of low value or the lease term is 12 months or less. Under the new standard, the Company will be required to recognize right of use lease assets and lease liabilities on the statement of financial position. Liabilities are measured based on the present value of future lease payments over the lease term. The right of use lease asset generally reflects the lease liability. This standard shall apply for annual periods beginning on or after January 1, 2019.

The Company has commenced the qualitative analysis of its main contracts and will continue to assess the quantitative potential effect of IFRS 16 during 2018, which depends on the decision regarding the transition method and the use of practical expedients and/or exemptions. It is therefore not yet possible to estimate the amount of right-of-use assets and lease liabilities that will have to be recognised on adoption of the new standard and how this may affect the Company s income statement.

The information on the main operating leases is presented in note 31.

f) Critical accounting estimates and judgments

The preparation of financial statements requires the use of certain critical accounting estimates and the application of judgment by management in applying the Company s accounting policies. These estimates are based on the experience, best knowledge, information available at the statement of financial position date and other factors, including expectations of future events that are believed to be reasonable under the circumstances. Changes in facts and circumstances may lead to the revision of these estimates. Actual future results may differ from the estimates.

The significant estimates and judgments applied by Company in the preparation of these financial statements are as follows:

Note	Significant estimates and judgments
7	Deferred revenue - Gold stream transaction
8	Deferred income taxes
15	Consolidation
18	Mineral reserves and mine useful life
19	Impairment of non-current assets
21	Liabilities related to associates and joint ventures
23	Fair values estimate
26	Asset retirement obligation
27	Litigation
28	Employee postretirement obligations

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3. Information by business segment and by geographic area

The Company operated five reportable segments during this year: Ferrous Minerals, Coal, Base Metals, Fertilizers (presented as discontinued operations) and Others. The segments are aligned with products and reflect the structure used by Management to evaluate Company performance. The responsible bodies for making operational decisions, allocating resources and evaluating performance are the Executive Boards and the Board of Directors. The performance of the operating segments is assessed based on a measure of adjusted LAJIDA (EBITDA).

The information presented to the Executive Board on the performance of each segment is derived from the accounting records, adjusted for reallocations between segments.

The main activities of the operating segments are as follows:

Ferrous minerals - Ferrous minerals comprises the production and extraction of iron ore, iron ore pellets and its logistic services (railroads, ports and terminals), manganese, ferroalloys and others ferrous products and services.

Coal - Coal comprises the extraction of metallurgical and thermal coal and its logistic services (railroads, ports and terminals).

Base metals - Base metals include the production and extraction of non-ferrous minerals, and are presented as nickel and its by-products (ferro-nickel, copper, gold, precious metals and others) and copper (copper concentrated).

Fertilizers (Discontinued operations) - Fertilizers include the production of the three major groups of nutrients (potash, phosphate and nitrogen) and other fertilizers products. The group of assets related to this segment is classified as Non-current assets and liabilities associated with non-current assets held for sale (note 14).

Others - Other comprises sales and expenses of other products, services, research and evaluation, investments in joint ventures and associates of other business and contingencies not directly related to the core business.

a) Adjusted LAJIDA (EBITDA)

The definition of adjusted LAJIDA (EBITDA) for the Company is the operating income or loss excluding (i) the depreciation, depletion and amortization, (ii) results on measurement or sales of non-current assets, (iii) impairment, (iv) onerous contracts and plus (v) dividends received and interest from associates and joint ventures.

	Consolidated Year ended December 31, 2017						
	Net operating revenue	**Cost of goods sold and services rendered**	**Sales, administrative and other operating expenses**	**Research and evaluation**	**Pre operating and operational stoppage**	**Dividends received and interest from associates and joint ventures**	**Adjusted LAJIDA (EBITDA)**
Ferrous minerals							
Iron ore	59,206	(25,438)	(911)	(281)	(576)	100	32,100
Iron ore Pellets	18,043	(9,191)	(208)	(62)	(23)	263	8,822
Ferroalloys and manganese	1,501	(890)	(38)		(12)		561
Other ferrous products and services	1,541	(978)	18	(6)	(2)	63	636
	80,291	**(36,497)**	**(1,139)**	**(349)**	**(613)**	**426**	**42,119**
Coal	**5,003**	**(4,326)**	**(142)**	**(45)**	**(14)**	**574**	**1,050**
Base metals							
Nickel and other products	14,914	(10,985)	(484)	(155)	(238)		3,052
Copper	7,052	(3,126)	(86)	(43)			3,797
	21,966	**(14,111)**	**(570)**	**(198)**	**(238)**		**6,849**
Others	**1,272**	**(1,197)**	**(892)**	**(494)**	**(28)**	**313**	**(1,026)**
Total of continuing operations	**108,532**	**(56,131)**	**(2,743)**	**(1,086)**	**(893)**	**1,313**	**48,992**
Discontinued operations (Fertilizers)	**5,572**	**(5,124)**	**(327)**	**(39)**	**(80)**	**10**	12
Total	**114,104**	**(61,255)**	**(3,070)**	**(1,125)**	**(973)**	**1,323**	**49,004**

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	Consolidated Year ended December 31, 2016						
	Net operating revenue	**Cost of goods sold and services rendered**	**Sales, administrative and other operating expenses**	**Research and evaluation**	**Pre operating and operational stoppage**	**Dividends received and interest from associates and joint ventures**	**Adjusted LAJIDA (EBITDA)**
Ferrous minerals							
Iron ore	54,187	(22,817)	(1,712)	(308)	(521)	35	28,864
Iron ore Pellets	13,198	(6,932)	(251)	(45)	(77)	359	6,252
Ferroalloys and manganese	1,031	(793)	(11)	(1)	(39)		187
Other ferrous products and services	1,513	(933)	(26)	(5)	(12)		537
	69,929	**(31,475)**	**(2,000)**	**(359)**	**(649)**	**394**	**35,840**
Coal	**2,882**	**(3,090)**	**150**	**(50)**	**(137)**		**(245)**
Base metals							
Nickel and other products	15,504	(11,145)	(331)	(268)	(399)	13	3,374
Copper	5,770	(3,198)	(82)	(17)			2,473
Other base metals products			480				480
	21,274	**(14,343)**	**67**	**(285)**	**(399)**	**13**	**6,327**
Others	**548**	**(889)**	**(529)**	**(404)**	**(4)**	**262**	(1,016)
Total of continuing operations	**94,633**	**(49,797)**	**(2,312)**	**(1,098)**	**(1,189)**	**669**	**40,906**
Discontinued operations (Fertilizers)	**6,470**	**(5,315)**	**(298)**	**(75)**	**(58)**	**12**	**736**
Total	**101,103**	**(55,112)**	**(2,610)**	**(1,173)**	**(1,247)**	**681**	**41,642**

	Consolidated Year ended December 31, 2015						
	Net operating revenue	**Cost of goods sold and services rendered**	**Sales, administrative and other operating expenses**	**Research and evaluation**	**Pre operating and operational stoppage**	**Dividends received and interest from associates and joint ventures**	**Adjusted LAJIDA (EBITDA)**
Ferrous minerals							
Iron ore	41,427	(25,505)	(1,140)	(395)	(417)	87	14,057
Iron ore Pellets	11,916	(7,008)	34	(13)	(81)	708	5,556
Ferroalloys and manganese	518	(583)	1	(1)	(61)		(126)
Other ferrous products and services	1,552	(1,115)	22	(9)	(6)	25	469
	55,413	**(34,211)**	**(1,083)**	**(418)**	**(565)**	**820**	**19,956**
Coal	**1,739**	**(2,857)**	**(435)**	**(73)**	**(208)**	**109**	**(1,725)**

Base metals							
Nickel and other products	15,534	(11,378)	(506)	(348)	(1,359)		1,943
Copper	4,957	(3,049)	(114)	(31)	(2)		1,761
Other base metals products			722				722
	20,491	**(14,427)**	**102**	**(379)**	**(1,361)**		**4,426**
Others	**414**	**(464)**	**(543)**	**(456)**	**(2)**	**135**	**(916)**
Total of continuing operations	**78,057**	**(51,959)**	**(1,959)**	**(1,326)**	**(2,136)**	**1,064**	**21,741**
Discontinued operations (Fertilizers)	**7,442**	**(4,896)**	**(124)**	**(277)**	**(232)**		**1,913**
Total	**85,499**	**(56,855)**	**(2,083)**	**(1,603)**	**(2,368)**	**1,064**	**23,654**

Adjusted LAJIDA (EBITDA) is reconciled to net income (loss) as follows:

From Continuing operations

	Consolidated Year ended December 31		
	2017	**2016**	**2015**
Net income (loss) from continuing operations	**20,278**	**17,455**	**(45,337)**
Depreciation, depletion and amortization	11,842	12,107	12,450
Income taxes	4,607	9,567	(19,339)
Financial results, net	9,650	(6,302)	36,053
LAJIDA (EBITDA)	**46,377**	**32,827**	**(16,173)**
Items to reconciled LAJIDA (EBITDA) adjusted			
Impairment and other results on non-current assets	1,025	4,168	33,893
Equity results in associates and joint ventures	(302)	(1,111)	1,526
Impairment and other results in associates and joint ventures	579	4,353	1,431
Dividends received and interest from associates and joint ventures	1,313	669	1,064
Adjusted LAJIDA (EBITDA) from continuing operations	**48,992**	**40,906**	**21,741**

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From Discontinued operations

	Consolidated Year ended December 31		
	2017	2016	2015
Loss from discontinued operations	**(2,608)**	**(4,159)**	**(660)**
Depreciation, depletion and amortization	4	1,197	1,039
Income taxes	(324)	(2,134)	460
Financial results, net	89	(69)	485
LAJIDA (EBITDA)	**(2,839)**	**(5,165)**	**1,324**
Items to reconciled LAJIDA (EBITDA) adjusted			
Impairment of non-current assets	2,833	5,899	608
Equity results in associates and joint ventures	8	(10)	(19)
Dividends received and interest from associates and joint ventures	10	12	
Adjusted LAJIDA (EBITDA) from discontinued operations	**12**	**736**	**1,913**

b) Assets by segment

	Consolidated Year ended December 31, 2017				
	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangible (i)	Additions to property, plant and equipment and intangible (ii)	Depreciation, depletion and amortization (iii)
Ferrous minerals	5,859	6,358	119,429	8,553	5,643
Coal	271	1,048	5,686	376	947
Base metals	3,336	43	78,080	3,231	5,157
Others	20	4,353	6,434	76	95
Total	**9,486**	**11,802**	**209,629**	**12,236**	**11,842**

	Consolidated Year ended December 31, 2016				
	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangible (i)	Additions to property, plant and equipment and intangible (ii)	Depreciation, depletion and amortization (iii)
Ferrous minerals	3,697	5,894	113,526	11,384	5,593
Coal	412	929	6,216	2,136	652
Base metals	3,617	40	76,173	3,673	5,791
Others	7	5,183	7,096	150	71
Total	**7,733**	**12,046**	**203,011**	**17,343**	**12,107**

(i) Goodwill is allocated mainly in ferrous minerals and base metals segments in the amount of R$7,133 and R$6,460 in December 31, 2017 and R$4,060 and R$5,981 in December 31, 2016, respectively.

(ii) Includes only cash effect.

(iii) Refers to amounts recognized in the income statement.

c) Investment in associates and joint ventures, intangible and property, plant and equipment by geographic area

	Consolidated							
	December 31, 2017				December 31, 2016			
	Investments in associates and joint ventures	Intangible	Property, plant and equipment	Total	Investments in associates and joint ventures	Intangible	Property, plant and equipment	Total
Brazil	9,900	20,615	111,750	142,265	10,338	15,387	112,468	138,193
Canada		7,005	36,277	43,282		6,524	33,460	39,984
Americas, except Brazil and Canada	663		1,412	2,075	604		98	702
Europe			1,303	1,303			2,084	2,084
Indonesia			9,220	9,220			9,687	9,687
Asia, except Indonesia	1,229		3,638	4,867	1,104		3,912	5,016
Australia			149	149			139	139
New Caledonia			9,809	9,809			10,062	10,062
Mozambique		472	5,067	5,539		484	5,589	6,073
Oman		2	2,873	2,875			3,117	3,117
Other regions	10		37	47				
Total	**11,802**	**28,094**	**181,535**	**221,431**	**12,046**	**22,395**	**180,616**	**215,057**

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d) Net operating revenue by geographic area

	Consolidated Year ended December 31, 2017				
	Ferrous minerals	Coal	Base metals	Others	Total
Americas, except United States and Brazil	1,896		3,218	221	5,335
United States of America	1,137		2,784	262	4,183
Germany	3,481		933		4,414
Europe, except Germany	5,499	1,275	6,347	35	13,156
Middle East/Africa/Oceania	5,640	543	41		6,224
Japan	6,150	409	1,277		7,836
China	43,005		1,842		44,847
Asia, except Japan and China	4,251	2,268	4,927		11,446
Brazil	9,232	508	597	754	11,091
Net operating revenue	**80,291**	5,003	21,966	**1,272**	**108,532**

	Consolidated Year ended December 31, 2016				
	Ferrous minerals	Coal	Base metals	Others	Total
Americas, except United States and Brazil	1,167	72	4,079		5,318
United States of America	792		2,602	81	3,475
Germany	3,719		1,053		4,772
Europe, except Germany	5,107	723	5,381	59	11,270
Middle East/Africa/Oceania	4,266	329	72	1	4,668
Japan	4,464	432	1,123		6,019
China	41,135	223	2,420		43,778
Asia, except Japan and China	3,125	1,052	4,053		8,230
Brazil	6,154	51	491	407	7,103
Net operating revenue	**69,929**	**2,882**	**21,274**	**548**	**94,633**

	Consolidated Year ended December 31, 2015				
	Ferrous minerals	Coal	Base metals	Others	Total
Americas, except United States and Brazil	1,185	64	3,697		4,946
United States of America	95		2,640	69	2,804
Germany	3,420		1,327		4,747
Europe, except Germany	4,873	347	5,137		10,357
Middle East/Africa/Oceania	3,323	314	273		3,910
Japan	5,038	237	1,223		6,498
China	28,477	149	2,186		30,812
Asia, except Japan and China	3,545	553	3,325		7,423
Brazil	5,457	75	683	345	6,560
Net operating revenue	**55,413**	**1,739**	**20,491**	**414**	**78,057**

Accounting policy

Revenue is recognized when Vale transfers to its customers all of the significant risks and rewards of ownership of the product sold or when the services are rendered. Net revenue excludes any applicable sales taxes and is recognized at the fair value of the consideration received or receivable to the extent that it is probable that economic benefits will flow to Vale and the revenues can be reliably measured.

Depending on the contract, revenue sales can be recognized when the product is available at the loading port, loaded on the ship, at the port of discharge or at the custumer s warehouse. Service revenues are recognized in the amount by which the services are rendered and accepted by the customer.

In some cases, the sale price is determined on a provisional basis at the date of sale and adjustments to the sales price subsequently occur based on movements in the quoted market or contractual prices up to the date of final pricing. Revenue is recognized based on the estimated fair value of the total consideration receivable, and the provisionally priced sales mechanism embedded within these sale arrangements has the character of a derivative. Accordingly, the fair value of the final sales price adjustment is re-estimated continuously and changes in fair value are recognized as operational revenue in the income statement.

Amounts billed to customers for shipping related to products sold by the Company are recognized as revenue when the Company is responsible for shipping. Shipping costs are recognized as operating costs.

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Commodity price risk - The commodity price risk arises from volatility of iron ore, nickel, copper and coal prices. The Company is mostly exposed to the fluctuations in the iron ore and copper price. The selling price these products can be measured reliably at each period, since the price is quoted on an active market.

As of December 31, 2017, the Company had 33 million tons (2016: 36 million tons) provisionally priced based on iron ore forward prices and 106 thousand tons (2016:116 thousand tons) provisionally priced based on copper forward prices. The final price of these sales will be determined during the first quarter of 2018. A 10% change in the price of iron ore realized on the provisionally priced sales, all other factors held constant, would increase or reduce net income by R$751. A 10% change in the price of copper realized on the provisionally priced sales, all other factors held constant, would increase or reduce net income by R$284.

4. Special events occurred during the year

The special events occurred in the consolidated financial statements during the year are those that, in the Company s judgment, have significant effect on: (i) its operations; and/or (ii) corporate governance structure; and/or (iii) the income statement due to their size and nature. To determine whether an event or transaction should be disclosed as special events , the Company considers quantitative and qualitative factors, such as frequency and magnitude.

The special events identified by the Company are as follows:

a) Vale s corporate governance restructuring

At the General Extraordinary Shareholders Meeting, held on June 27, 2017, shareholders approved the corporate restructuring of the Company proposed by Valepar S.A. (former controlling shareholder). The corporate restructuring was based on (i) conversion of Vale class A preferred shares into common shares; (ii) amendment of Vale s by-laws, so as to adjust to *Novo Mercado* rules; and (iii) the merger of Valepar S.A. into Vale.

The transaction was concluded on November 21, 2017 and the restructuring was approved at the General Extraordinary Shareholder s Meeting on December 21, 2017. Further details are disclosed in note 29.

b) Events with significant effect on the income statement

	Year ended December 31 Consolidated		
	2017	2016	2015
Nacala Logistic Corridor	1,438		
Samarco Provision	(580)	(3,967)	
Impairment of non-current assets - Fertilizers business	(2,833)	(5,899)	(608)
Impairment of non-current assets and onerous contracts	(883)	(3,940)	(33,945)
Gold stream transaction		480	722
Deferred income tax in foreign jurisdiction			11,729
Total	**(2,858)**	**(13,326)**	**(22,102)**

Nacala Logistic Corridor - In March 2017, the Company concluded the transaction with Mitsui to sell 15% of its stake in Vale Moçambique and 50% of its stake in the Nacala Logistics Corridor and recognized a gain in the income statement of R$1,438 (US$458 million). Further details are disclosed in note 15.

Samarco - In 2017, the Company recognized in the income statement the amount of R$128 (2016: R$3,733) in respect of additions to the provision to comply with the reparation and compensation programs related to the dam failure of Samarco Mineração S.A. The Company also expensed an amount of R$452 (2016: R$234) applied by Samarco to funds its working capital requirements. Further details are disclosed in note 21.

Fertilizers - In December 2016, the Company approved the sale of fertilizers assets and the acquisition of a noncontrolling interest in The Mosaic Company (Mosaic). The Company assessed the fair value less cost of sell of the fertilizer business segment and an impairment loss of R$5,899 was recognized in the income statement from discontinued operations in the year ended December 31, 2016. In January 2018 (subsequent event), the Company and Mosaic concluded the transaction, which was preceded by final adjustments agreed by the parties under the original terms and conditions of the negotiation. As consequence of these adjustments, an impairment loss of R$2,325 was recognized in the income statement from discontinued operations in December 2017. Additionally, in November 2017, the Company entered into an agreement with Yara International ASA to sell its nitrogen assets located in Cubatão, Brazil and an impairment loss of R$508 was recognized in the income statement from discontinued operations in the year ended December 31, 2017. Further details are disclosed in note 14.

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Impairment of non-current assets and onerous contracts - In 2017, the Company placed an underground mine in Sudbury in care and maintenance and an impairment of R$428 was recognized in the income statement. In 2016, the Company recognized an impairment loss of R$3,940 mainly by the reduction in the nickel price projections. In 2015, the Company recognized an impairment loss of R$33,945 mainly by: (i) the reduction in estimated future coal prices combined with the increase of logistics costs and (ii) the reduction the recoverable values of the VNL and VNC CGUs. Further details are disclosed in note 19.

Gold stream transaction - In March 2015 and August 2016, a gold transaction with Wheaton Precious Metals Corp. (WPW) entered into 2013, was amended to include in each contract an additional 25% of the gold extracted as by-product of the Salobo copper mine. Furthermore, the Company recognized a gain of the result on sale of mineral rights in the amount of R$480 and R$722 in the year ended December 31, 2016 and 2015, respectively, see note 7.

Deferred income tax - In 2015, in the first adoption of the Law 12.973, the Company recognized assets deferred income tax related to accumulated losses of subsidiaries abroad in the amount of R$11,729, see note 8.

5. Costs and expenses by nature

a) Cost of goods sold and services rendered

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Personnel	7,332	7,222	7,030	3,986	3,445
Materials and services	12,183	10,808	9,827	5,504	5,438
Fuel oil and gas	4,197	4,280	4,037	2,869	2,714
Maintenance	9,899	9,487	8,520	6,926	6,068
Energy	3,078	2,406	1,602	1,463	1,028
Acquisition of products	1,728	1,762	2,531	652	821
Depreciation and depletion	11,126	11,346	10,821	5,078	4,808
Freight	10,717	8,641	11,877	106	71
Others	6,997	5,191	6,535	6,743	5,270
Total	**67,257**	**61,143**	**62,780**	**33,327**	**29,663**
Cost of goods sold	65,300	59,409	61,072	31,991	28,601
Cost of services rendered	1,957	1,734	1,708	1,336	1,062

Total	**67,257**	**61,143**	**62,780**	**33,327**	**29,663**

b) Selling and administrative expenses

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Personnel	747	727	822	514	473
Services	259	248	354	152	148
Depreciation and amortization	292	414	437	185	300
Travel expenses	28	29	36	19	17
Taxes and rents	37	46	52	8	18
Others	334	291	308	81	65
Total	**1,697**	**1,755**	**2,009**	**959**	**1,021**

c) Others operational expenses (incomes), net

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Provision for litigation	540	487	46	423	524
Profit sharing program	476	252	52	307	137
Disposals (reversals) of materials and inventories	52	(86)	224	43	(56)
Others	270	284	266	120	561
Total	**1,338**	**937**	**588**	**893**	**1,166**

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6. Financial result

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Financial expenses					
Loans and borrowings gross interest	(5,418)	(6,152)	(5,503)	(5,606)	(6,330)
Capitalized loans and borrowing costs	1,179	2,291	2,531	1,176	1,679
Derivative financial instruments	(1,780)	(1,655)	(11,969)	(1,257)	(957)
Indexation and exchange rate variation (a)	(8,432)	(10,405)	(46,346)	(7,465)	(9,612)
Participative stockholders debentures	(1,982)	(1,456)	3,039	(1,982)	(1,456)
Expenses of REFIS	(1,262)	(1,787)	(1,795)	(1,236)	(1,751)
Others	(3,029)	(2,191)	(1,978)	(1,855)	(1,473)
	(20,724)	**(21,355)**	**(62,021)**	**(18,225)**	**(19,900)**
Financial income					
Short-term investments	560	336	492	208	209
Derivative financial instruments	3,240	5,827	3,885	2,542	4,290
Indexation and exchange rate variation (b)	6,302	21,224	21,237	5,958	21,021
Others	972	270	354	156	136
	11,074	**27,657**	**25,968**	**8,864**	**25,656**
Financial results, net	**(9,650)**	**6,302**	**(36,053)**	**(9,361)**	**5,756**
Summary of indexation and exchange rate variation					
Loans and borrowings	(731)	17,885	(34,625)	(662)	17,715
Others	(1,399)	(7,066)	9,516	**(845)**	(6,306)
Net (a) + (b)	**(2,130)**	**10,819**	**(25,109)**	**(1,507)**	**11,409**

As from January 1, 2017, the Company applies net investment hedge accounting in foreign operation. Further details are disclosed in note 24.

7. Deferred revenue - Gold stream transaction

In 2013, the Company entered into a gold transaction with Wheaton Precious Metals Corp. (WPM), and amended in March 2015 and August 2016, to sell 75% of the gold extracted as a by-product of the Salobo copper mine and 70% of the gold extracted as a by-product of Sudbury nickel mines.

The transactions were bifurcated into two identifiable components (i) the sale of the mineral rights and, (ii) the services for gold extraction on the portion in which Vale operates as an agent for WPM gold extraction.

The result on sale of mineral rights from the additional transactions of R$480 and R$722 was recognized in the years ended December 31, 2016 and 2015, respectively, under Other operating expenses, net .

Critical accounting estimates and judgments

Defining the gain on sale of mineral interest and the deferred revenue portion of the transaction requires the use of critical accounting estimates as follows:

• Discount rates used to measure the present value of future inflows and outflows;

• Allocation of costs between nickel or copper and gold based on relative prices;

• Expected margin for the independent elements (sale of mineral rights and service for gold extraction) based on Company s best estimate.

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8. Income taxes

a) Deferred income tax assets and liabilities

	Consolidated		Parent company	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Taxes losses carryforward	**14,791**	**20,188**	**6,994**	**10,310**
Temporary differences:				
Employee post retirement obligations	2,263	2,022	586	483
Provision for litigation	1,510	702	1,435	661
Timing differences arising on assets	4,195	4,119	3,319	3,264
Fair value of financial instruments	1,816	546	1,816	1,921
Allocated goodwill	(8,048)	(7,325)		
Others	(255)	(1,861)	50	(1,340)
	1,481	**(1,797)**	**7,206**	**4,989**
Total	**16,272**	**18,391**	**14,200**	**15,299**
Assets	21,959	23,931	14,200	15,299
Liabilities	(5,687)	(5,540)		
	16,272	**18,391**	**14,200**	**15,299**

Changes in deferred tax are as follows:

	Consolidated			Parent company
	Assets	Liabilities	Total	Total
Balance at December 31, 2015	**30,867**	**6,520**	**24,347**	**17,292**
Taxes losses carryforward	(4,800)		(4,800)	(1,983)
Timing differences arising on assets	1,025		1,025	925
Fair value of financial instruments	(2,722)		(2,722)	(1,294)
Allocated goodwill		(1,206)	1,206	
Others	(969)		(969)	(556)
Effect in income statement	**(7,466)**	**(1,206)**	**(6,260)**	**(2,908)**
Transfers between asset and liabilities	1,087	1,087		
Translation adjustment	(1,876)	(899)	(977)	
Other comprehensive income	(121)	38	(159)	55
Effect of discontinued operations				
Income tax	2,127		2,127	860
Transfer to net assets held for sale	(687)		(687)	
Balance at December 31, 2016	**23,931**	**5,540**	**18,391**	**15,299**
Taxes losses carryforward	(6,615)		(6,615)	(3,316)
Timing differences arising on assets	335		335	421
Fair value of financial instruments	1,222		1,222	(105)

Allocated goodwill		(369)	369	
Others	2,746		2,746	2,043
Effect in income statement	**(2,312)**	**(369)**	**(1,943)**	**(957)**
Transfers between asset and liabilities	131	131		
Translation adjustment	118	350	(232)	
Other comprehensive income	(233)	35	(268)	224
Effect of discontinued operations				
Income tax	324		324	(366)
Balance at December 31, 2017	**21,959**	**5,687**	**16,272**	**14,200**

Law 12.973 - The Brazilian corporate tax law was amended at the end of 2014 and became effective as from fiscal year 2015. The change provided that profits from foreign subsidiaries are taxable in Brazil, on an accrual basis, applying the differential between the nominal local tax rate and the Brazilian tax rates (34%) considering the profit before tax in local GAAP (Generally Accepted Accounting Principles) and local currency. Accordingly, from January 1st, 2015 the results from foreign subsidiaries are recognized on that basis.

In accordance with article 77 of law 12.973, the losses generated by the foreign subsidiaries, before income taxes and the equity results, may be offset against their future profits, subject to certain conditions.

In 2015, in the first adoption, the Company recognized deferred income tax assets related to accumulated losses of subsidiaries abroad in the amount of R$11,729. Based on Company s projections, the deferred tax assets are expected to be utilized up to 5 years.

The tax loss carryforward does not expire in the Brazilian jurisdiction and the compensation is limited to 30% of the taxable income for the year. For local results taxable in Brazil, there is no restriction to compensated profits from foreign subsidiaries against previously recorded deferred tax assets.

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b) Income tax reconciliation - Income statement

The total amount presented as income taxes in the income statement is reconciled to the rate established by law, as follows:

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Income (loss) before income taxes	**24,885**	**27,022**	**(64,676)**	**22,328**	**22,555**
Income taxes at statutory rates - 34%	**(8,461)**	**(9,187)**	**21,990**	**(7,592)**	**(7,669)**
Adjustments that affect the basis of taxes:					
Income tax benefit from interest on stockholders equity	2,329	291	1,054	2,329	291
Tax incentives	1,175	1,130	204	750	953
Equity results	99	378	(518)	1,903	2,589
Unrecognized tax losses of the year	(1,389)	(2,465)	(3,021)		
Nondeductible effect of impairment	(138)	(325)	(7,222)		
Others	1,778	611	6,852	495	(1,258)
Income taxes	**(4,607)**	**(9,567)**	**19,339**	**(2,115)**	**(5,094)**

c) Tax incentives

In Brazil, Vale has tax incentives to partially reduce the income tax generated by the operations conducted in the North and Northeast regions that includes iron ore, manganese, copper and nickel. The incentive is calculated based on the taxable income of the incentive activity (tax operating income) and takes into account the allocation of tax operating income into different incentives applicable to different tranches of production during the periods specified for each product, generally 10 years. Most of our incentives are expected to expire up to 2024. An amount equal to that obtained with the tax saving must be appropriated in retained earnings reserve account in stockholders equity, and cannot be distributed as dividends to stockholders.

In addition to those incentives, 30% of the income tax due based on the tax operating income can be reinvested on the purchase of machinery and equipment, subject to subsequent approval by the regulatory agency responsible, Superintendência do Desenvolvimento da Amazonia (SUDAM) and the Superintendência do Desenvolvimento do Nordeste (SUDENE). The reinvestment is accounted in retained earnings reserve account, which restricts the distribution as dividends to stockholders.

Vale is subject to the revision of income tax by local tax authorities in a range up to 10 years depending on jurisdiction where the Company operates.

d) Income taxes - Settlement program (REFIS)

The balance mainly relates to REFIS to settle most of the claims related to the collection of income tax and social contribution on equity gains of foreign subsidiaries and affiliates from 2003 to 2012. As at December 31, 2017, the balance of R$17,780 (R$1,604 as current and R$16,176 as non-current) is due in 130 remaining monthly installments, bearing interest at the SELIC rate (Special System for Settlement and Custody), while at December 31, 2016, the balance was R$17,662 (R$1,492 as current and R$16,170 as non-current).

As at December 31, 2017, the SELIC rate was 7,0% per annum (13.75% per annum at December 31, 2016).

Accounting policy

The recognition of income taxes as deferred taxes is based on temporary differences between carrying amount and the tax basis of assets and liabilities as well as taxes losses carryforwards. The deferred income taxes assets and liabilities are offset when there is a legally enforceable right on the same taxable entity.

The deferred taxes assets arising from taxes losses and temporary differences are not recognized when is not probable that future taxable profit will be available against which temporary differences and/or tax losses can be utilized.

Income taxes are recognized in the income statement, except for items recognized directly in stockholders equity. The provision for income tax is calculated individually for each entity of the Company based on Brazilian tax rates, on an accrual basis, by applying the differential between the nominal local tax rates (based on rules enacted in the location of the entity) and the Brazilian tax rate.

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Critical accounting estimates and judgments

Deferred tax assets arising from tax losses, negative social contribution basis and temporary differences are registered taking into account the analysis of future performance, considering economic and financial projections, prepared based on internal assumptions and macroeconomic environment, trade and tax scenarios that may be subject to changes in the future. The assumptions of future profits are based on production and sales planning, commodity prices, operational costs, restructuring plans, reclamation and planned capital costs.

9. Basic and diluted earnings (loss) per share

As disclosed in note 29, the Company converted its class A preferred shares into common shares, without changing the amount of share capital. Therefore, the weighted average number of shares was restated as if the conversion had occurred at the beginning of the last comparative year presented.

The basic and diluted earnings (loss) per share are presented below:

	Year ended December 31		
	2017	**2016**	**2015**
Net income (loss) attributable to Vale s stockholders:			
Net income (loss) from continuing operations	20,213	17,461	(43,522)
Loss from discontinued operations	(2,586)	(4,150)	(691)
Net income (loss)	**17,627**	**13,311**	**(44,213)**
Thousands of shares (restated)			
Weighted average number of shares outstanding - common shares	5,197,432	5,197,432	5,197,432
Basic and diluted earnings (loss) per share from continuing operations (restated):			
Common share (R$)	3.89	3.36	(8.37)
Basic and diluted loss per share from discontinued operations (restated):			
Common share (R$)	(0.50)	(0.80)	(0.14)
Basic and diluted earnings (loss) per share (restated):			
Common share (R$)	3.39	2.56	(8.51)

The Company does not have potential outstanding shares with dilutive effect on the earnings (loss) per share.

10. Accounts receivable

	Consolidated		Parent company	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Accounts receivable	8,802	12,131	9,627	26,305
Impairment of accounts receivable	(200)	(194)	(67)	(82)
	8,602	**11,937**	**9,560**	**26,223**
Accounts receivable related to the steel sector - %	**82.90%**	**83.44%**	**79.48%**	**90.55%**

	Year ended December 31				
	Consolidated			Parent company	
	2017	2016	2015	2017	2016
Impairment of accounts receivable recorded in the income statement	(14)	(16)	44	4	3

There is no customer that individually represents over 10% of accounts receivable or revenues.

Accounting policy

Accounts receivable are financial instruments classified in the category loan and receivables and are the total amount due from sale of products and services rendered by the Company. Accounts receivable are initially recognized at fair value and subsequently measured at amortized cost, less provision for impairment of accounts receivable, when applicable.

Commercial credit risk management - For the commercial credit exposure, which arises from sales to final customers, the risk management area, in accordance with the current delegation level, approves or request the approval of credit risk limits for each counterparty.

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Vale attributes an internal credit risk rating for each counterparty using its own quantitative methodology for credit risk analysis, which is based on market prices, external credit ratings and financial information of the counterparty, as well as qualitative information regarding the counterparty s strategic position and history of commercial relations.

Based on the counterparty s credit risk, risk mitigation strategies may be used to manage the Company s credit risk. The main credit risk mitigation strategies include non-recourse sale of receivables, insurance instruments, letters of credit, corporate and bank guarantees, mortgages, among others.

Vale has a diversified accounts receivable portfolio from a geographical standpoint, with Asia, Europe and Brazil the regions with more significant exposures. According to each region, different guarantees can be used to enhance the credit quality of the receivables.

11. Inventories

	Consolidated		Parent company	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Product inventory	7,324	5,107	2,796	2,443
Work in progress	2,162	2,626	273	272
Consumable inventory	3,501	3,180	1,532	1,267
Total	**12,987**	**10,913**	**4,601**	**3,982**

In 2017, the Company recognized in the consolidated income statement a provision in respect of the net realizable value of product inventory, in the amount of R$284 (2016: R$649 and 2015: R$2,026). The provision recognized in the 2017 income statement of the Parent Company was R$170 (2016: R$208).

Product inventories by segments are presented in note 3(b).

Accounting policy

Inventories are stated at the lower of cost or the net realizable value. The inventory production cost is determined on the basis of variable and fixed costs, direct and indirect costs of production, using the average cost method. At each statement of financial position date, inventories are assessed for impairment and a provision for losses on obsolete or slow-moving inventory may be recognized. The write-downs and reversals are included in Cost of goods sold and services rendered .

12. Recoverable taxes

Recoverable taxes are presented net of provisions for losses on tax credits.

	Consolidated		Parent company	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Value-added tax	2,934	2,361	1,561	1,293
Brazilian federal contributions	2,909	5,212	2,517	4,825
Others	142	91	75	67
Total	**5,985**	**7,664**	**4,153**	**6,185**
Current	3,876	5,296	2,091	3,962
Non-current	2,109	2,368	2,062	2,223
Total	**5,985**	**7,664**	**4,153**	**6,185**

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13. Other financial assets and liabilities

	Consolidated			
	Current		Non-Current	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Other financial assets				
Financial investments	61	59		
Loans			498	587
Derivative financial instruments (note 24)	351	892	1,497	1,454
Related parties (note 30)	6,277		8,695	
	6,689	**951**	**10,690**	**2,041**
Other financial liabilities				
Derivative financial instruments (note 24)	344	1,349	2,269	3,991
Related parties (note 30)	893	1,150	3,226	287
Participative stockholders debentures			4,080	2,526
	1,237	**2,499**	**9,575**	**6,804**

	Parent company			
	Current		Non-Current	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Other financial assets				
Financial investments	4	4		
Loans			18	114
Derivative financial instruments (note 24)	199	338	1,268	1,304
Related parties (note 30)	206	323	579	760
	409	**665**	**1,865**	**2,178**
Other financial liabilities				
Derivative financial instruments (note 24)	311	1,033	2,113	3,427
Related parties (note 30)	4,102	8,923	48,762	50,849
Participative stockholders debentures			4,080	2,526
	4,413	**9,956**	**54,955**	**56,802**

Participative stockholders debentures

At the time of its privatization in 1997, Vale issued debentures to then-existing stockholders, including the Brazilian Government. The debentures terms were set to ensure that pre-privatization stockholders would participate in potential future benefits that might be obtained from exploiting mineral resources.

A total of 388,559,056 debentures were issued with a par value of R$0.01 (one cent of Brazilian Real) and are inflation-indexed to the General Market Price Index (IGP-M), as set forth in the Issue Deed. The Company paid as remuneration the amount of R$428 and R$268, respectively, for the year ended December 31, 2017 and 2016.

14. Non-current assets and liabilities held for sale and discontinued operations

	Consolidated				
	December 31, 2017	December 31, 2016			
	Fertilizers	Fertilizers	Nacala	Shipping assets	Total
Assets					
Accounts receivable	297	279	21		300
Inventories	1,522	1,261	**7**		1,268
Other current assets	363	348	370		718
Investments in associates and joint ventures	274	295			295
Property, plant and equipment and Intangible	7,110	8,779	13,246	1,164	23,189
Other non-current assets	2,299	2,216	8		2,224
Total assets	**11,865**	**13,178**	**13,652**	**1,164**	**27,994**
Liabilities					
Suppliers and contractors	1,070	913	134		1,047
Other current liabilities	711	626	44		670
Other non-current liabilities	2,118	1,821	16		1,837
Total liabilities	**3,899**	**3,360**	**194**		**3,554**
Net non-current assets held for sale	**7,966**	**9,818**	**13,458**	**1,164**	**24,440**

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a) Fertilizers (Discontinued operations)

In December 2016, the Company entered into an agreement with The Mosaic Company (Mosaic) to sell (i) the phosphate assets located in Brazil, except for the assets located in Cubatão, Brazil; (ii) the control of Compañia Minera Miski Mayo S.A.C., in Peru; (iii) the potassium assets located in Brazil; and (iv) the potash projects in Canada. Originally, the agreed amount was R$8,158 (US$2,500 million), of which R$4,074 (US$1,250 million) would be paid in cash and the remaining consideration would be settled with 42.3 million common shares to be issued by Mosaic.

In January 2018 (subsequent event), the Company and Mosaic concluded the transaction, which was preceded by final adjustments agreed by the parties under the original terms and conditions of the negotiation. As consequence of these adjustments, the consideration has changed and the Company received R$3,573 (US$1,080 million) in cash and 34.2 million common shares, corresponding to 8.9% of Mosaic s equity after the issuance of these shares (R$2,901 (US$877 million), based on the Mosaic s quotation at closing date of the transaction).

Fertilizer s net assets were adjusted to reflect fair value less cost to sell and a loss of R$2,325 (R$5,899 in 2016) was recognized in the income statement from discontinued operations.

b) Cubatão (part of the fertilizer segment)

In November 2017, the Company entered into an agreement with Yara International ASA (Yara) to sell its assets located in Cubatão, Brazil. The agreed consideration is R$844 (US$255 million) to be paid in cash. The Company expects to complete the transaction by the end of 2018, subject to compliance with usual precedent conditions, including approval by the Brazilian anti-trust authority (CADE) and other authorities.

These assets were adjusted to reflect fair value less cost to sell and a loss of R$508 was recognized in the income statement from discontinued operations.

The results for the years and the cash flows of discontinued operations of the Fertilizer segment are presented as follows:

	Consolidated Year ended December 31		
	2017	2016	2015
Discontinued operations			

Net operating revenue	5,572	6,470	7,442
Cost of goods sold and services rendered	(5,124)	(6,495)	(5,878)
Operating expenses	(450)	(448)	(690)
Impairment of non-current assets	(2,833)	(5,899)	(608)
Operating income (loss)	**(2,835)**	**(6,372)**	**266**
Financial Results, net	(89)	69	(485)
Equity results in associates and joint ventures	(8)	10	19
Loss before income taxes	**(2,932)**	**(6,293)**	**(200)**
Income taxes	324	2,134	(460)
Loss from discontinued operations	**(2,608)**	**(4,159)**	**(660)**
Net income (loss) attributable to noncontrolling interests	(22)	(9)	31
Loss attributable to Vale s stockholders	**(2,586)**	**(4,150)**	**(691)**

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	Consolidated Year ended December 31		
	2017	2016	2015
Discontinued operations			
Cash flow from operating activities			
Loss before income taxes	(2,932)	(6,293)	(200)
Adjustments:			
Equity results in associates and joint ventures	8	(10)	(19)
Depreciation, amortization and depletion	4	1,197	1,039
Impairment of non-current assets	2,833	5,899	608
Others		(69)	485
Increase (decrease) in assets and liabilities	356	(226)	15
Net cash provided by operating activities	**269**	**498**	**1,928**
Cash flow from investing activities			
Additions to property, plant and equipment	(978)	(995)	(853)
Others	(1)	29	(83)
Net cash used in investing activities	**(979)**	**(966)**	**(936)**
Cash flow from financing activities			
Loans and borrowings			
Repayments	(107)	(59)	(207)
Net cash used in financing activities	**(107)**	**(59)**	**(207)**
Net cash provided (used) in discontinued operations	**(817)**	**(527)**	**785**

Accounting policy

A non-current asset is classified as held for sale if its carrying amount will be recovered principally through a sale transaction rather than through continuing use.

The criteria for recognition the non-current assets as held for sale are only considered satisfied when the sale is highly probable and the asset (or disposal group of assets) is available for immediate sale in its present condition.

The Company measures the assets held for sale (or group of assets) at the lower of its carrying amount and fair value less costs to sell. If the carrying amount exceeds the fair value less costs to sell an impairment loss is recognized against income statement. Any subsequent reversal of impairment is recognized only to the extent of the loss previously recognized.

The assets and liabilities classified as held for sale are presented separately in the statement of financial position.

The classification as a discontinued operation occurs through disposal, or when the operation meets the criteria to be classified as held for sale if this occurs earlier. A discontinued operation is a component of a Company business comprising cash flows and operations that may be clearly distinct from the rest of the Company and that represents an important separate line of business or geographical area of operations.

The result of discontinued operations is presented in a single amount in the income statement, including the results after income tax of these operations less any impairment loss. Cash flows attributable to operating, investing and financing activities of discontinued operations are disclosed in a separate note.

When an operation is classified as a discontinued operation, the income statements of the prior periods are restated as if the operation had been discontinued since the beginning of the comparative period.

Any noncontrolling interest relating to a group disposal held for sale is presented in the stockholders equity and are not reclassified in the statement of financial position.

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15. Investments

The material non-consolidated entities of the Company are as follows:

	Location	Main activity/Business	% Ownership	% Voting capital	% Noncontrolling interest
Joint ventures					
Aliança Geração de Energia S.A.	Brazil	Energy	55.0%	55.0%	45.0%
Companhia Coreano-Brasileira de Pelotização	Brazil	Pellets	50.0%	50.0%	50.0%
Companhia Hispano-Brasileira de Pelotização	Brazil	Pellets	50.9%	51.0%	49.1%
Companhia Ítalo-Brasileira de Pelotização	Brazil	Pellets	50.9%	51.0%	49.1%
Companhia Nipo-Brasileira de Pelotização	Brazil	Pellets	51.0%	51.1%	49.0%
Companhia Siderúrgica do Pecém (CSP)	Brazil	Steel	50.0%	50.0%	50.0%
MRS Logística S.A.	Brazil	Logistics	48.2%	46.8%	51.8%
Nacala Corridor Holding Netherlands B.V.	Netherlands	Coal	50.0%	50.0%	50.0%
Samarco Mineração S.A.	Brazil	Pellets	50.0%	50.0%	50.0%
Direct and indirect associates					
Henan Longyu Energy Resources Co., Ltd.	China	Coal	25.0%	25.0%	75.0%
VLI S.A.	Brazil	Logistics	37.6%	37.6%	62.4%

The composition of the relevant entities is presented in note 2(c).

a) Changes during the year

Changes in investments as follows:

	Consolidated						Parent company	
	2017			2016			2017	2016
	Associates	Joint ventures	Total	Associates	Joint ventures	Total	Total	Total
Balance at January 1st,	**4,683**	**7,363**	**12,046**	**5,166**	**6,315**	**11,481**	**107,539**	**127,517**
Additions (i)	1	291	292	2	889	891	1,895	1,925
Disposals				(23)		(23)		
Translation adjustment	66	(14)	52	(283)	(101)	(384)	3,301	(13,791)
Equity results in income statement	184	118	302	237	874	1,111	5,579	7,614

Equity results from discontinued operations				10		10	(2,219)	(5,010)
Equity results in statement of comprehensive income		(466)	(466)				(826)	(140)
Dividends declared (ii)	(181)	(725)	(906)	(131)	(576)	(707)	(2,749)	(1,672)
Transfer to held for sale				(295)		(295)	1,854	(8,936)
Merger of Valepar (note 29)							3,073	
Others	21	461	482		**(38)**	(38)	(60)	32
Balance at December 31,	**4,774**	**7,028**	**11,802**	**4,683**	**7,363**	**12,046**	**117,387**	**107,539**

(i) Refers to the Coal and Other segments in the amounts of R$237 and R$55, respectively, on December 31, 2017 and R$704 and R$187, respectively, on December 31, 2016.

(ii) In 2017, the Company received dividends in the amount of R$739, of which R$584 were declared during 2017.

The investments by segments are presented in note 3(b).

b) Acquisitions and divestiture

2017

Nacala Logistic Corridor - In December 2014 and as amended in November 2016, the Company signed an agreement with Mitsui & Co., Ltd. (Mitsui) to transfer 50% of its stake of 66.7% in Nacala Logistic Corridor, which comprises entities that holds railroads and port concessions located in Mozambique and Malawi. Also, Mitsui committed to acquire 15% participation in the holding entity of Vale Moçambique, which holds the Moatize Coal Project.

In March 2017, the transaction was concluded and Vale received a consideration of R$2,186 (US$690 million). After the completion of the transaction, the Company (i) holds 81% of Vale Moçambique and retains the control of the Moatize Coal Project and (ii) shares control of the Nacala Logistic Corridor structure (Nacala BV), with Mitsui.

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As a consequence of sharing control of Nacala BV, the Company:

(i) derecognized the assets and liabilities classified as held for sale in the total amount of R$13,130 (US$4,144 million), from which R$12,874 (US$4,063 million) refers to property, plant and equipment and intangibles;

(ii) derecognized R$44 (US$14 million) related to cash and cash equivalents;

(iii) recognized a gain of R$1,403 (US$447 million) in the income statement related to the sale and the re-measurement at fair value, of its remaining interest at Nacala BV based on the consideration received;

(iv) reclassified the gain related to the cumulative translation adjustments on to income statements in the amount of R$35 (US$11 million);

The result of the transaction regarding the assets from Nacala s logistic corridor was recognized in the income statement as Impairment and other results on non-current assets .

The results of the transaction with the coal holding entity was recognized in Results from operation with noncontrolling interest in the amount of R$329 (US$105 million), directly in Stockholders Equity.

The consideration received was recognized in the statement of cash flows in Proceeds from disposal of assets and investments in the amount of R$1,387 (US$435 million) and Transactions with noncontrolling stockholders in the amount of R$799 (US$255 million).

After the conclusion of the transaction, Vale has outstanding loan balances with Nacala BV and Pangea Emirates Ltd due to the deconsolidation of Nacala Logistic Corridor, the balances as at December 31, 2017 are disclosed in note 30. In November 2017, Nacala B.V. signed financing contracts in the form of a project finance in order to receive US$2.7 billion contracted that will be used to settle a portion of the loan with the Company. The receipt of the proceeds is subject to precedent conditions for a project finance.

2016

Thyssenkrupp Companhia Siderúrgica do Atlântico Ltd (CSA) - In April 2016, the Company sold 100% of its interest at CSA (26.87%) for a non-significant amount. The transaction resulted in a loss of R$266 due to recycling the Cumulative translation adjustments recognized in the income statement as Impairment and others results in associates and joint ventures .

2015

Energy generation assets - In December 2013, the Company signed agreements with CEMIG Geração e Transmissão S.A. (CEMIG GT) to incorporate two joint ventures, Aliança Norte Participações S.A. and Aliança Geração de Energia S.A and exchange of assets and shares. The transaction was completed in the first quarter of 2015, in which Vale received cash proceeds of R$306 and recognized a gain of R$55 as Impairment and others results in associates and joint ventures and a gain of R$546 as Impairment and others results of non-current assets .

Shandong Yankuang International Coking Co., Ltd. (Yankuang) - In 2015, the Company completed the sale 100% of its interest at Yankuang, a producer of coking coal, methanol and other products. In this transaction, Vale recognized a gain of R$241 as Impairment and others results in associates and joint ventures .

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Investments (continued)

			Investments		Equity results in the income statement Year ended December 31			Dividends received (i) Year ended December 31		
	% ownership	% voting capital	December 31, 2017	December 31, 2016	2017	2016	2015	2017	2016	2015
Subsidiaries										
Aços Laminados do Pará S.A.	100.00	100.00	97	344	(247)					
Biopalma da Amazônia S.A.	97.61	97.61	994	857	(173)	59	(593)			
Companhia Portuária da Baía de Sepetiba	100.00	100.00	267	430	142	318	456	318	455	188
Mineração Corumbaense Reunida S.A.	100.00	100.00			(682)	(117)	(1,184)			147
Minerações Brasileiras Reunidas S.A.	58.93	98.32	5,417	6,262	731	716	557	542	1,329	324
Minerações Brasileiras Reunidas S.A. - Goodwill			4,060	4,060						
Salobo Metais S.A.	100.00	100.00	9,535	8,557	1,564	598	696	417	258	
Tecnored Desenvolvimento Tecnológico S.A.	100.00	100.00	45	39	(24)	(38)				
Vale International Holdings GmbH	100.00	100.00	7,830	8,345	(609)	(2,694)	2,069			
Vale Canada Limited (ii)	100.00	100.00	17,125	17,460	(2,988)	(4,889)	(18,210)			
Vale International S.A.	100.00	100.00	41,389	34,172	7,649	12,709	(16,998)			
Vale Malaysia Minerals Sdn. Bhd.	100.00	100.00	4,243	3,904	273	394	(467)			
Vale Manganês S.A.	100.00	100.00	679	595	84	(81)	(45)			
Vale Shipping Holding Pte. Ltd.	100.00	100.00	9,334	9,161	29	32	(99)			
Valepar - Goodwill			3,073							
Others			1,497	1,307	(472)	(504)	(784)	791	71	621
			105,585	**95,493**	**5,277**	**6,503**	**(34,602)**	**2,068**	**2,113**	**1,280**
Joint Ventures										
Aliança Geração de Energia S.A.	55.00	55.00	1,889	1,896	86	157	173	93	137	115
Aliança Norte Energia Participações S.A.	51.00	51.00	529	483	(7)	(21)	2			
California Steel Industries, Inc.	50.00	50.00	663	604	135	107	(90)	88	13	
Companhia Coreano-Brasileira de Pelotização	50.00	50.00	295	221	161	61	85	62	90	67
Companhia Hispano-Brasileira de Pelotização	50.89	51.00	270	191	132	50	50	53	95	44

Companhia Ítalo-Brasileira de Pelotização	50.90	51.00	263	223	128	56	69	54	33	36
Companhia Nipo-Brasileira de Pelotização	51.00	51.11	453	353	295	101	152	96	141	102
Companhia Siderúrgica do Pecém	50.00	50.00	867	1,716	(849)	135	(1,047)			
MRS Logística S.A.	48.16	46.75	1,711	1,592	219	201	143	95	34	87
Samarco Mineração S.A.	50.00	50.00					(533)			459
Others			90	86	(183)	27	(11)		1	2
			7,030	**7,365**	**117**	**874**	**(1,007)**	**541**	**544**	**912**
Associates										
Henan Longyu Energy Resources Co., Ltd.	25.00	25.00	1,048	929	63	(18)	(13)			109
Mineração Rio Grande do Norte S.A.	40.00	40.00	333	421	43	172	144	136	111	12
Teal Minerals Inc.	50.00	50.00			(1)	(11)	(482)			
Thyssenkrupp Companhia Siderúrgica do Atlântico Ltd.							(274)			
VLI S.A.	37.60	37.60	3,202	3,158	94	120	156	62		25
Zhuhai YPM Pellet Co.	25.00	25.00	76	70			1			
Others			113	103	**(14)**	**(26)**	**(51)**		14	6
			4,772	**4,681**	**185**	**237**	**(519)**	**198**	**125**	**152**
Total of joint ventures and associates			**11,802**	**12,046**	**302**	**1,111**	**(1,526)**	**739**	**669**	**1,064**
Total			**117,387**	**107,539**	**5,579**	**7,614**	**(36,128)**	**2,807**	**2,782**	**2,344**

(i) Dividends received by the Parent Company during the year ended at December 31, 2017 and 2016 were R$2,644 and R$1,591, respectively.

(ii) Includes foreign subsidiaries of the base metals segment.

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c) Summarized financial information

The summarized financial information about relevant associates and joint-ventures for the Company are as follows:

	December 31, 2017					
		Joint ventures			Associates	
	Aliança Geração de Energia	CSP	Pelletizing (i)	MRS Logística	Henan Longyu	VLI S.A.
Current assets	453	2,511	2,507	1,021	3,545	2,442
Non-current assets	3,972	12,281	1,024	6,813	1,396	13,795
Total assets	**4,425**	**14,792**	**3,531**	**7,834**	**4,941**	**16,237**
Current liabilities	285	3,509	994	1,498	749	1,769
Non-current liabilities	705	9,549	16	2,784		5,952
Total liabilities	**990**	**13,058**	**1,010**	**4,282**	**749**	**7,721**
Stockholders equity	**3,435**	**1,734**	**2,521**	**3,552**	**4,192**	**8,516**
Net income (loss)	**157**	**(1,698)**	**1,410**	**454**	**252**	**251**

	December 31, 2016					
		Joint ventures			Associates	
	Aliança Geração de Energia	CSP	Pelletizing (i)	MRS Logística	Henan Longyu	VLI S.A.
Current assets	376	2,422	1,278	759	2,942	1,269
Non-current assets	3,935	12,415	1,036	6,814	1,486	13,587
Total assets	**4,311**	**14,837**	**2,314**	**7,573**	**4,428**	**14,856**
Current liabilities	537	2,166	355	1,410	652	2,206
Non-current liabilities	326	9,240	11	2,858	62	4,251
Total liabilities	**863**	**11,406**	**366**	**4,268**	**714**	**6,457**
Stockholders equity	**3,448**	**3,431**	**1,948**	**3,305**	**3,714**	**8,399**
Net income (loss)	**285**	**270**	**531**	**417**	**(72)**	**318**

(i) Aggregate entity information: Companhia Coreano-Brasileira de Pelotização, Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização, Companhia Nipo-Brasileira de Pelotização.

The stand-alone financial information may differ from the financial information reported herein, since they may be adjusted, when necessary to Vale s accounting policies including eventual goodwill, provisional price adjustment, etc.

Accounting policy

Joint arrangements investments - Joint arrangements are all entities over which the Company has shared control with one or more parties. Joint arrangement investments are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor.

The joint operations are recorded in the financial statements to represent the Company s contractual rights and obligations. The Company does not have material joint operations.

Interests in joint ventures are accounted for using the equity method, after initially being recognized at cost. The Company s investment in joint ventures includes the goodwill identified in the acquisition, net of any accumulated impairment loss.

The Company s interest in the profits or losses of its joint ventures is recognized in the income statement and participation in the changes in reserves is recognized in the Company s reserves. When the Company s interest in the losses of an associate or joint venture is equal to or greater than the carrying amount of the investment, including any other receivables, the Company does not recognize additional losses, unless it has incurred obligations or made payments on behalf of the joint venture.

Critical accounting estimates and judgments

Judgment is required in some circumstances to determine whether after considering all relevant factors, the Company has control, joint control or significant influence over an entity. Significant influence includes situations of collective control.

The Company holds the majority of the voting capital in five joint arrangements (Aliança Geração de Energia S.A., Aliança Norte Energia Participações S.A., Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização and Companhia Nipo-Brasileira de Pelotização), but management have concluded that the Company does not have a sufficiently dominant voting interest to have the power to direct the activities of the entity. As a result, these entities are accounted under equity method due to shareholder s agreements where relevant decisions are shared with other parties.

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16. Noncontrolling interest

a) Summarized financial information

The summarized financial information, prior to the eliminations of the intercompany balances and transactions, about subsidiaries with material noncontrolling interest are as follows:

	December 31, 2017						
	MBR	PTVI	VNC	Vale Moçambique S.A.	Compañia Mineradora Miski Mayo S.A.C. (i)	Others (ii)	Total
Current assets	1,349	1,305	827	1,261	225		
Non-current assets	10,061	5,247	6,767	5,467	1,481		
Related parties - Stockholders	1,954	486	382	837	19		
Total assets	**13,364**	**7,038**	**7,976**	**7,565**	**1,725**		
Current liabilities	561	423	469	419	117		
Non-current liabilities	953	784	999	107	319		
Related parties - Stockholders	747	10	4,363	27,231	32		
Total liabilities	**2,261**	**1,217**	**5,831**	**27,757**	**468**		
Stockholders equity	11,103	5,821	2,145	(20,192)	1,257		
Equity attributable to noncontrolling interests	**4,441**	**2,431**	**60**	**(3,641)**	**754**	**303**	**4,348**
Net income (loss)	1,385	(49)	(1,827)	(2,110)	(37)		
Net income (loss) attributable to noncontrolling interests	**554**	**(20)**	**(91)**	**(332)**	**(22)**	**(46)**	**43**
Dividends paid to noncontrolling interests	**362**					**43**	

(i) Discontinued operations

(ii) Dividends paid to noncontrolling interests relates to Vale Oman Pelletizing

	December 31, 2016						
	MBR	**PTVI**	**VNC**	**Vale Moçambique S.A.**	**Compañia Mineradora Miski Mayo S.A.C. (i)**	**Others**	**Total**
Current assets	103	1,448	1,246	1,262	304		
Non-current assets	10,370	5,435	6,848	5,851	1,400		
Related parties - Stockholders	1,797	431	259	1,164	44		
Total assets	**12,270**	**7,314**	**8,353**	**8,277**	**1,748**		
Current liabilities	341	452	406	308	115		
Non-current liabilities	647	851	576	95	322		
Related parties - Stockholders	123	21	3,436	25,620	36		
Total liabilities	**1,111**	**1,324**	**4,418**	**26,023**	**473**		
Stockholders equity	11,159	5,990	3,935	(17,746)	1,275		
Equity attributable to noncontrolling interests	**4,853**	**2,416**	**130**	**(887)**	**765**	**(816)**	**6,461**
Net income (loss)	1,393	6	(2,627)	(1,928)	16		
Net income (loss) attributable to noncontrolling interests	**572**	**3**	**(131)**	**(96)**	**9**	**(372)**	**(15)**
Dividends paid to noncontrolling interests	**886**				**106**		

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	December 31, 2015						
	MBR	PTVI	VNC	Vale Moçambique S.A.	Compañia Mineradora Miski Mayo S.A.C. (i)	Others	Total
Net income (loss)	911	141	(7,480)	(14,240)	**51**		
Net income (loss) attributable to noncontrolling interests	**255**	**57**	**(1,458)**	**(712)**	**31**	**43**	**(1,784)**
Dividends paid to noncontrolling interests					**75**		

(i) Discontinued operation

The stand-alone financial information may differ from the financial information reported herein, since they may be adjusted, when necessary to Vale s accounting policies including eventual goodwill, provisional price adjustment, etc.

b) Acquisitions and divestments

In March 2017, the Company concluded the transaction with Mitsui to sell 15% of its stake in Vale Moçambique and 50% of its stake in the Nacala Logistics Corridor. After the completion of the transaction, the Company holds 81% of Vale Moçambique and shares control of the Nacala Logistic Corridor with Mitsui. Further details are disclosed in note 15.

17. Intangibles

Changes in intangibles are as follows:

	Goodwill	Concessions	Consolidated Right of use	Software	Total
Balance at December 31, 2015	**11,544**	**7,084**	**811**	**1,350**	**20,789**
Additions		3,926	**3**	46	3,975
Disposals		(39)		**(1)**	(40)

Amortization		(842)	**(8)**	**(534)**	(1,384)
Impairment of discontinued operations (note 14)	(102)				(102)
Translation adjustment	(1,295)	361	(63)	**(33)**	(1,030)
Transfers		269	(263)	289	295
Effect of discontinued operations					
Transfer to net assets held for sale	**(106)**			**(2)**	(108)
Balance at December 31, 2016	**10,041**	**10,759**	**480**	**1,115**	**22,395**
Cost	10,041	14,559	723	5,116	30,439
Accumulated amortization		(3,800)	(243)	(4,001)	(8,044)
Balance at December 31, 2016	**10,041**	**10,759**	**480**	**1,115**	**22,395**
Additions		3,140		81	3,221
Disposals		(30)			(30)
Amortization		(671)	(7)	(456)	(1,134)
Translation adjustment	479	(19)	33	19	512
Merger of Valepar (note 29)	3,073				3,073
Transfers		57			57
Balance at December 31, 2017	**13,593**	**13,236**	**506**	**759**	**28,094**
Cost	13,593	16,787	798	5,141	36,319
Accumulated amortization		(3,551)	(292)	(4,382)	(8,225)
Balance at December 31, 2017	**13,593**	**13,236**	**506**	**759**	**28,094**

	Parent company			
	Concessions	**Right of use**	**Software**	**Total**
Balance at December 31, 2015	**7,084**	**123**	**1,350**	**8,557**
Additions	3,578		44	3,622
Disposals	(39)			(39)
Amortization	(345)	(5)	(476)	(826)
Balance at December 31, 2016	**10,278**	**118**	**918**	**11,314**
Cost	13,670	224	4,041	17,935
Accumulated amortization	(3,392)	(106)	(3,123)	(6,621)
Balance at December 31, 2016	**10,278**	**118**	**918**	**11,314**
Additions	2,778		69	2,847
Disposals	(22)			(22)
Amortization	(261)	(7)	(400)	(668)
Balance at December 31, 2017	**12,773**	**111**	**587**	**13,471**
Cost	16,245	223	4,110	20,578
Accumulated amortization	(3,472)	(112)	(3,523)	(7,107)
Balance at December 31, 2017	**12,773**	**111**	**587**	**13,471**

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a) **Goodwill** - The goodwill arose from the acquisition of iron ore and nickel businesses. In 2017, the goodwill was recognized on the acquisition of Vale controlling interest by Valepar, based on the expected future returns on the ferrous segment. As the fundamentals are still valid on the date of the merger of Valepar by Vale, the goodwill was fully recognized. The Company has not recognized the deferred taxes over the goodwill, since there are no differences between the tax basis and accounting basis. The Company assess periodically the recoverable amount of the goodwill.

b) **Concessions** - The concessions refer to the agreements with governments for the exploration and the development of ports and railways. The Company holds railway concessions which are valid over a certain period of time. Those assets are classified as intangible assets and amortized over the shorter of their useful lives and the concession term at the end of which they will be returned to the government.

c) **Right of use** - Refers to intangible identified in the business combination of Vale Canada Limited (Vale Canada) and to the usufruct contract between the Company and noncontrolling stockholders to use the shares of Empreendimentos Brasileiros de Mineração S.A. (owner of Minerações Brasileiras Reunidas S.A. shares). The amortization of the right of use will expire in 2037 and Vale Canada s intangible will end in September of 2046.

Accounting policy

Intangibles are carried at the acquisition cost, net of accumulated amortization and impairment charges.

The estimated useful lives are as follows:

	Useful life
Concessions	3 to 50 years
Right of use	22 to 31 years
Software	5 years

18. Property, plant and equipment

Changes in property, plant and equipment are as follows:

	Consolidated							
	Land	Building	Facilities	Equipment	Mineral properties	Others	Constructions in progress	Total
Balance at December 31, 2015	**2,989**	**35,538**	**32,378**	**28,532**	**40,234**	**28,135**	**43,453**	**211,259**
Additions (i)							17,628	17,628
Disposals	(2)	(27)	**(29)**	(65)	(406)	(1,338)	(63)	(1,930)
Assets retirement obligation					1,028			1,028
Depreciation, amortization and depletion		(1,789)	(2,432)	(3,156)	(2,766)	(2,195)		(12,338)
Transfers to non-current assets held for sale						(1,595)		(1,595)
Impairment (note 19)	(4)	(1,476)	(578)	(367)	(374)	(502)	222	(3,079)
Impairment of discontinued operations (note 14)	(174)		(214)		(5,409)			(5,797)
Translation adjustment	(130)	(3,724)	(2,158)	(2,626)	(4,080)	(1,423)	(1,454)	(15,595)
Transfers	85	7,351	4,160	3,392	840	3,613	(19,736)	(295)
Acquisition of subsidiary		1						1
Effect of discontinued operations								
Transfer to net assets held for sale	**(404)**	(1,084)	(261)	(3,569)	(1,755)	(201)	(1,397)	(8,671)
Balance at December 31, 2016	**2,360**	**34,790**	**30,866**	**22,141**	**27,312**	**24,494**	**38,653**	**180,616**
Cost	2,360	54,359	51,051	38,955	52,360	36,890	38,653	274,628
Accumulated depreciation		(19,569)	(20,185)	(16,814)	(25,048)	(12,396)		(94,012)
Balance at December 31, 2016	**2,360**	**34,790**	**30,866**	**22,141**	**27,312**	**24,494**	**38,653**	**180,616**
Additions (i)							10,867	10,867
Disposals	(2)	(37)	(181)	(214)	(490)	(684)	(503)	(2,111)
Assets retirement obligation					1,382			1,382
Depreciation, amortization and depletion		(1,871)	(2,351)	(2,596)	(1,971)	(2,407)		(11,196)
Impairment (note 19)	(65)			(110)	(429)		(279)	(883)
Translation adjustment	293	326	454	63	1,237	629	(85)	2,917
Transfers	(211)	6,820	10,198	3,519	2,958	5,072	(28,413)	(57)
Balance at December 31, 2017	**2,375**	**40,028**	**38,986**	**22,803**	**29,999**	**27,104**	**20,240**	**181,535**
Cost	2,375	63,392	60,509	42,490	57,794	41,223	20,240	288,023
Accumulated depreciation		(23,364)	(21,523)	(19,687)	(27,795)	(14,119)		(106,488)
Balance at December 31, 2017	**2,375**	**40,028**	**38,986**	**22,803**	**29,999**	**27,104**	**20,240**	**181,535**

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	Parent company							
	Land	Building	Facilities	Equipment	Mineral properties	Others	Constructions in progress	Total
Balance at December 31, 2015	**1,672**	**19,546**	**19,379**	**8,371**	**4,215**	**14,203**	**29,501**	**96,887**
Additions (i)							9,551	9,551
Disposals		(1)	(17)	(4)		**(27)**	(45)	(94)
Assets retirement obligation					202			202
Depreciation, amortization and depletion		(675)	(1,059)	(1,102)	(207)	(1,352)		(4,395)
Impairment (note 19)			480	(86)		(16)	(173)	205
Transfers	12	2,075	1,633	1,300	**(88)**	3,691	(8,923)	(300)
Balance at December 31, 2016	**1,684**	**20,945**	**20,416**	**8,479**	**4,122**	**16,499**	**29,911**	**102,056**
Cost	1,684	24,250	27,293	14,219	5,576	24,558	29,911	127,491
Accumulated depreciation		(3,305)	(6,877)	(5,740)	(1,454)	(8,059)		(25,435)
Balance at December 31, 2016	**1,684**	**20,945**	**20,416**	**8,479**	**4,122**	**16,499**	**29,911**	**102,056**
Additions (i)							6,195	6,195
Disposals	**(1)**		(70)	**(66)**		**(96)**	(366)	(599)
Assets retirement obligation					269			269
Depreciation, amortization and depletion		(755)	(1,092)	(1,098)	(267)	(1,731)		(4,943)
Transfers	56	5,125	7,950	2,401	1,243	3,533	(20,308)	
Balance at December 31, 2017	**1,739**	**25,315**	**27,204**	**9,716**	**5,367**	**18,205**	**15,432**	**102,978**
Cost	1,739	30,456	34,144	16,482	7,088	27,735	15,432	133,076
Accumulated depreciation		(5,141)	(6,940)	(6,766)	(1,721)	(9,530)		(30,098)
Balance at December 31, 2017	**1,739**	**25,315**	**27,204**	**9,716**	**5,367**	**18,205**	**15,432**	**102,978**

(i) Includes capitalized borrowing costs.

a) Disposals of assets

In June 2016, Vale approved a plan to dispose of its fleet of eleven ships. As consequence, these assets were reclassified to non-current assets held for sale and a loss of R$228 was recognized in the income statement as Impairment and other results on non-current assets . In the year

ended December 31, 2016, the Company concluded the sale of three Very Large Ore Carriers (VLOC s) and four Capesize vessels for R$1,333.

In the year ended December 31, 2017, the Company concluded the sale of four VLOC s and two Floating Transfer Stations in the amount of R$1,259. The Company recognized a loss of R$436 in the income statement as Impairment and other results on non-current assets .

Additionally, in 2017, the Company recognized a loss of R$1,144 in the income statement as Impairment and other results on non-current assets due to non-viable projects and operating assets written off through sale or obsolescence.

Accounting policy

Property, plant and equipment is recorded at the cost of acquisition or construction, net of accumulated depreciation and impairment charges.

Mineral properties developed internally are determined by (i) direct and indirect costs attributed to build the mining facilities, (ii) financial charges incurred during the construction period, (iii) depreciation of other fixed assets used during construction, (iv) estimated decommissioning and site restoration expenses, and (v) other capitalized expenditures during the development phase (phase when the project demonstrates its economic benefit to the Company, and the Company has ability and intention to complete the project).

The depletion of mineral properties is determined based on the ratio between production and total proven and probable mineral reserves.

Property, plant and equipment, other than mineral properties are depreciated using the straight-line method based on the estimated useful lives, from the date on which the assets become available for their intended use and are capitalized, except for land which is not depreciated.

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The estimated useful lives are as follows:

	Useful life
Buildings	15 to 50 years
Facilities	3 to 50 years
Equipment	3 to 40 years
Others:	
Locomotives	12 to 25 years
Wagon	30 to 44 years
Railway equipment	5 to 33 years
Ships	20 years
Others	2 to 50 years

The residual values and useful lives of assets are reviewed at the end of each reporting period and adjusted if necessary.

a) Mineral reserves

Critical accounting estimates and judgments

The estimates of proven and probable reserves are regularly evaluated and updated. These reserves are determined using generally accepted geological estimates. The calculation of reserves requires the Company to make assumptions about expected future conditions that are uncertain, including future ore prices, exchange rates, inflation rates, mining technology, availability of permits and production costs. Changes in assumptions could have a significant impact on the proven and probable reserves of the Company.

The estimated volume of mineral reserves is used as basis for the calculation of depletion of the mineral properties, and also for the estimated useful life which is a major factor to quantify the provision for asset retirement obligation, environmental recovery of mines and impairment of long lived asset. Any changes to the estimates of the volume of mine reserves and the useful lives of assets may have a significant impact on the depreciation, depletion and amortization charges and assessments of impairment.

b) Expenditures and stripping costs

(i) Exploration and evaluation expenditures - Expenditures on mining research are accounted for as operating expenses until the effective proof of economic feasibility and commercial viability of a given field can be demonstrated. From then on, the expenditures incurred are capitalized as mineral properties.

(ii) Expenditures on feasibility studies, new technologies and others research - The Company also conducts feasibility studies for many businesses which it operates including researching new technologies to optimize the mining process. After these costs are proven to generate future benefits to the Company, the expenditures incurred are capitalized.

(iii) Maintenance costs - Significant industrial maintenance costs, including spare parts, assembly services, and others, are recorded in property, plant and equipment and depreciated through the next programmed maintenance overhaul.

(iv) Stripping Costs - The cost associated with the removal of overburden and other waste materials (stripping costs) incurred during the development of mines, before production takes place, are capitalized as part of the depreciable cost of the mineral properties. These costs are subsequently amortized over the useful life of the mine.

Post-production stripping costs are included in the cost of inventory, except when a new project is developed to permit access to a significant ore deposits. In such cases, the cost is capitalized as a non-current asset and is amortized during the extraction of the ore deposits, over the useful life of the ore deposits.

Stripping costs are measured at fixed and variable costs directly and indirectly attributable to its removal and, when applicable, net of any impairment losses measured in the same basis adopted for the cash generating unit of which it belongs.

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19. Impairment and onerous contracts

The impairment losses (reversals) recognized in the year are presented below:

		Income statement Impairment (reversals)		
Segments by class of assets	**Assets or cash-generating unit**	**2017**	**2016**	**2015**
Property, plant and equipment and intangible				
Iron ore	North system		(536)	213
Coal	Australia		91	2,460
Base metals - nickel	Stobie	428		
Base metals - nickel	Newfoundland (VNL)		2,112	13,394
Base metals - nickel	Nouvelle Caledonie (VNC)		952	5,660
Base metals - nickel	Onça Puma			(976)
Coal	Mozambique			9,302
Iron ore	Midwest system			2,023
Several segments	Other assets	455	460	487
Impairment of non-current assets		**883**	**3,079**	**32,563**
Onerous contracts			861	1,382
Impairment of non-current assets and onerous contracts		**883**	**3,940**	**33,945**
Investments in associates and joint ventures				
Iron ore	Samarco Mineração S.A.			510
Base metals - Copper	Teal Minerals Inc.			1,217
Impairment of investments in associates and joint ventures				**1,727**

a) Impairment of non-financial assets

The Company has carried out an impairment test for the assets that a triggering event was identified. The recoverable amount is assessed by reference to the higher of value in use (VIU) and fair value less costs of disposal (FVLCD).

The recoverable amount of each Cash Generating Units (CGU) under the impairment testing was assessed using FVLCD model, through discounted cash flow techniques, which is classified as level 3 in the fair value hierarchy.

The cash flows were discounted using a post-tax discount rate ranging from 6% to 9%, which represents an estimate of the rate that a market participant would apply having regard to the time value of money and the risks specific to the asset. The Company used its weighted average cost of capital (WACC) as a starting point for determining the discount rates, with appropriate adjustments for the risk profile of the countries in

which the individual CGU operate.

Iron ore and pellets - During 2017, the Company did not identify any changes in the circumstances or indicators that would require reassessment of the carrying amount of the iron ore and pellets CGUs.

Of the total goodwill (note 17), R$7,133 is allocated to the group of ferrous mineral CGUs. The impairment analysis based on FVLCD model demonstrates that there were no impairment loss in relation to the individual CGUs or goodwill.

In 2016, based on the market circumstances, the Company decided to resume Norte s system pelletizing plant, based on the studies carried out by management that demonstrates its economic feasibility. Accordingly, the Company reversed the full impairments of R$536 recorded in 2013 and 2015.

In 2015, the Company recognized an impairment loss of R$2,023 due to lack of competitiveness in the Midwest system because of the complex logistic system associated with the decline in iron ore prices. Accordingly, long-lived assets were fully impaired.

Coal - Based on the 2017 impairment triggering assessment, the Company has identified trigger of impairment in the Mozambique CGU, driven by a reduction in the proven and probable reserves due to a geological revision undertaken by Management in the last quarter of 2017. However, coal price projections have increased, triggering a discussion around impairment reversal review. The Company carried out an impairment test based on FVLCD model and concluded that there were no changes in the impairment previously recognized.

In 2016, the future mining plans of the coal assets in Australia were revised and an impairment loss of R$91 was recognized in the income statement (R$2,460 in 2015).

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In 2015, due to a reduction in the estimated future coal prices, at that point in time, associated with an increase in the logistics costs, the Company recognized an impairment loss of R$9,302 in relation to the coal asset in Mozambique.

Nickel - Based on the 2017 impairment trigger assessment, the Company has identified impairment indicators in the nickel CGUs, driven by a decrease in the nickel long-term price projections. The Company carried out an impairment test based on FVLCD model and concluded that there were no changes in the impairment previously recognized.

Except for an underground mine in Sudbury that was affected by seismic activities and the cost to repair the asset is deemed not recoverable in the current market conditions. Therefore, the Company has placed this asset on care and maintenance and an impairment of R$428 was recognized in the income statement.

Of the total goodwill (note 17), R$6,460 is allocated to the group of nickel CGUs. The impairment analysis based on FVLCD model demonstrates that there were no impairment loss in relation to the individual CGUs or goodwill.

In 2016, the decrease in long term nickel price projections, that significantly reduced the recoverable amounts of the VNL and VNC CGUs, associated with significant capital investments in new processing facilities in recent years, resulted in impairment losses of R$2,122 and R$952 (2015 - R$13,394 and R$5,660), respectively.

b) Onerous contract

In 2016, the Company recognized a provision of R$861 (R$1,382 in 2015) for the costs in respect of certain long-term contracts in the Midwest system for fluvial transportation and port structure, with minimum guaranteed volume.

c) Impairment of investments in associates and joint ventures

In 2015, the Company recognized an impairment of R$510 in its investment in Samarco (note 21) and R$1,217 in Teal Minerals Inc. (Teal). Teal recognized an impairment of property, plant and equipment due to the revision of future mining plans and the decrease of the copper price.

Accounting policy

Impairment of non-Financial assets - Non-financial assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount might not be recoverable. An impairment loss is recognized for the amount by which the asset s carrying value exceeds its recoverable amount. The recoverable amount is the higher of an asset s fair value less costs of disposal (FVLCD) and value in use (VIU).

FVLCD is generally determined as the present value of the estimated future cash flows expected to arise from the continued use of the asset from a market participant s perspective, including any expansion prospects. VIU model is determined as the present value of the estimated future cash flows expected to arise from the continued use of the asset in its present form. Value in use is determined by applying assumptions specific to the Company s continued use and cannot take into account future development. These assumptions are different to those used in calculating fair value and consequently the VIU calculation is likely to give a different result to a FVLCD calculation.

Assets that have indefinite useful life and are not subject to amortization, such as goodwill, are tested annually for impairment.

For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (Cash Generating Units (CGUs)). Goodwill is allocated to Cash Generating Units or Cash Generating Units groups that are expected to benefit from the business combinations in which the goodwill arose and are identified in accordance with the operating segment.

Non-current assets (excluding goodwill) in which the Company recognized impairment in the past are reviewed whenever events or changes in circumstances indicate that the impairment may no longer be applicable. In such cases, an impairment reversal will be recognized.

Onerous Contracts - For certain long-term contracts, a provision is recognized when the present value of the unavoidable cost to meet the Company s obligation exceeds the economic benefits that could be received from those contracts.

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Critical accounting estimates and judgments

The Company determines its cash flows based on the budgets approved by management, which require the use of the following assumptions: (i) mineral reserves and mineral resources measured by internal experts; (ii) costs and investments based on the best estimate of projects as supported by past performance; (iii) sale prices consistent with projections available in reports published by industry considering the market price when appropriate; (iv) the life of each cash-generating unit (ratio between production and mineral reserves); and (v) discount rates that reflect specific risks relating to the relevant assets in each cash-generating unit. These assumptions are subject to risk and uncertainty. Hence, there is a possibility that changes in circumstances will change these projections, which may affect the recoverable amount of the assets.

20. Loans, borrowings, cash and cash equivalents and financial investments

a) Net debt

The Company evaluates the net debt with the objective of ensuring the continuity of its business in the long term, being able to generate value to its stockholders, through the payment of dividends and capital gain.

	Consolidated		Parent company	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Debt contracts in the international markets	57,187	68,863	17,355	26,796
Debt contracts in Brazil	17,205	26,701	15,989	25,252
Total of loans and borrowings	**74,392**	**95,564**	**33,344**	**52,048**
(-) Cash and cash equivalents	14,318	13,891	1,876	1,203
(-) Financial investments	61	59	4	4
Net debt	**60,013**	**81,614**	**31,464**	**50,841**

b) Cash and cash equivalents

Cash and cash equivalents includes cash, immediately redeemable deposits and short-term investments with an insignificant risk of change in value. They are readily convertible to cash, being R$5,921 denominated in R$, indexed to the Brazilian Interbank Interest rate (DI Rate or CDI), R$7,924 denominated in US$, mainly time deposits and R$473 denominated in other currencies.

c) Loans and borrowings

i) Total debt

	Consolidated			
	Current liabilities		Non-current liabilities	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Debt contracts in the international markets				
Floating rates in:				
US$	1,027	762	9,142	17,889
EUR			794	688
Fixed rates in:				
US$			41,642	42,643
EUR			2,977	5,157
Other currencies	57	55	682	679
Accrued charges	**866**	**990**		
	1,950	**1,807**	**55,237**	**67,056**
Debt contracts in Brazil				
Floating rates in:				
R$, indexed to TJLP, TR, IPCA, IGP-M and CDI	1,478	1,313	10,570	18,326
Basket of currencies and US$ indexed to LIBOR	1,121	1,117	2,341	3,962
Fixed rates in:				
R$	225	214	572	703
Accrued charges	**859**	**959**	**39**	**107**
	3,683	**3,603**	**13,522**	**23,098**
	5,633	**5,410**	**68,759**	**90,154**

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	Parent company			
	Current liabilities		Non-current liabilities	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Debt contracts in the international markets				
Floating rates in:				
US$	708	448	8,410	15,876
Fixed rates in:				
US$			4,962	4,889
EUR			2,977	5,158
Accrued charges	**298**	**425**		
	1,006	**873**	**16,349**	**25,923**
Debt contracts in Brazil				
Floating rates in:				
R$, indexed to TJLP, TR, IPCA, IGP-M and CDI	1,214	1,059	9,781	17,307
Basket of currencies and US$ indexed to LIBOR	1,121	1,117	2,341	3,962
Fixed rates in:				
R$	190	190	495	685
Accrued charges	**847**	**932**		
	3,372	**3,298**	**12,617**	**21,954**
	4,378	**4,171**	**28,966**	**47,877**

The future flows of debt payments principal, per nature of funding and interest are as follows:

	Consolidated					Parent company
	Principal					Principal
	Bank loans	Capital markets	Development agencies	Total	Estimated future interest payments (i)	Total
2018	533		3,374	3,907	4,119	3,234
2019	2,809		2,979	5,788	3,802	5,057
2020	3,253	2,750	2,518	8,521	3,604	6,284
2021	1,899	4,475	2,304	8,678	3,125	3,966
Between 2022 and 2025	1,665	11,673	3,141	16,479	9,021	8,065
2026 onwards	287	28,400	568	29,255	19,614	5,594
	10,446	**47,298**	**14,884**	**72,628**	**43,285**	**32,200**

(i) Estimated future payments of interest, calculated based on interest rate curves and foreign exchange rates applicable as at December 31, 2017 and considering that all amortization payments and payments at maturity on loans and borrowings will be made on their contracted payments dates. The amount includes the estimated values of future interest payments (not yet accrued), in addition to interest already recognized in the financial statements.

At December 31, 2017, the average annual interest rates by currency are as follows:

	Consolidated		Parent company	
	Average interest rate (i)	Total debt	Average interest rate (i)	Total debt
Loans and borrowings				
US$	5.39%	56,036	4.12%	17,739
R$ (ii)	8.14%	13,719	8.36%	12,504
EUR (iii)	3.34%	3,895	3.75%	3,101
Other currencies	3.23%	742		
		74,392		**33,344**

(i) In order to determine the average interest rate for debt contracts with floating rates, the Company used the rate applicable at December 31, 2017.

(ii) R$ denominated debt that bears interest at IPCA, CDI, TR or TJLP, plus spread. For a total of R$7,704 the Company entered into derivative transactions to mitigate the exposure to the cash flow variations of the floating rate debt denominated in R$, resulting in an average cost of 1.89% per year in US$.

(iii) Eurobonds, for which the Company entered into derivatives to mitigate the exposure to the cash flow variations of the debt denominated in EUR, resulting in an average cost of 4.29% per year in US$.

ii) Reconciliation of debt to cash flows arising from financing activities

	Consolidated							
		Cash flow		Non-cash changes				
	December 31, 2016	Additions	Repayments	Interest paid	Transferences	Effect of exchange rate	Interest accretion	December 31, 2017
Loans and borrowings								
Current	5,410		(28,878)	(5,373)	28,594	462	5,418	5,633
Non-current	90,154	6,223			(28,594)	976		68,759
Total	**95,564**	**6,223**	**(28,878)**	**(5,373)**		**1,438**	**5,418**	**74,392**

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iii) Credit and financing lines

Type	Contractual currency	Date of agreement	Period of the agreement	Total amount	Available amount December 31, 2017
Credit lines					
Revolving credit facilities	US$	May 2015	5 years	9,924	9,924
Revolving credit facilities	US$	June 2017	5 years	6,616	6,616
Financing lines					
BNDES - CLN 150	R$	September 2012	10 years	3,883	20
BNDES - S11D e S11D Logística	R$	May 2014	10 years	6,163	1,016

In June 2017, the Company signed a R$6,616 (US$2,000 million) revolving credit facility, which will be available for five years, to replace the R$6,616 (US$2,000 million) line that was signed in 2013, which was cancelled. At December 31, 2017, the total available amount in revolving credit facilities remains at R$16,540 (US$5,000 million).

Liquidity risk- The revolving credit facilities available today were acquired from a syndicate of several global commercial banks. To mitigate such risk, Vale has a revolving credit facilities to assist the short term liquidity management and to enable more efficiency in cash management, being consistent with the strategic focus on cost of capital reduction.

iv) Funding

In February 2017, the Company issued through Vale Overseas Limited guaranteed notes due August 2026 totaling R$3,308 (US$1,000 million). The notes bears 6.250% coupon per year, payable semi-annually, and were sold at a price of 107.793% of the principal amount. The notes were consolidated with, and formed a single series with, Vale Overseas s R$3,308 (US$1,000 million) 6.250% notes due 2026 issued on August, 2016. Vale applied the net proceeds from the offering to the early redemption of Vale s 750 notes (due in March 2018).

In September 2017, the Company redeemed all of its 5.625% guaranteed notes due 2019 issued through Vale Overseas Limited totaling R$3,168 (US$1,000 million). Additionally, the Company conducted a Tender Offer for the outstanding 4.625% guaranteed notes due 2020 issued by its subsidiary Vale Overseas Limited. The total principal amount of 2020 Notes accepted for purchase pursuant to the Tender Offer was R$1,587 (US$501 million) from a total of R$3,168 (US$1,000 million).

v) Guarantees

As at December 31, 2017 and 2016, loans and borrowings are secured by property, plant and equipment and receivables in the amount of R$910 and R$1,538, respectively.

The securities issued through Vale s 100%-owned finance subsidiary Vale Overseas Limited are fully and unconditionally guaranteed by Vale.

vi) Covenants

Some of the Company s debt agreements with lenders contain financial covenants. The primary financial covenants in those agreements require maintaining certain ratios, such as debt to EBITDA (Earnings before Interest Taxes, Depreciation and Amortization) and interest coverage. The Company has not identified any instances of noncompliance as at December 31, 2017 and 2016.

Accounting policy

Loans and borrowings are initially measured at fair value, net of transaction costs incurred and are subsequently carried at amortized cost and updated using the effective interest rate method. Any difference between the proceeds (net of transaction costs) and the redemption value is recognized in the Income statement over the period of the loan, using the effective interest rate method. The fees paid in obtaining the loan are recognized as transaction costs.

Loans and borrowing costs are capitalized as part of property, plants and equipment if those costs are directly related to a qualified asset. The capitalization occurs until the qualified asset is ready for its intended use. The average capitalization rate is 22%. Borrowing costs that are not capitalized are recognized in the income statement in the period in which they are incurred.

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21. Liabilities related to associates and joint ventures

In March 2016 Samarco and its shareholders, Vale S.A. and BHP Billiton Brasil Ltda. (BHPB), entered into an Agreement (Framework Agreement) with the Brazilian federal government, the two Brazilian states (Espírito Santo and Minas Gerais) and other governmental authorities, in connection with the lawsuit related to the Samarco dam failure (Note 27), in order to implement the programs for remediation and compensation of the areas and communities affected.

The Framework Agreement has a 15-year term, renewable for successive one-year periods until all the obligations under the Framework Agreement have been satisfied.

Under the Framework Agreement, Samarco, Vale S.A. and BHPB have established a foundation (Fundação Renova or Foundation) to develop and implement social and economic remediation and compensation, to be funded by Samarco. To the extent that Samarco does not meet its funding obligations to the foundation, each of Vale S.A. and BHPB will provide, under the terms of the Framework Agreement, funds to the Foundation in proportion to its 50% equity interest in Samarco.

As the consequence of the dam failure, governmental authorities ordered the suspension of Samarco s operations.

Due to the uncertainties regarding Samarco s future cash flow, Vale S.A. maintains a provision for the obligation to comply with the reparation and compensation programs under the Framework Agreement (pro rata to its proportional equity interest in Samarco). The movements in the provisions are as follows:

	2017	2016
Balance at January 1st,	**3,511**	
Additions / Provision recognized	128	3,733
Payments	(941)	(461)
Interest accretion	598	239
Balance at December 31,	**3,296**	**3,511**
Current liabilities	1,080	951
Non-current liabilities	2,216	2,560
Liabilities	**3,296**	**3,511**

In addition to the provision above, Vale S.A. made available in the year ended December 31, 2017 the amount of R$452, which was fully used to fund Samarco s working capital and was recognized in Vale s income statement as Impairment and other results in associates and joint ventures . Vale S.A intends to make available until the first half of 2018 up to R$159 to Samarco to support its working capital requirements,

without any binding obligation to Samarco in this regard. Such amounts will be released by the shareholders simultaneously and pursuant to the same terms and conditions, subject to the fulfillment of certain milestones.

The summarized financial information of Samarco are as follows:

	December 31, 2017	December 31, 2016
Current assets	220	536
Non-current assets	19,901	19,484
Total assets	**20,121**	**20,020**
Current liabilities	18,132	15,811
Non-current liabilities	11,996	11,131
Total liabilities	**30,128**	**26,942**
Negative reserves	**(10,007)**	**(6,922)**
Loss	**(3,062)**	**(3,362)**

Under Brazilian legislation and the terms of the joint venture agreement, Vale does not have an obligation to provide funding to Samarco. Therefore, Vale s investment in Samarco was impaired in full and no provision was recognized in relation to the Samarco s negative reserves.

The contingencies related to the Samarco dam failure are disclosed in note 27.

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Critical accounting estimates and judgments

The provision requires the use of assumptions that may be mainly affected by: (i) changes in scope of work required under the Framework Agreement as result of further technical analysis and the ongoing negotiations with the Federal Prosecution Office, (ii) resolution of uncertainty in respect of the resumption of Samarco s operations; (iii) updates in the discount rate; and (iv) resolution of existing and potential legal claims. As a result, future expenditures may differ from the amounts currently provided and changes to key assumptions could result in a material impact to the amount of the provision in future reporting periods. At each reporting period, Vale S.A. will reassess the key assumptions used by Samarco in the preparation of the projected cash flows and will adjust the provision, if required.

22. Financial instruments classification

The Company classifies its financial instruments in accordance with the purpose for which they were acquired, and determines the classification and initial recognition according to the following categories:

	Consolidated					
	December 31, 2017			December 31, 2016		
	Loans and receivables or amortized cost	At fair value through profit or loss	Total	Loans and receivables or amortized cost	At fair value through profit or loss	Total
Financial assets						
Current						
Cash and cash equivalents	14,318		14,318	13,891		13,891
Financial investments	61		61	59		59
Derivative financial instruments		351	351		892	892
Accounts receivable	8,602		8,602	11,937		11,937
Related parties	6,277		6,277			
	29,258	**351**	**29,609**	**25,887**	**892**	**26,779**
Non-current						
Derivative financial instruments		1,497	1,497		1,454	1,454
Loans	498		498	587		587
Related parties	8,695		8,695			
	9,193	**1,497**	**10,690**	**587**	**1,454**	**2,041**
Total of financial assets	**38,451**	**1,848**	**40,299**	**26,474**	**2,346**	**28,820**
Financial liabilities						
Current						
Suppliers and contractors	13,367		13,367	11,830		11,830
Derivative financial instruments		344	344		1,349	1,349
Loans and borrowings	5,633		5,633	5,410		5,410
Related parties	893		893	1,150		1,150
	19,893	**344**	**20,237**	**18,390**	**1,349**	**19,739**

Non-current						
Derivative financial instruments		2,269	2,269		3,991	3,991
Loans and borrowings	68,759		68,759	90,154		90,154
Related parties	3,226		3,226	287		287
Participative stockholders debentures		4,080	4,080		2,526	2,526
	71,985	**6,349**	**78,334**	**90,441**	**6,517**	**96,958**
Total of financial liabilities	**91,878**	**6,693**	**98,571**	**108,831**	**7,866**	**116,697**

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	Parent company					
	December 31, 2017			December 31, 2016		
	Loans and receivables or amortized cost	At fair value through profit or loss	Total	Loans and receivables or amortized cost	At fair value through profit or loss	Total
Financial assets						
Current						
Cash and cash equivalents	1,876		1,876	1,203		1,203
Financial investments	4		4	4		4
Derivative financial instruments		199	199		338	338
Accounts receivable	9,560		9,560	26,223		26,223
Related parties	206		206	323		323
	11,646	**199**	**11,845**	**27,753**	**338**	**28,091**
Non-current						
Derivative financial instruments		1,268	1,268		1,304	1,304
Loans	18		18	114		114
Related parties	579		579	760		760
	597	**1,268**	**1,865**	**874**	**1,304**	**2,178**
Total of financial assets	**12,243**	**1,467**	**13,710**	**28,627**	**1,642**	**30,269**
Financial liabilities						
Current						
Suppliers and contractors	7,503		7,503	6,743		6,743
Derivative financial instruments		311	311		1,033	1,033
Loans and borrowings	4,378		4,378	4,171		4,171
Related parties	4,102		4,102	8,923		8,923
	15,983	**311**	**16,294**	**19,837**	**1,033**	**20,870**
Non-current						
Derivative financial instruments		2,113	2,113		3,427	3,427
Loans and borrowings	28,966		28,966	47,877		47,877
Related parties	48,762		48,762	50,849		50,849
Participative stockholders debentures		4,080	4,080		2,526	2,526
	77,728	**6,193**	**83,921**	**98,726**	**5,953**	**104,679**
Total of financial liabilities	**93,711**	**6,504**	**100,215**	**118,563**	**6,986**	**125,549**

The classification of financial assets and liabilities by currencies are as follows:

	Consolidated December 31, 2017					
	R$	US$	CAD	EUR	Others currencies	Total
Financial assets						
Current						
Cash and cash equivalents	5,921	7,924	159	36	278	14,318

Financial investments	3	58				61
Derivative financial instruments	199	152				351
Accounts receivable	813	7,723	20		46	8,602
Related parties		6,277				6,277
	6,936	**22,134**	**179**	**36**	**324**	**29,609**
Non-current						
Derivative financial instruments	1,269	228				1,497
Loans	17	481				498
Related parties		8,695				8,695
	1,286	**9,404**				**10,690**
Total of financial assets	**8,222**	**31,538**	**179**	**36**	**324**	**40,299**
Financial liabilities						
Current						
Suppliers and contractors	8,150	3,665	1,277	162	113	13,367
Derivative financial instruments	314	30				344
Loans and borrowings	2,541	2,911	57	124		5,633
Related parties		893				893
	11,005	**7,499**	**1,334**	**286**	**113**	**20,237**
Non-current						
Derivative financial instruments	2,110	159				2,269
Loans and borrowings	11,178	53,125	685	3,771		68,759
Related parties	258	2,968				3,226
Participative stockholders debentures	4,080					4,080
	17,626	**56,252**	**685**	**3,771**		**78,334**
Total of financial liabilities	**28,631**	**63,751**	**2,019**	**4,057**	**113**	**98,571**

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	Consolidated December 31, 2016					
	R$	US$	CAD	EUR	Others currencies	Total
Financial assets						
Current						
Cash and cash equivalents	3,132	9,448	147	183	981	13,891
Financial investments	4	55				59
Derivative financial instruments	339	553				892
Accounts receivable	1,098	10,787		3	49	11,937
	4,573	**20,843**	**147**	**186**	**1,030**	**26,779**
Non-current						
Derivative financial instruments	1,304	150				1,454
Loans	114	313	160			587
	1,418	**463**	**160**			**2,041**
Total of financial assets	**5,991**	**21,306**	**307**	**186**	**1,030**	**28,820**
Financial liabilities						
Current						
Suppliers and contractors	6,181	3,090	1,995	313	251	11,830
Derivative financial instruments	1,033	316				1,349
Loans and borrowings	2,450	2,696	55	209		5,410
Related parties		1,150				1,150
	9,664	**7,252**	**2,050**	**522**	**251**	**19,739**
Non-current						
Derivative financial instruments	3,427	564				3,991
Loans and borrowings	19,128	64,498	681	5,847		90,154
Related parties	287					287
Participative stockholders debentures	2,526					2,526
	25,368	**65,062**	**681**	**5,847**		**96,958**
Total of financial liabilities	**35,032**	**72,314**	**2,731**	**6,369**	**251**	**116,697**

	Parent company December 31, 2017			
	R$	US$	EUR	Total
Financial assets				
Current				
Cash and cash equivalents	1,836	40		1,876
Financial investments	4			4
Derivative financial instruments	199			199
Accounts receivable	1,094	8,459	7	9,560
Related parties		206		206
	3,133	**8,705**	**7**	**11,845**
Non-current				
Derivative financial instruments	1,268			1,268
Loans	18			18
Related parties		579		579
	1,286	**579**		**1,865**
Total of financial assets	**4,419**	**9,284**	**7**	**13,710**
Financial liabilities				

Current				
Suppliers and contractors	7,276	163	64	7,503
Derivative financial instruments	311			311
Loans and borrowings	2,228	2,026	124	4,378
Related parties	822	3,280		4,102
	10,637	**5,469**	**188**	**16,294**
Non-current				
Derivative financial instruments	2,113			2,113
Loans and borrowings	10,276	15,713	2,977	28,966
Related parties	2,508	46,254		48,762
Participative stockholders debentures	4,080			4,080
	18,977	**61,967**	**2,977**	**83,921**
Total of financial liabilities	**29,614**	**67,436**	**3,165**	**100,215**

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	Parent company December 31, 2016			
	R$	US$	EUR	Total
Financial assets				
Current				
Cash and cash equivalents	1,185	18		1,203
Financial investments	4			4
Derivative financial instruments	338			338
Accounts receivable	1,082	25,135	**6**	26,223
Related parties	118	205		323
	2,727	**25,358**	**6**	**28,091**
Non-current				
Derivative financial instruments	1,304			1,304
Loans	114			114
Related parties		760		760
	1,418	**760**		**2,178**
Total of financial assets	**4,145**	**26,118**	**6**	**30,269**
Financial liabilities				
Current				
Suppliers and contractors	6,365	603	148	7,116
Derivative financial instruments	1,033			1,033
Loans and borrowings	2,149	1,815	207	4,171
Related parties	131	8,792		8,923
	9,678	**11,210**	**355**	**21,243**
Non-current				
Derivative financial instruments	3,427			3,427
Loans and borrowings	17,993	24,726	5,158	47,877
Related parties	3,694	47,155		50,849
Participative stockholders debentures	2,526			2,526
	27,640	**71,881**	**5,158**	**104,679**
Total of financial liabilities	**37,318**	**83,091**	**5,513**	**125,922**

23. Fair value estimate

Due to the short-term cycle, it is assumed that the fair value of cash and cash equivalents balances, financial investments, accounts receivable and accounts payable approximate their book values. For the measurement and determination of fair value, the Company uses various methods including market, income or cost approaches, in order to estimate the value that market participants would use when pricing the asset or liability. The financial assets and liabilities recorded at fair value are classified and disclosed in accordance with the following levels:

Level 1 - Unadjusted quoted prices on an active, liquid and visible market for identical assets or liabilities that are accessible at the measurement date;

Level 2 - Quoted prices (adjusted or unadjusted) for identical or similar assets or liabilities on active markets; and

Level 3 - Assets and liabilities, for which quoted prices, do not exist, or where prices or valuation techniques are supported by little or no market activity, unobservable or illiquid.

a) Assets and liabilities measured and recognized at fair value:

	Consolidated					
	December 31, 2017			December 31, 2016		
	Level 2	Level 3	Total	Level 2	Level 3	Total
Financial assets						
Derivative financial instruments	954	894	1,848	1,319	1,027	2,346
Total	**954**	**894**	**1,848**	**1,319**	**1,027**	**2,346**
Financial liabilities						
Derivative financial instruments	1,923	690	2,613	3,877	1,463	5,340
Participative stockholders debentures	4,080		4,080	2,526		2,526
Total	**6,003**	**690**	**6,693**	**6,403**	**1,463**	**7,866**

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	Parent company					
	December 31, 2017			December 31, 2016		
	Level 2	Level 3	Total	Level 2	Level 3	Total
Financial assets						
Derivative financial instruments	573	894	1,467	615	1,027	1,642
Total	**573**	**894**	**1,467**	**615**	**1,027**	**1,642**
Financial liabilities						
Derivative financial instruments	1,734	690	2,424	2,997	1,463	4,460
Participative stockholders debentures	4,080		4,080	2,526		2,526
Total	**5,814**	**690**	**6,504**	**5,523**	**1,463**	**6,986**

There were no transfers between Level 1 and Level 2, or between Level 2 and Level 3 in the year ended December 31, 2017.

The following table presents the changes in Level 3 assets and liabilities for the year ended December 31, 2017:

	Consolidated		Parent company	
	Derivative financial instruments			
	Financial assets	Financial liabilities	Financial assets	Financial liabilities
Balance at December 31, 2016	**1,027**	**1,463**	**1,027**	**1,463**
Gain recognized in income statement	(133)	(773)	(133)	(773)
Balance at December 31, 2017	**894**	**690**	**894**	**690**

Methods and techniques of evaluation

i) Derivative financial instruments

Financial instruments are evaluated by calculating their present value through the use of instrument yield curves at the closing dates. The curves and prices used in the calculation for each group of instruments are detailed in the market curves .

The pricing method used for European options is the Black & Scholes model. In this model, the fair value of the derivative is a function of the volatility in the price of the underlying asset, the exercise price of the option, the interest rate and period to maturity. In the case of options which income is a function of the average price of the underlying asset over the period of the option, the Company uses Turnbull & Wakeman model. In this model, in addition to the factors that influence the option price in the Black-Scholes model, the formation period of the average price is also considered.

In the case of swaps, both the present value of the assets and liability are estimated by discounting the cash flow by the interest rate of the currency in which the swap is denominated. The difference between the present value of assets and liability of the swap generates its fair value.

For the TJLP swaps, the calculation of the fair value assumes that TJLP is constant, that is the projections of future cash flow in Brazilian Reais are made on the basis of the last TJLP disclosed.

Contracts for the purchase or sale of products, inputs and costs of selling with future settlement are priced using the forward yield curves for each product. Typically, these curves are obtained on the stock exchanges where the products are traded, such as the London Metals Exchange (LME), the Commodity Exchange (COMEX) or other providers of market prices. When there is no price for the desired maturity, Vale uses an interpolation between the available maturities.

The fair value for derivatives are within level 3 are measured using discounted cash flows and option model valuation techniques with main unobservable inputs discount rates, stock prices and commodities prices.

Participative stockholders debentures - Consist of the debentures issued during the privatization process (note 13), which fair values are measured based on the market approach. Reference prices are available on the secondary market.

Critical accounting estimates and judgments

The fair values of financial instruments that are not traded in active markets are determined using valuation techniques. Vale uses its own judgment to choose between the various methods. Assumptions are based on the market conditions, at the end of the year.

An analysis of the impact if actual results are different from management s estimates is present on note 33 (sensitivity analysis).

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b) Fair value of financial instruments not measured at fair value

The fair value estimate for level 1 is based on market approach considering the secondary market contracts. For loans allocated to level 2, the income approach is adopted and the fair value for both fixed-indexed rate debt and floating rate debt is determined on a discounted cash flows basis using LIBOR future values and Vale s bonds curve.

The fair values and carrying amounts of loans and borrowings (net of interest) are as follows:

	Consolidated				Parent company			
	Balance	Fair value	Level 1	Level 2	Balance	Fair value	Level 1	Level 2
Financial liabilities								
December 31, 2017								
Debt principal	72,628	76,377	49,406	26,971	32,199	34,088	11,213	22,875
December 31, 2016								
Debt principal	93,508	89,218	45,216	44,002	50,691	50,658	12,166	38,492

24. Derivative financial instruments

a) Derivatives effects on statement of financial position

	Consolidated Assets			
	December 31, 2017		December 31, 2016	
	Current	Non-current	Current	Non-current
Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	125		429	3
IPCA swap	30	271	22	199
Eurobonds swap		89		
Pré-dolar swap	73	106	3	75
	228	**466**	**454**	**277**
Commodities price risk				
Nickel	73	10	13	7
Bunker oil	50		425	

	123	**10**	**438**	**7**
Others		1,021		1,170
		1,021		**1,170**
Total	**351**	**1,497**	**892**	**1,454**

	Consolidated Liabilities			
	December 31, 2017		December 31, 2016	
	Current	Non-current	Current	Non-current
Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	314	1,356	955	2,078
IPCA swap		136	65	186
Eurobonds swap	13		24	147
Euro Forward			149	
Pré-dolar swap	17	79	16	104
	344	**1,571**	**1,209**	**2,515**
Commodities price risk				
Nickel			16	7
Bunker oil			124	
			140	7
Others		698		1,469
		698		**1,469**
Total	**344**	**2,269**	**1,349**	**3,991**

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	Parent company Assets			
	December 31, 2017		December 31, 2016	
	Current	Non-current	Current	Non-current
Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	104		322	3
IPCA swap	21	273	13	199
Pré-dolar swap	74	102	3	75
	199	**375**	**338**	**277**
Others		893		1,027
		893		**1,027**
Total	**199**	**1,268**	**338**	**1,304**

	Parent company Liabilities			
	December 31, 2017		December 31, 2016	
	Current	Non-current	Current	Non-current
Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	295	1,283	952	1,777
IPCA swap		59	65	83
Pré-dolar swap	16	81	16	104
	311	**1,423**	**1,033**	**1,964**
Others		690		1,463
		690		**1,463**
Total	**311**	**2,113**	**1,033**	**3,427**

b) Effects of derivatives on the income statement, cash flow and other comprehensive income

	Consolidated Year ended December 31								
	Gain (loss) recognized in the income statement			Financial settlement inflows (outflows)			Gain (loss) recognized in other comprehensive income		
	2017	2016	2015	2017	2016	2015	2017	2016	2015
Derivatives not designated as hedge accounting									
Foreign exchange and interest rate risk									
CDI & TJLP vs. US$ fixed and floating rate swap	483	2,897	(3,644)	(572)	(1,689)	(867)			

IPCA swap	132	257	(167)	(65)	(78)	20		
Eurobonds swap	122	(75)	(353)	(121)	(524)	(39)		
Euro forward	144	(152)						
Pré-dolar swap	116	241	(462)	(6)	(361)	(158)		
	997	**3,168**	**(4,626)**	**(764)**	**(2,652)**	**(1,044)**		
Commodities price risk								
Nickel	97	(158)	(166)	11	(113)	(212)		
Bunker oil	(258)	911	(2,662)	**(10)**	(2,829)	(866)		
	(161)	**753**	**(2,828)**	**1**	**(2,942)**	**(1,078)**		
Others	**624**	**261**	**(494)**					
Derivatives designated as cash flow hedge accounting								
Bunker oil			(1,483)			(1,513)		1,409
Foreign exchange		**(10)**	(136)		**(10)**	(136)	10	66
		(10)	**(1,619)**		**(10)**	**(1,649)**	**10**	**1,475**
Total	**1,460**	**4,172**	**(9,567)**	**(763)**	**(5,604)**	**(3,771)**	**10**	**1,475**

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	Parent company Year ended December 31					
	Gain (loss) recognized in the income statement		Financial settlement inflows (outflows)		Gain (loss) recognized in other comprehensive income	
	2017	2016	2017	2016	2017	2016
Derivatives not designated as hedge accounting						
Foreign exchange and interest rate risk						
CDI & TJLP vs. US$ fixed and floating rate swap	423	2,685	(505)	(1,773)		
IPCA swap	106	185	(65)	(81)		
Pré-dolar swap	116	241	(7)	(361)		
	645	**3,111**	**(577)**	**(2,215)**		
Others	**640**	**222**				
Derivatives designated as cash flow hedge accounting						
Foreign exchange						10
						10
Total	**1,285**	**3,333**	**(577)**	**(2,215)**		**10**

During 2015, the Company implemented bunker oil purchase cash flows protection program and recognized as cost of goods sold and services rendered and financial expense the amounts of R$1,483 and R$8,084, respectively. In 2016, all derivatives impacts were charged to financial results.

The maturity dates of the derivative financial instruments are as follows:

	Last maturity dates
Currencies and interest rates	January 2024
Bunker oil	December 2017
Nickel	December 2019
Others	December 2027

c) Hedge in foreign operations

Implementation of net investment hedge

As at January 1, 2017, Vale S.A., which the functional currency is Reais, designated its debts in US$ and Euro, as an instrument in a hedge of its investment in foreign operations (Vale International S.A. and Vale International Holding GmbH; hedging objects) to mitigate part of the foreign exchange risk on financial statements.

At December 31, 2017 the carrying value of the designated debts are R$17,542 (US$5,303 million) and R$2,977 (EUR750 million). The foreign exchange loss of R$469 (R$310 net of taxes), was recognized in the Cumulative translation adjustments in stockholders equity for the year ended December 31, 2017. This hedge was highly effective throughout the year ended on December 31, 2017.

Accounting policy

The Company uses financial instruments to hedge its exposure to certain market risks arising from operational, financing and investing activities. Derivatives are included within financial assets or liabilities at fair value through profit or loss unless they are designated as effective hedging instruments.

At the beginning of the hedge operations, the Company documents the type of hedge, the relationship between the hedging instrument and hedged items, its risk management objective and strategy for undertaking hedge operations. The Company also documents, both at hedge inception and on an ongoing basis that the hedge is expected to continue to be highly effective. The Company adopts the hedge accounting procedure and designates certain derivatives as either:

Cash flow hedge - The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognized in equity within Cumulative translation adjustments . The gain or loss relating to the ineffective portion is recognized immediately in the income statement. When a hedging instrument expires or is sold, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity at that time remains in equity and is recognized in profit or loss when the transaction is recognized in the income statement.

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Net investment hedge - Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Any gain or loss on the hedging instrument relating to the effective portion of the hedge is recognized in equity within Cumulative translation adjustments . The gain or loss relating to the ineffective portion is recognized immediately in the income statement. Gains and losses accumulated in equity are included in the statement of income when the foreign operation is partially or fully disposed of or sold.

Derivatives at fair value through profit or loss - Certain derivative instruments do not qualify for hedge accounting. Changes in the fair value of any of these derivative instruments are recognized immediately in the income statement.

The Company has performed an assessment of the IFRS 9 - Financial instruments and the expected impacts are detailed in note 2e.

Additional information about derivatives financial instruments

In millions of Brazilian reais, except as otherwise stated

The risk of the derivatives portfolio is measured using the delta-Normal parametric approach, and considers that the future distribution of the risk factors and its correlations tends to present the same statistic properties verified in the historical data. The value at risk estimate considers a 95% confidence level for a one-business day time horizon.

There was no cash amount deposited as margin call regarding derivative positions on December 31, 2017.

The following tables detail the derivatives positions for Vale and its controlled companies as of December 31, 2017, with the following information: notional amount, fair value including credit risk, gains or losses in the period, value at risk and the fair value breakdown by year of maturity.

a) Foreign exchange and interest rates derivative positions

(i) Protection programs for the R$ denominated debt instruments

In order to reduce cash flow volatility, swap transactions were implemented to convert into US$ the cash flows from certain debt instruments denominated in R$ with interest rates linked mainly to CDI, TJLP and IPCA. In those swaps, Vale pays fixed or floating rates in US$ and receives payments in R$ linked to the interest rates of the protected debt instruments.

The swap transactions were negotiated over-the-counter and the protected items are the cash flows from debt instruments linked to R$. These programs transform into US$ the obligations linked to R$ to achieve a currency offset in the Company s cash flows, by matching its receivables - mainly linked to US$ - with its payables.

	Notional						Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year		
Flow	**December 31, 2017**		**December 31, 2016**		**Index**	**Average rate**	**December 31, 2017**	**December 31, 2016**	**December 31, 2017**	**December 31, 2017**	**2018**	**2019**	**2020+**
CDI vs. US$ fixed rate swap							**(108)**	**(396)**	**44**	**49**	**90**	**(78)**	**(120)**
Receivable	R$	3,540	R$	6,289	CDI	101.33%							
Payable	US$	1,104	US$	2,105	Fix	3.20%							
TJLP vs. US$ fixed rate swap							**(1,262)**	**(2,027)**	**(609)**	**122**	**(265)**	**(809)**	**(188)**
Receivable	R$	2,982	R$	4,360	TJLP +	1.25%							
Payable	US$	1,323	US$	2,030	Fix	1.55%							
TJLP vs. US$ floating rate swap							**(175)**	**(179)**	**(7)**	**11**	**(14)**	**(161)**	
Receivable	R$	216	R$	242	TJLP +	0.88%							
Payable	US$	123	US$	140	Libor +	-1.23%							
R$ fixed rate vs. US$ fixed rate swap							**80**	**(42)**	**(6)**	**88**	**58**	**44**	**(22)**
Receivable	R$	1,158	R$	1,031	Fix	8.02%							
Payable	US$	385	US$	343	Fix	-0.28%							
IPCA vs. US$ fixed rate swap							**(113)**	**(167)**	**(0)**	**29**	**23**	**(51)**	**(85)**
Receivable	R$	1,000	R$	1,000	IPCA +	6.55%							
Payable	US$	434	US$	434	Fix	3.98%							
IPCA vs. CDI swap							**280**	**136**	**(65)**	**1**	**8**	**(1)**	**273**
Receivable	R$	1,350	R$	1,350	IPCA +	6.62%							
Payable	R$	1,350	R$	1,350	CDI	98.58%							

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(ii) Protection program for EUR denominated debt instruments

In order to reduce the cash flow volatility, swap and forward transactions were implemented to convert into US$ the cash flows from certain debt instruments issued in Euros by Vale. In those swaps, Vale receives fixed rates in EUR and pays fixed rates in US$. In those forwards only the principal amount of the debt is converted from EUR to US$.

The swap and forward transactions were negotiated over-the-counter and the protected items are the cash flows from debt instruments linked to EUR. The financial settlement inflows/outflows are offset by the protected items losses/gains due to EUR/US$ exchange rate.

	Notional				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year		
Flow	December 31, 2017	December 31, 2016	Index	Average rate	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2017	2018	2019	2020+
EUR fixed rate vs. US$ fixed rate swap					**76**	**(170)**	**(22)**	**19**	**(14)**	**(12)**	**102**
Receivable	£ 500	£ 500	Fix	3.75%							
Payable	US$ 613	US$ 613	Fix	4.29%							

	Notional				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
Flow	December 31, 2017	December 31, 2016	Bought/ Sold	Average rate (USD/EUR)	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2017	2018
Forward	£ 0	£ 500	B	1.143		**(149)**	**(99)**		

b) Commodities derivative positions

(i) Bunker Oil purchase cash flows protection program

In order to reduce the impact of bunker oil price fluctuation on maritime freight hiring/supply and, consequently, reducing the company s cash flow volatility, bunker oil derivatives were implemented, through zero cost-collars.

The derivative transactions were negotiated over-the-counter and the protected item is part of the Vale s costs linked to bunker oil prices. The financial settlement inflows/outflows are offset by the protected items losses/gains due to bunker oil prices changes.

The contracts expired in 2017.

	Notional (ton)				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year
Flow	**December 31, 2017**	**December 31, 2016**	**Bought/ Sold**	**Average strike (US$/ton)**	**December 31, 2017**	**December 31, 2016**	**December 31, 2017**	**December 31, 2017**	**2018**
Bunker Oil protection									
Call options		2,856,000	B			424	6		
Put options		2,856,000	S			(45)			
Total						**379**	**6**		

As at December 31, 2016, excludes R$78, of transactions in which the financial settlement occurs subsequently of the closing month.

(ii) Protection programs for base metals raw materials and products

In the operational protection program for nickel sales at fixed prices, derivatives transactions were implemented to convert into floating prices the contracts with clients that required a fixed price, in order to keep nickel revenues exposed to nickel price fluctuations. Those operations are usually implemented through the purchase of nickel forwards.

In the operational protection program for the purchase of raw materials and products, derivatives transactions were implemented, usually through the sale of nickel and copper forward or futures, in order to reduce the mismatch between the pricing period of purchases (concentrate, cathode, sinter, scrap and others) and the pricing period of the final product sales to the clients.

The derivative transactions are negotiated at London Metal Exchange or over-the-counter and the protected item is part of Vale s revenues and costs linked to nickel and copper prices. The financial settlement inflows/outflows are offset by the protected items losses/gains due to nickel and copper prices changes.

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Flow	Notional (ton) December 31 2017	Notional (ton) December 31 2016	Bought/ Sold	Average strike (US$/ton)	Fair value December 31, 2017	Fair value December 31, 2016	Financial Settlement Inflows (Outflows) December 31, 2017	Value at Risk December 31, 2017	Fair value by year 2017	Fair value by year 2018
Fixed prices sales protection										
Nickel forwards	9,621	11,615	B	10,253	80	(2)	12	12	70	10
Raw materials purchase protection										
Nickel forwards	292	134	S	11,597	(1.1)	0.4	0.1	0.4	(1.1)	
Copper forwards	79	441	S	6,941	(0.1)	(0.5)	(0.9)	0.0	(0.1)	
Total					**(1.2)**	**(0.1)**	**(0.8)**	**0.4**	**(1.2)**	

c) Wheaton Precious Metals Corp. warrants

The company owns warrants of Wheaton Precious Metals Corp. (WPM), a Canadian company with stocks negotiated in Toronto Stock Exchange and New York Stock Exchange. Such warrants configure American call options and were received as part of the payment regarding the sale of part of gold payable flows produced as a sub product from Salobo copper mine and some nickel mines in Sudbury.

Flow	Notional (quantity) December 31 2017	Notional (quantity) December 31 2016	Bought/ Sold	Average strike (US$/share)	Fair value December 31, 2017	Fair value December31, 2016	Financial Settlement Inflows (Outflows) December 31, 2017	Value at Risk December31, 2017	Fair value by year 2023
Call options	10,000,000	10,000,000	B	44	**128**	**144**		**13**	**128**

d) Debentures convertible into shares of Valor da Logística Integrada (VLI)

The company has debentures in which lenders have the option to convert the outstanding debt into a specified quantity of shares of VLI owned by the company.

Flow	Notional (quantity) December 31, 2017	Notional (quantity) December 31, 2016	Bought/ Sold	Average strike (R$/share)	Fair value December 31, 2017	Fair value December 31, 2016	Financial Settlement Inflows (Outflows) December 31, 2017	Value at Risk December 31, 2017	Fair value by year 2027
Conversion options	140,239	140,239	S	8,530	**(188)**	**(236)**		**10**	**(188)**

e) Options related to Minerações Brasileiras Reunidas S.A. (MBR) shares

The Company entered into a stock sale and purchase agreement that has options related to MBR shares. Mainly, the Company has the right to buy back this non-controlling interest in the subsidiary. Moreover, under certain restrict and contingent conditions, which are beyond the buyer s control, such as illegality due to changes in the law, the contract has a clause that gives the buyer the right to sell back its stake to the Company. It this case, the Company could settle through cash or shares.

Flow	Notional (quantity, in millions) December 31, 2017	Notional (quantity, in millions) December 31, 2016	Bought/ Sold	Average strike (R$/ação)	Fair value December 31, 2017	Fair value December 31, 2016	Financial Settlement Inflows (Outflows) December 31, 2017	Value at Risk December 31, 2017	Fair value by year 2018+
Options	2,139	2,139	B/S	1.7	**831**	**393**		**41**	**831**

f) Embedded derivatives in contracts

The Company has some nickel concentrate and raw materials purchase agreements in which there are provisions based on nickel and copper future prices behavior. These provisions are considered as embedded derivatives.

Flow	Notional (ton) December 31, 2017	Notional (ton) December 31, 2016	Bought/ Sold	Average strike (US$/ton)	Fair value December 31, 2017	Fair value December 31, 2016	Financial Settlement Inflows (Outflows) December 31, 2017	Value at Risk December 31, 2017	Fair value by year 2018
Nickel Forward	2,627	5,626	S	11,729	3	1		3	3
Copper Forward	2,718	3,684	S	6,808	0.1	5		1	0.1
Total					**3**	**6**		**4**	**3**

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The Company has also a natural gas purchase agreement in which there s a clause that defines that a premium can be charged if the Company s pellet sales prices trade above a pre-defined level. This clause is considered an embedded derivative.

	Notional (volume/month)				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year	
Flow	December 31, 2017	December 31, 2016	Bought/ Sold	Average strike (US$/ton)	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2017	2018	2019+
Call options	746,667	746,667	S	233	**(6)**	**(7)**		**4**	**(0)**	**(6)**

In August 2014 the Company sold part of its stake in Valor da Logística Integrada (VLI) to an investment fund managed by Brookfield Asset Management (Brookfield). The sales contract includes a clause that establishes, under certain conditions, a minimum return guarantee on Brookfield s investment. This clause is considered an embedded derivative, with payoff equivalent to that of a put option.

	Notional (quantity)				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year
Flow	December 31, 2017	December31, 2016	Bought / Sold	Average strike (R$/share)	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2017	2018+
Put option	1,105,070,863	1,105,070,863	S	3.86	**(439)**	**(593)**		**32**	**(439)**

For sensitivity analysis of derivative financial instruments, Financial counterparties ratings and market curves please see note 33.

25. Provisions

	Consolidated			
	Current liabilities		Non-current liabilities	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Payroll, related charges and other remunerations (i)	3,641	2,362		
Onerous contracts (note 19)	337	329	1,203	1,541
Environment Restoration	99	33	262	362
Asset retirement obligations (note 26)	289	154	10,191	8,055
Provisions for litigation (note 27)			4,873	2,734

Employee postretirement obligations (note 28)	244	225	6,714	6,038
Provisions	**4,610**	**3,103**	**23,243**	**18,730**

	Parent company			
	Current liabilities		Non-current liabilities	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Payroll, related charges and other remunerations (i)	2,541	1,649		
Environment Restoration	80	14	106	200
Asset retirement obligations (note 26)	210	71	1,793	1,571
Provisions for litigation (note 27)			4,219	1,944
Employee postretirement obligations (note 28)	73	58	782	681
Provisions	**2,904**	**1,792**	**6,900**	**4,396**

(i) Includes profit sharing provision R$2,490 and R$l,064 for the year ended December, 31 2017 and 2016, respectively. For the Parent Company, R$l,780 and R$638 for the year ended December 31, 2017 and 2016, respectively.

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26. Asset retirement obligations

Provision is made for expected costs for the closure of the mines and deactivation of the related mining assets. Changes in the provision for asset retirement obligations and long-term interest rates (per annum, used to discount these obligations to present value and to update the provisions) are as follows:

	Consolidated		Parent company	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Balance at beginning of the year	**8,209**	**9,659**	**1,642**	**1,374**
Interest expense	220	405	126	183
Settlements	(195)	(264)	(32)	(12)
Revisions on cash flows estimates	2,039	737	267	97
Translation adjustment	480	(1,160)		
Effect of discontinued operations				
Transfer to net assets held for sale	(273)	(1,168)		
Balance at end of the year	**10,480**	**8,209**	**2,003**	**1,642**
Current	289	154	210	71
Non-current	10,191	8,055	1,793	1,571
	10,480	**8,209**	**2,003**	**1,642**
Long-term interest rates (per annum)				
Brazil	5.34%	5.73%	5.34%	5.73%
Canada	0.57%	0.55%		
Other regions	0.72% - 6.13%	1.07% - 8.02%		

Accounting policy

When the provision is recognized, the corresponding cost is capitalized as part of property, plant and equipment and is depreciated over the useful life of the related mining asset, resulting in an expense recognized in the income statement.

The long-term liability is discounted at presented value using a long-term risk free discount rate applicable to the liability and the unwinds are recorded in the income statement and is reduced by payments for mine closure and decommissioning of mining assets.

The accrued amounts of these obligations are not deducted from the potential costs covered by insurance or indemnities.

Critical accounting estimates and judgments

Judgment is required to determine key assumptions used on the asset retirement obligation measurement such as, interest rate, cost of closure, useful life of the mining asset considering the current conditions of closure and the projected date of depletion of each mine. Any changes in these assumptions may significant impact the recorded provision. Therefore, the estimated costs for closure of the mining assets is deemed to be a critical accounting estimate. These estimates are annually reviewed.

27. Litigation

a) Provision for litigation

Vale is party to labor, civil, tax and other ongoing lawsuits, at administrative and court levels. Provisions for losses resulting from lawsuits are estimated and updated by the Company, based on analysis from the Company s legal consultants.

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Changes in provision for litigation are as follows:

	Consolidated				
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2015	**1,052**	**309**	**1,771**	**78**	**3,210**
Additions	86	347	830	7	1,270
Reversals	(127)	(224)	(412)	(20)	(783)
Payments	(410)	(212)	(363)	(11)	(996)
Indexation and interest	155	68	28	(10)	241
Translation adjustment	(2)		2	1	1
Effect of discontinued operations					
Net movements of year	1	(5)	28	(1)	23
Transfers to net assets held for sale	(60)	(11)	(142)	(19)	(232)
Balance at December 31, 2016	**695**	**272**	**1,742**	**25**	**2,734**
Additions	123	168	781	19	1,091
Reversals	(54)	(116)	(375)	(6)	(551)
Payments	(372)	(8)	(336)	(2)	(718)
Indexation and interest	41	116	112	(2)	267
Translation adjustment	37				37
Merger of Valepar (note 29) (i)	2,013				2,013
Balance at December 31, 2017	**2,483**	**432**	**1,924**	34	**4,873**

	Parent company				
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2015	**332**	**241**	**1,562**	**55**	**2,190**
Additions	44	346	804	8	1,202
Reversals	(50)	(202)	(407)	(19)	(678)
Payments	(275)	(206)	(337)	(11)	(829)
Indexation and interest	2	68	(1)	(10)	59
Balance at December 31, 2016	**53**	**247**	**1,621**	**23**	**1,944**
Additions	75	82	730	12	899
Reversals	(4)	(104)	(362)	(6)	(476)
Payments	(78)	(27)	(323)	(2)	(430)
Indexation and interest	58	110	104	(3)	269
Merger of Valepar (note 29) (i)	2,013				2,013
Balance at December 31, 2017	**2,117**	**308**	**1,770**	**24**	**4,219**

(i) refers to litigations of PIS/COFINS of interest on capital.

i. **Provisions for labor litigation** - Consist of lawsuits filed by employees and service suppliers, related to employment relationships mainly in Brazil. The most recurring claims are related to payment of overtime, hours in itinerary, and health and safety. Also the social security in Brazil (INSS) contingencies are related to legal and administrative disputes between INSS and Vale due to applicability of compulsory social security charges.

b) Contingent liabilities

Contingent liabilities of administrative and judicial claims, with expectation of loss classified as possible, and for which the recognition of a provision is not considered necessary by the Company, based on legal advice are as follows:

	Consolidated		Parent company	
	December 31, 2017	December 31, 2016	December 31, 2017	December 31, 2016
Tax litigation (i)	29,244	24,886	26,510	21,418
Civil litigation	5,371	4,936	3,957	3,857
Labor litigation	6,455	7,885	6,118	7,476
Environmental litigation	7,242	6,133	7,058	5,943
Total	**48,312**	**43,840**	**43,643**	**38,694**

(i) R$613 from merger of Valepar S.A.

i - Tax litigation - Our most significant tax-related contingent liabilities result from disputes related to (i) the deductibility of our payments of social security contributions on the net income (CSLL) from our taxable income, (ii) challenges of certain tax credits we deducted from our PIS and COFINS payments, (iii) assessments of CFEM (royalties), and (iv) charges of value-added tax on services and circulation of goods (ICMS), especially relating to certain tax credits we claimed from the sale and transmission of energy, ICMS charges to anticipate the payment in the entrance of goods to Pará State and ICMS/penalty charges on our own transportation. The changes reported in the period resulted, mainly, from additions of other periods to the existing proceedings related to PIS, COFINS, ICMS, CFEM; as well as the inclusion of Valepar S.A. proceedings and the application interest and inflation adjustments to the disputed amounts.

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ii - **Civil litigation** - Most of those claims have been filed by suppliers for indemnification under construction contracts, primarily relating to certain alleged damages, payments and contractual penalties. A number of other claims related to contractual disputes regarding inflation index.

iii - **Labor litigation** - Represents individual claims by employees and service providers, primarily involving demands for additional compensation for overtime work, time spent commuting or health and safety conditions; and the Brazilian federal social security administration (INSS) regarding contributions on compensation programs based on profits.

iv - Environmental litigation - The most significant claims concern alleged procedural deficiencies in licensing processes, noncompliance with existing environmental licenses or damage to the environment.

c) Judicial deposits

In addition to the provisions and contingent liabilities, the Company is required by law to make judicial deposits to secure a potential adverse outcome of certain lawsuits. These court-ordered deposits are monetarily adjusted and reported as non-current assets until a judicial decision to draw the deposit occurs.

	Consolidated		Parent company	
	December 31, 2017	**December 31, 2016**	**December 31, 2017**	**December 31, 2016**
Tax litigation (i)	3,971	630	3,864	499
Civil litigation	199	202	48	53
Labor litigation	2,359	2,251	2,156	2,078
Environmental litigation	42	52	42	51
Total	**6,571**	**3,135**	**6,110**	**2,681**

(i) Includes R$3,034 related to the merger of Valepar (note 29).

d) Contingencies related to Samarco accident

(i) Public civil claim filed by the Federal Government and others

The federal government, the two Brazilian states affected by the failure (Espirito Santo and Minas Gerais) and other governmental authorities have initiated a public civil lawsuit against Samarco and its shareholders, Vale S.A. and BHPB, with an estimated value indicated by the plaintiffs of R$20.2 billion.

The Framework Agreement signed in March 2016, was ratified by the Federal Regional Court (TRF) in May 2016. This ratification was suspended by the Superior Court of Justice (STJ) in June 2016 and resulted in the restoration of the public civil claim, and maintained other measures, such as: (a) the prohibition of the defendants from transferring or conveying any of their interest in its Brazilian iron ore concessions, without, however, limiting their production and commercial activities and; (b) the order of the deposit with the court of R$1.2 billion by January 2017, which was provisionally replaced by the guarantees provided for under the agreements with Federal Prosecution Office (MPF), as detailed in the item (ii) below.

(ii) Public civil action filed by Federal Prosecution Office

On May 3, 2016, the Federal Prosecution Office (MPF) filed a public civil lawsuit against Samarco and its shareholders and presented several demands, including: (i) the adoption of measures for mitigating the social, economic and environmental impacts resulting from the dam failure and other emergency measures; (ii) the payment of compensation to the community; and (iii) payments for the collective moral damage. The action value indicated by the MPF is R$155 billion.

In January 2017 Samarco, Vale S.A. and BHPB entered into two preliminary agreements with the MPF.

The first agreement (First Agreement) aims to outline the process and timeline for negotiations of a Final Agreement (Final Agreement), initially expected to occur by June 30, 2017 and extended by April 20, 2018. This First Agreement establishes a timeline and actions to set the ground for conciliation of two public civil lawsuits in the amounts of R$20.2 billion and R$155 billion, mentioned above, which are actually suspended.

In addition, the First Agreement provides for: (a) the appointment of experts to give support the Federal Prosecutors and paid for by the companies to conduct a diagnosis and monitor the progress of the programs under the Framework Agreement, and (b) holding at public hearings and the engagement of technical assistance to the affected people, in order to allow these communities to take part in the definition of the content of the Final Agreement.

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Samarco, Vale S.A. and BHPB has agreed to provide a guarantee for fulfillment of the obligations regarding the financing and payment of the socio-environmental and socio-economic remediation programs resulting from the Fundão dam failure, pursuant to the two public civil actions, until the signing of the Final Agreement, amounting to R$2.2 billion, of which (i) R$100 in financial investments; (ii) R$1.3 billion in insurance bonds; and (iii) R$800 in assets of Samarco. If, by April 20, 2018, the negotiations have not been completed, the Federal Prosecutor s Office may require that the Court re-institute the order for the deposit of R$1.2 billion in relation to the R$20.2 billion public civil action and R$7.7 billion related R$ 155 billion mentioned above, which are actually suspended.

On March 16, 2017, the 12th Judicial Federal Court of Belo Horizonte partially ratified the First Agreement, which decision includes: (i) ratification of the engagement of experts to perform a socio-environmental impact assessment and assessment of programs under the Framework Agreement and a period for the companies to engage an expert to perform the socio-economic impact assessment; (ii) the consolidation and suspension of related claims aiming to avoid contradictory or conflicting decisions and to establish a unified judicial procedure in order for the parties to be able to reach a final agreement; (iii) accepted the guarantees proposed by Samarco and its shareholders under the Preliminary Agreement on a temporary basis.

In addition, the Second Agreement (Second Agreement) was signed on January 19, 2017, which establishes a timetable to make funds available to remediate the social, economic and environmental damages caused by the Fundão dam failure in the municipalities of Barra Longa, Rio Doce, Santa Cruz do Escalvado and Ponte Nova, amounting to R$200. The 12th Judicial Federal Court of Belo Horizonte ratified this Second Agreement.

Parties are still negotiating an agreement regarding the choice of the expert to perform the socio-economic impact assessment. In this regard, on November 16th, 2017, they signed an addendum to the First Agreement, in which the parties defined matters related to the socio-economic impact assessment, its institutional structure and the respective experts, which, in the period of 90 days from the signing of the addendum, shall present their technical and commercial proposals.

Alongside, the parties, together with the plaintiffs of the R$20.2 billion public civil lawsuit, the State Prosecutors and the Public Defenders, are conducting the discussions regarding the Final Agreement.

(iii) U.S. Securities class action suits

Related to the Vale s American Depositary Receipts

Vale S.A. and certain of its officers were named as defendants in securities class action suits in the Federal Court in New York brought by holders of Vale s American Depositary Receipts under U.S. federal securities laws. The lawsuits allege that Vale S.A. made false and misleading statements or did not make disclosures concerning the risks and dangers of the operations of Samarco s Fundão dam and the adequacy of related programs and procedures. The plaintiffs have not specified an amount of alleged damages or indemnities in these actions.

On March 23, 2017 the judge issued a decision rejecting a significant portion of the claims against Vale S.A. and the individual defendants, and determining the prosecution of the action with respect to more limited claims. The portion of plaintiffs case that remains is related to certain statements about procedures, policies and risk mitigation plans contained in Vale S.A. s sustainability reports in 2013 and 2014, and certain statements regarding to the responsibility of Vale S.A. for the Fundão dam failure made in a conference call in November 2015.

This lawsuit is currently ongoing with under discovery the gathering of documents to be provided to the plaintiffs.

Vale S.A. continues to contest the outstanding points related to this lawsuit.

Related to the Samarco bonds

In March 2017, holders of bonds issued by Samarco filed a class action suit in the Federal Court in New York against Samarco, Vale S.A. and BHPB under U.S. federal securities laws demanding for indemnification for alleged violation of U.S. federal securities laws. The plaintiffs allege that false and misleading statements were made or disclosures omitted concerning the risks and dangers of the operations of Samarco s Fundão dam and the adequacy of related programs and procedures. It is alleged that with the Fundão dam collapse, the securities have dramatically decreased, in order that the investors who have purchased such securities in a misleading way should be compensated, without, however, specifying an amount for the alleged damages or indemnities in this action.

Vale S.A. continues to contest this lawsuit.

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(iv) Criminal lawsuit

On October 20, 2016, the MPF brought a criminal lawsuit in the Brazilian Federal Justice Court against Vale S.A., BHPB, Samarco, VogBr Recursos Hídricos e Geotecnia Ltda. and 22 individuals for alleged crimes against the environment, urban planning and cultural heritage, flooding, landslide, as well as for alleged crimes against the victims of the Fundão dam failure.

In November 2017 it was published a decision by means of the Federal Lower Court of Ponte Nova established the resume of the criminal lawsuit and determined the beginning of the Discovery phase.

(v) Other lawsuits

In addition, Samarco and its shareholders were named as a defendant in several other lawsuits brought by individuals, corporations, governmental entities or public prosecutor seeking personal and property damages.

Given the status of these lawsuits, it is not possible at this time to provide a range of possible outcomes or a reliable estimates of potential exposures for Vale S.A. Consequently, no contingent liability has been quantified and no provision was recognized for lawsuits related to Samarco s dam failure.

Accounting policy

A provision is recognized when is considered probable that an outflow of resources will be required to settle the obligation and can be reliably estimated. The liability is accounted against an expense in the income statement. This obligation is updated based on the developments of the judicial process or interest accretion and can be reversed if the expectation of loss is not considered probable due to changes in circumstances or when the obligation is settled.

Critical accounting estimates and judgments

By nature, litigations will be resolved when one or more future event occurs or fails to occur. Typically, the occurrence or not of such events is outside of the Company s control. Legal uncertainties involve the application of significant estimates and judgments by management regarding the potential out comes of future events.

28. Employee benefits

a) Employee postretirements obligations

In Brazil, the management of the pension plans is responsibility of Fundação Vale do Rio Doce de Seguridade Social (Valia) a nonprofit entity with administrative and financial autonomy. The Brazilian plans are as follows:

Benefit plan Vale Mais (Vale Mais) and benefit plan Valiaprev (Valiaprev) - Certain Company s employees are participants of Vale Mais and Valiaprev plans, with components of defined benefit (specific coverage for death, pensions and disability allowances) and components of defined contributions (for programmable benefits). The defined benefits plan is subject to actuarial evaluations. The defined contribution plan represents a fixed amount held on behalf of the participants. Both Vale Mais and Valiaprev were overfunded as at December 31, 2017 and 2016.

Defined benefit plan (Plano BD) - The Plano BD has been closed to new entrants since the year 2000, when the Vale Mais plan was implemented. It is a plan that has defined benefit characteristics, covering almost exclusively retirees and their beneficiaries. It was overfunded as of December 31, 2017 and 2016 and the contributions made by the Company are not relevant.

Abono complementação benefit plan - The Company sponsors a specific group of former employees entitled to receive additional benefits from Valia regular payments plus post-retirement benefit that covers medical, dental and pharmaceutical assistance. The contributions made by the Company finished in 2014. The abono complementação benefit was overfunded as at December 31, 2017 and 2016.

Other benefits - The Company sponsors medical plans for employees that meet specific criteria and for employees who use the abono complementação benefit. Although those benefits are not specific retirement plans, actuarial calculations are used to calculate future commitments. As those benefits are related to health care plans they have the nature of underfunded benefits, and are presented as underfunded plans as at December 31, 2017 and 2016.

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The Foreign plans are managed in accordance with their region. They are divided between plans in Canada, United States of America, United Kingdom, Indonesia, New Caledonia, Japan and Taiwan. Pension plans in Canada are composed of a defined benefit and defined contribution component. Currently the defined benefit plans do not allow new entrants. The foreign defined benefit plans are underfunded as at December 31, 2017 and 2016.

Employers disclosure about pensions and other post-retirement benefits on the status of the defined benefit elements of all plans is provided as follows.

i. Change in benefit obligation

	Consolidated			Parent company	
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Other benefits
Benefit obligation as at December 31, 2015	**9,659**	**14,407**	**4,772**	**9,640**	**555**
Service costs	36	267	(44)	34	103
Interest costs	1,256	608	231	1,253	72
Benefits paid	(970)	(900)	(212)	(969)	(66)
Participant contributions	2	2		2	
Effect of changes in the actuarial assumptions	942	371	244	936	76
Translation adjustment		(1,906)	(574)		
Others		334			
Transfer to held for sale	(29)		(193)		
Benefit obligation as at December 31, 2016	**10,896**	**13,183**	**4,224**	**10,896**	**740**
Service costs	23	275	95	23	27
Interest costs	1,149	587	215	1,149	78
Benefits paid	(1,039)	(881)	(207)	(1,039)	(74)
Participant contributions	2	(39)		2	
Effect of changes in the actuarial assumptions	208	560	40	208	84
Translation adjustment		1,104	294		
Benefit obligation as at December 31, 2017	**11,239**	**14,789**	**4,661**	**11,239**	**855**

ii. Evolution of assets fair value

	Consolidated			Parent company	
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Other benefits

Fair value of plan assets as at December 31, 2015	**13,413**	**12,083**		**13,383**	
Interest income	1,777	525		1,772	
Employer contributions	143	342	212	140	66
Participant contributions	2	2		2	
Benefits paid	(970)	(900)	(212)	(969)	(66)
Return on plan assets (excluding interest income)	976	192		970	
Translation adjustment		(1,530)			
Others		430			
Transfer to held for sale	(43)				
Fair value of plan assets as at December 31, 2016	**15,298**	**11,144**		**15,298**	
Interest income	1,639	482		1,639	
Employer contributions	121	207	207	121	74
Participant contributions	2	(39)		2	
Benefits paid	(1,039)	(881)	(207)	(1,039)	(74)
Return on plan assets (excluding interest income)	(49)	568		(49)	
Translation adjustment		1,011			
Fair value of plan assets as at December 31, 2017	**15,972**	**12,492**		**15,972**	

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iii. Reconciliation of assets and liabilities recognized in the statement of financial position

	Consolidated Plans in Brazil					
	December 31, 2017			December 31, 2016		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	**4,402**			**3,754**		
Interest income	485			539		
Changes on asset ceiling and onerous liability	(154)			120		
Transfer to held for sale				(11)		
Balance at end of the year	**4,733**			**4,402**		
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(11,239)	(1,328)	(854)	(10,896)	(1,260)	(740)
Fair value of assets	15,972	792		15,298	839	
Effect of the asset ceiling	(4,733)			(4,402)		
Liabilities		**(536)**	**(854)**		**(421)**	**(740)**
Current liabilities			(73)			(58)
Non-current liabilities		(536)	(781)		(421)	(682)
Liabilities		**(536)**	**(854)**		**(421)**	**(740)**

	Consolidated Foreign plan					
	December 31, 2017			December 31, 2016		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Amount recognized in the statement of financial position						
Present value of actuarial liabilities		(13,461)	(3,807)		(11,923)	(3,484)
Fair value of assets		11,700			10,305	
Liabilities		**(1,761)**	**(3,807)**		**(1,618)**	**(3,484)**
Current liabilities		(54)	(117)		(53)	(114)
Non-current liabilities		(1,707)	(3,690)		(1,565)	(3,370)
Liabilities		**(1,761)**	**(3,807)**		**(1,618)**	**(3,484)**

	Consolidated Total					
	December 31, 2017			December 31, 2016		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	**4,402**			**3,754**		
Interest income	485			539		
Changes on asset ceiling and onerous liability	(154)			120		
Transfer to held for sale				(11)		
Balance at end of the year	**4,733**			**4,402**		
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(11,239)	(14,789)	(4,661)	(10,896)	(13,183)	(4,224)
Fair value of assets	15,972	12,492		15,298	11,144	
Effect of the asset ceiling	(4,733)			(4,402)		
Liabilities		**(2,297)**	**(4,661)**		**(2,039)**	**(4,224)**
Current liabilities		(54)	(190)		(53)	(172)
Non-current liabilities		(2,243)	(4,471)		(1,986)	(4,052)
Liabilities		**(2,297)**	**(4,661)**		**(2,039)**	**(4,224)**

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	Parent company Plans in Brazil			
	December 31, 2017		December 31, 2016	
	Overfunded pension plans	Other benefits	Overfunded pension plans	Other benefits
Balance at beginning of the year	**4,402**		**3,743**	
Interest income	485		539	
Changes on asset ceiling and onerous liability	(154)		120	
Balance at end of the year	**4,733**		**4,402**	
Amount recognized in the statement of financial position				
Present value of actuarial liabilities	(11,239)	(855)	(10,896)	(739)
Fair value of assets	15,972		15,298	
Effect of the asset ceiling	(4,733)		(4,402)	
Liabilities		**(855)**		**(739)**
Current liabilities		**(73)**		**(58)**
Non-current liabilities		(782)		(681)
Liabilities		**(855)**		**(739)**

iv. Costs recognized in the income statement

	Consolidated Year ended December 31								
	2017			2016			2015		
	Overfunded pension plans	Underfunded pension plans	Other Benefits	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Service cost	23	275	95	36	267	(44)	65	308	92
Interest on expense on liabilities	1,149	587	215	1,256	608	231	1,181	591	219
Interest income on plan assets	(1,639)	(482)		(1,777)	(525)		(1,616)	(498)	
Interest expense on effect of (asset ceiling)/ onerous liability	485			541			437		
Total of cost, net	**18**	**380**	**310**	**56**	**350**	**187**	**67**	**401**	**311**

	Parent company Year ended December 31					
	2017			2016		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Service cost	23		27	34		103
Interest on expense on liabilities	1,149		78	1,253		72
Interest income on plan assets	(1,639)			(1,772)		
Interest expense on effect of (asset ceiling)/ onerous liability	485			540		
Total of cost, net	**18**		**105**	**55**		**175**

v. Costs recognized in the statement of comprehensive income

	Consolidated Year ended December 31								
	2017			2016			2015		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	**(500)**	**(1,616)**	**(523)**	**(440)**	**(1,934)**	**(369)**	**(380)**	**(1,515)**	**(350)**
Effect of changes actuarial assumptions	(212)	(560)	(94)	(942)	(371)	(244)	710	267	119
Return on plan assets (excluding interest income)	(4)	545		976	192		(977)	(36)	
Change of asset ceiling / costly liabilities (excluding interest income)	159			(125)			170		
Others	(11)	1	(47)		95			8	
	(68)	**(14)**	**(141)**	**(91)**	**(84)**	**(244)**	**(97)**	**239**	**119**
Deferred income tax	23	(6)	42	31	62	60	33	(4)	(33)
Others comprehensive income	**(45)**	**(20)**	**(99)**	**(60)**	**(22)**	**(184)**	**(64)**	**235**	**86**
Translation adjustments		(8)	(2)		340	30		(650)	(105)
Transfers/disposal		2	(2)				4	(4)	
Accumulated other comprehensive income	**(545)**	**(1,642)**	**(626)**	**(500)**	**(1,616)**	**(523)**	**(440)**	**(1,934)**	**(369)**

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	Parent company Year ended December 31					
	2017			2016		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	**(501)**		**(190)**	**(444)**		**(140)**
Effect of changes actuarial assumptions	(208)		(84)	(936)		(76)
Return on plan assets (excluding interest income)	(49)			970		
Change of asset ceiling / costly liabilities (excluding interest income)	154			(121)		
Others			(2)			
	(103)		**(86)**	**(87)**		**(76)**
Deferred income tax	35		29	30		26
Others comprehensive income	**(68)**		**(57)**	**(57)**		**(50)**
Accumulated other comprehensive income	**(569)**		**(247)**	**(501)**		**(190)**

vi. Risks related to plans

The Administrators of the plans have committed to strategic planning to strengthen internal controls and risk management. This commitment is archived by conducting audits including of internal controls, which aim to mitigate operational market and credit risks. Risks are presented as follow:

Legal - lawsuits: issuing periodic reports to internal audit and directors contemplating the analysis of lawyers about the possibility of loss (remote, probable or possible), aiming to support the administrative decision regarding provisions. Analysis and ongoing monitoring of developments in the legal scenario and its dissemination within the institution in order to subsidize the administrative plans, considering the impact of regulatory changes.

Actuarial - the annual actuarial valuation of the benefit plans comprises the assessment of costs, revenues and adequacy of plan funding. It also considers the monitoring of biometric, economic and financial assumptions (asset volatility, changes in interest rates, inflation, life expectancy, salaries and other).

Market - profitability projections are performed for the various plans and profiles of investments for 10 years in the management study of assets and liabilities. These projections include the risks of investments in various market segments. Furthermore, the risks for short-term market of the plans are monitored monthly through metrics of VaR (Value at Risk) and stress testing. For exclusive investment funds of Valia, the market risk is measured daily by the custodian asset bank.

Credit - assessment of the credit quality of issuers by hiring expert consultants to evaluate financial institutions and internal assessment of payment ability of non-financial companies. For assets of non-financial companies, the assessment is conducted a monitoring of the company until the maturity of the security.

vii. Actuarial and economic assumptions and sensitivity analysis

All calculations involve future actuarial projections about some parameters, such as: salaries, interest, inflation, the trend of social security in Brazil (INSS) benefits, mortality and disability.

The economic and actuarial assumptions adopted have been formulated considering the long-term period for maturity and should therefore be examined accordingly. In the short term they may not necessarily be realized.

In the evaluations were adopted the following assumptions:

	Brazil					
	December 31, 2017			December 31, 2016		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Discount rate to determine benefit obligation	9.74% - 9.85%	9.84%	9.74% - 9.91%	10.98% - 11.14%	10.98%	10.98% - 11.09%
Nominal average rate to determine expense/ income	9.74% - 9.85%	9.84%	N/A	10.98% - 11.14%	10.98%	N/A
Nominal average rate of salary increase	4.25% - 6.34%	4.25% - 6.34%	N/A	4.85% - 5.95%	6.95%	N/A
Nominal average rate of benefit increase	4.85%	4.85%	N/A	6.00%	6.00%	N/A
Immediate health care cost trend rate	N/A	N/A	7.38%	N/A	N/A	8.00%
Ultimate health care cost trend rate	N/A	N/A	7.38%	N/A	N/A	8.00%
	4.25%	4.25%	4.25%	4.85%	4.85%	4.85%

Nominal average rate of price inflation	

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	Foreign			
	December 31, 2017		December 31, 2016	
	Underfunded pension plans	Other benefits	Underfunded pension plans	Other benefits
Discount rate to determine benefit obligation	3.26%	3.44%	3.84%	3.90%
Nominal average rate to determine expense/ income	3.84%	N/A	4.01%	N/A
Nominal average rate of salary increase	3.27%	N/A	4.05%	N/A
Nominal average rate of benefit increase	N/A	3.00%	N/A	3.00%
Immediate health care cost trend rate	N/A	5.99%	N/A	6.30%
Ultimate health care cost trend rate	N/A	4.56%	N/A	4.50%
Nominal average rate of price inflation	2.10%	2.10%	2.00%	2.00%

For the sensitivity analysis, the Company considers the effect of 1% in nominal discount rate to determine the actuarial liability. The effects of this change in actuarial liabilities in premise and adopted the average duration of the plan are as follows:

	Consolidated December 31, 2017			Parent company December 31, 2017	
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Other benefits
Nominal discount rate - 1% increase					
Actuarial liability balance	10,340	13,044	4,075	10,340	782
Assumptions made	10.75%	4.85%	5.61%	10.75%	8.82%
Nominal discount rate - 1% reduction					
Actuarial liability balance	12,289	16,783	5,359	12,289	934
Assumptions made	8.75%	2.85%	3.61%	8.75%	10.82%

viii. Assets of pension plans

Brazilian plan assets as at December 31, 2017 and 2016 includes respectively (i) investments in a portfolio of Vale s stock and other instruments in the amount of R$124 and R$84 and (ii) Brazilian Federal Government securities in the amount of R$15,274 and R$14,256.

Foreign plan assets as at December 31, 2017 and 2016 includes Canadian Government securities in the amount of R$2,858 and R$2,395 respectively.

ix. Overfunded pension plans

Assets by category are as follows:

	Consolidated and Parent Company							
	December 31, 2017				December 31, 2016			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents					1			1
Debt securities - Corporate		238		238		380		380
Debt securities - Government	9,119			9,119	8,512			8,512
Investments funds - Fixed Income	8,321			8,321	7,857			7,857
Investments funds - Equity	1,755			1,755	549			549
International investments	80			80	38			38
Structured investments - Private Equity funds			648	648	708		456	1,164
Structured investments - Real estate funds			50	50			32	32
Real estate			1,206	1,206			1,205	1,205
Loans to participants			744	744			850	850
Total	**19,275**	**238**	**2,648**	**22,161**	**17,665**	**380**	**2,543**	**20,588**
Funds not related to risk plans				(6,189)				(5,290)
Fair value of plan assets at end of year				**15,972**				**15,298**

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Measurement of overfunded plan assets at fair value with no observable market variables (level 3) are as follows:

	Consolidated and Parent Company				
	Private equity funds	Real estate funds	Real estate	Loans to participants	Total
Balance as at December 31, 2015	**532**	**25**	**1,246**	**968**	**2,771**
Return on plan assets	(67)		10	115	58
Assets purchases	103	7	8	193	311
Assets sold during the year	(79)		(58)	(423)	(560)
Transfer to held for sale	(33)		(1)	(3)	(37)
Balance as at December 31, 2016	**456**	**32**	**1,205**	**850**	**2,543**
Return on plan assets	117	(6)	12	92	215
Assets purchases	99	24	42	239	404
Assets sold during the year	(24)		(53)	(437)	(514)
Balance as at December 31, 2017	**648**	**50**	**1,206**	**744**	**2,648**

x. Underfunded pension plans

Assets by category are as follows:

	Consolidated							
	December 31, 2017				December 31, 2016			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	13	93		106		78		78
Equity securities	4,511	10		4,521	4,045			4,045
Debt securities - Corporate		1,118		1,118		34		34
Debt securities - Government	468	2,650		3,118	271	2,395		2,666
Investments funds - Fixed Income	527			527	464	1,001		1,465
Investments funds - Equity	26	1,297		1,323	301	1,199		1,500
International investments						88		88
Structured investments - Private Equity funds	321		651	972			608	608
Real estate			147	147			78	78
Loans to participants			17	17			18	18
Others			643	643			564	564
Total	**5,866**	**5,168**	**1,458**	**12,492**	**5,081**	**4,795**	**1,268**	**11,144**

Measurement of underfunded plan assets at fair value with no observable market variables (level 3) are as follows:

	Consolidated				
	Private equity funds	Real estate	Loans to participants	Others	Total
Balance as at December 31, 2015	**384**	**77**	**17**	**622**	**1,100**
Return on plan assets	52	1	1	31	85
Assets purchases	613			(1)	612
Assets sold during the year	(386)				(386)
Translation adjustment	(55)			(88)	(143)
Balance as at December 31, 2016	**608**	**78**	**18**	**564**	**1,268**
Return on plan assets	26	3		32	61
Assets purchases	42	54			96
Assets sold during the year	(56)	(4)	(1)		(61)
Translation adjustment	31	16		47	94
Balance as at December 31, 2017	**651**	**147**	**17**	**643**	**1,458**

xi. Disbursement of future cash flow

Vale expects to disburse R$462 in 2018 in relation to pension plans and other benefits.

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xii. Expected benefit payments

The expected benefit payments, which reflect future services, are as follows:

	December 31, 2017		
	Overfunded pension plans	Underfunded pension plans	Other benefits
2018	321	832	221
2019	337	833	225
2020	356	833	231
2021	272	838	239
2022	387	846	245
2023 and thereafter	2,122	4,336	1,313

b) Profit sharing program (PLR)

The Company recorded as cost of goods sold and services rendered and other operating expenses related to the PLR R$2,490, R$l,064 and R$147 for the years ended on December 31, 2017, 2016 and 2015, respectively. For the Parent Company, R$l,780, RS$638 and R$106 for the year ended on December 31, 2017, 2016 and 2015, respectively.

c) Long-term compensation plan

For the long-term awarding of eligible executives, the Company compensation plans includes Matching Program and Performance Share Unit Program - PSU, with three to four years-vesting cycles, respectively, with the aim of encouraging employee s retention and stimulating their performance.

For the Matching program, the participants can acquire Vale s common shares in the market without any benefits being provided by Vale. If the shares acquired are held for a period of three years and the participants keep it employment relationship with Vale, the participant is entitled to receive from Vale an award in shares, equivalent to the number of shares originally acquired by the executive. It should be noted that, although a specific custodian of the shares is defined by Vale, the share initially purchased by the executives have no restriction and can be sold at any time. However, if it s done before the end of the three-year-vesting period, they lose the entitlement of receiving the related award paid by Vale.

For PSU program, the eligible executives have the opportunity to receive during a four year-vesting cycle, an award equivalent to the market value of a determined number of common shares and conditioned to Vale s performance factor measured as an indicator of total return to the shareholders (TSR). This award is paid in cash and can occur in cumulative installments of 20% (at the end of 2nd year), 30% (at the end of 3rd year) and 50% (at the end of 4th year), conditioned to the performance factor of each year.

Liabilities of the plans are measured at fair value at every reporting period, based on market rates. Compensation costs incurred are recognized by the defined vesting period of three or four years. For the years ended December 31, 2017, 2016 and 2015 the Company recognized in the income statement the amounts of R$207, R$120 and R$113, respectively, related to long term compensation plan.

Accounting policy

Employee benefits

i. Current benefits - wages, vacations and related taxes

Payments of benefits such as wages or accrued vacation, as well the related social security taxes over those benefits are recognized monthly in income, on an accruals basis.

ii. Current benefits - profit sharing program

The Company has the Annual Incentive Program (AIP) based on Team and business unit s contribution and Company-wide performance through operational cash generation. The Company makes an accrual based on evaluation periodic of goals achieved and Company result, using the accrual basis and recognition of present obligation arising from past events in the estimated outflow of resources in the future. The accrual is recorded as cost of goods sold and services rendered or operating expenses in accordance with the activity of each employee.

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iii. Non-current benefits - long-term incentive programs

The Company has established a procedure for awarding certain eligible executives (Matching and Virtual Shares Programs) with the goal of encouraging employee retention and optimum performance. Plan liabilities are measured at each reporting date, at their fair values, based on market prices. Obligations are measured at each reporting date, at fair values based on market prices. The compensation costs incurred are recognized in income during the vesting period as defined.

iv. Non-current benefits - pension costs and other post-retirement benefits

The Company has several retirement plans for its employees.

For defined contribution plans, the Company s obligations are limited to a monthly contribution linked to a pre-defined percentage of the remuneration of employees enrolled in to these plans.

For defined benefit plans, actuarial calculations are periodically obtained for liabilities determined in accordance with the Projected Unit Credit Method in order to estimate the Company s obligation. The liability recognized in the statement of financial position represents the present value of the defined benefit obligation as at that date, less the fair value of plan assets. The Company recognized in the income statement the costs of services, the interest expense of the obligations and the interest income of the plan assets. The remeasurement of gains and losses, return on plan assets (excluding the amount of interest on return of assets, which is recognized in income for the year) and changes in the effect of the ceiling of the active and onerous liabilities are recognized in comprehensive income for the year.

For overfunded plans, the Company does not recognize any assets or benefits in the statement of financial position or income statement until such time as the use of the surplus is clearly defined. For underfunded plans, the Company recognizes actuarial

liabilities and results arising from the actuarial valuation.

Critical accounting estimates and judgments

Post-retirement benefits for employees - The amount recognized and disclosed depend on a number of factors that are determined based on actuarial calculations using various assumptions in order to determine costs and liabilities. One of these assumptions is selection and use of the discount rate. Any changes to these assumptions will affect the amount recognized.

At the end of each year the Company and external actuaries review the assumptions that will be used for the following year. These assumptions are used in determining the fair values of assets and liabilities, costs and expenses and the future values of estimated cash outflows, which are recorded in the plan obligations.

29. Stockholders equity

a) Conversion of preferred shares and merger of Valepar S.A.

At the General Extraordinary Stockholders Meeting, held on June 27, 2017, approved the voluntary conversion of Vale class A preferred share into common shares (ON), based on the conversion rate of 0.9342 common shares for each Vale class A preferred share.

On August 11, 2017, the voluntary conversion period expired and an aggregate of 1,660,581,830 preferred shares (excluding treasury shares), corresponding to 84.4% of the total outstanding preferred shares, were converted into common shares.

At the Extraordinary Stockholders Meeting of Valepar S.A, held on August 14, 2017, stockholders approved the merger of Valepar with and into Vale. Thereafter, Valepar ceases to exist and, as consequence, its stockholders hold direct interests in Vale, through the 1.2065 Vale common shares received for each Valepar share held by them. As a result, Vale issued 173,543,667 new common shares to Valepar s stockholders, all registered and without par value.

On August 14, 2017, the merger was accounted in Vale s stockholders equity as capital reserve, based on the accounting appraisal report of Valepar s net assets, amounting R$3,692.

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The impacts arising from the merger in the Company s assets and liabilities are as follows:

	August 14, 2017
Current assets	77
Judicial deposits (note 27(c))	3,034
Intangible (note 17)	3,073
Current liabilities	64
Provisions for litigation (note 27(a))	2,013
Taxes payable (note 8)	415
Net assets	**3,692**

At the Extraordinary Stockholders Meeting and at the Special Stockholders Meeting, held on October 18, 2017, preferred stockholders approved the conversion of all Class A preferred shares into common shares of the Company, in the proportion of 0.9342 common share for each class A preferred share. During the period from October 20, 2017 until November 21, 2017, inclusive, the stockholders holding Vale s Class A preferred shares dissenting with regard to the resolution of the Special Meeting, had the right to withdraw from the Company, receiving R$24.26 per share which is the equivalent of Vale stockholders equity per share at December 31, 2016. At the end of this period, 10,397 common shares were converted into treasury shares (corresponding to 11,130 preferred shares).

At the Extraordinary Stockholders Meeting held on December 21, 2017 approved the migration of the Company to the special listing segment of B3 S.A. (Novo Mercado), following the conversion of the class A preferred shares into common shares.

The stockholders equity corresponds to 5,284,474,770 common shares and 12 preferred shares special class (PNE or Golden shares), and there were no changes in the amount of share capital.

	Share position before conversion	Conversion of the preferred shares	Issue of new shares	Share position after conversion
Shares outstanding				
ON	3,185,653,000	1,838,235,414	173,543,667	5,197,432,081
PNA/PNE	1,967,721,926	(1,967,721,914)		12
	5,153,374,926	**(129,486,500)**	**173,543,667**	**5,197,432,093**
Shares in treasury				
ON	31,535,402	55,507,287		87,042,689
PNA	59,405,792	(59,405,792)		
Total issued shares	**5,244,316,120**	**(133,385,005)**	**173,543,667**	**5,284,474,782**

The basic and diluted earnings per share were recalculated considering the changes in the number of shares, as described above. The comparative information for the years ended December 31, 2016 and 2015 were restated, as presented in note 9.

b) Share capital

As at December 31, 2017, the share capital was R$77,300 corresponding to 5,284,474,782 shares issued and fully paid without par value.

	December 31, 2017			December 31, 2016		
Stockholders	**ON**	**PNE**	**Total**	**ON**	**PNA**	**Total**
Litel Participações S.A. and Litela Participações S.A.	1,108,483,410		1,108,483,410			
BNDES Participações S.A.	401,457,757		401,457,757	206,378,882	66,185,272	272,564,154
Bradespar S.A.	332,965,266		332,965,266			
Mitsui & Co., Ltd	286,347,055		286,347,055			
Valepar S.A.				1,716,435,045	20,340,000	1,736,775,045
Brazilian Government (Golden Share)		12	12		12	12
Foreign investors - ADRs	1,292,115,112		1,292,115,112	786,067,634	610,880,671	1,396,948,305
Foreign institutional investors in local market	1,129,164,954		1,129,164,954	262,868,264	825,753,408	1,088,621,672
FMP - FGTS	62,061,672		62,061,672	70,662,746		70,662,746
PIBB - Fund	2,632,618		2,632,618	741,730	1,171,101	1,912,831
Institutional investors	277,003,730		277,003,730	104,510,549	133,496,260	238,006,809
Retail investors in Brazil	305,200,507		305,200,507	37,988,150	309,895,202	347,883,352
Shares outstanding	**5,197,432,081**	**12**	**5,197,432,093**	**3,185,653,000**	**1,967,721,926**	**5,153,374,926**
Shares in treasury	87,042,689		87,042,689	31,535,402	59,405,792	90,941,194
Total issued shares	**5,284,474,770**	**12**	**5,284,474,782**	**3,217,188,402**	**2,027,127,718**	**5,244,316,120**
Share capital per class of shares (in millions)	77,300		**77,300**	**47,421**	**29,879**	**77,300**
Total authorized shares	**7,000,000,000**		**7,000,000,000**	**3,600,000,000**	**7,200,000,000**	**10,800,000,000**

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The Board of Directors may, regardless of changes to by-laws, issue new common shares (up to the total authorized shares), including the capitalization of profits and reserves to the extent authorized.

The Company repurchases its shares to hold in treasury for future sale or cancellation. These shares are recorded in a specific account as a reduction of stockholders equity at their acquisition value and carried at cost. These programs are approved by the Board of Directors with a determined terms and numbers of shares. Currently, the Company does not have any share repurchase program.

Incremental costs directly attributable to the issue of new shares or options are recognized in stockholders equity as a deduction from the amount raised, net of taxes.

c) Remuneration to the Company s stockholders

The Company s by-laws determine the minimum remuneration to stockholders of 25% of net income, after appropriations to legal reserve and tax incentive reserve, as follows:

	2017
Net income of the year	**17,627**
Appropriation to legal reserve	(881)
Appropriation to tax incentive reserve	(693)
Net income after appropriations to legal reserve and tax incentive reserve	**16,053**
Minimum mandatory remuneration (i)	4,721
Appropriation to investments reserve	11,332

(i) The minimum mandatory remuneration were based on interest on capital and will be paid in 2018, in the amount of R$0.90842422800 per share. Due to the Brazilian legislation, the Company must retain and collect the amount of withholding tax (15%) and cannot be considered when charging the interest on capital to the mandatory dividend.

On December 14, 2017, the Board of Directors approved the payment in advance of the stockholders remuneration in the gross amount of R$2,183 million based on the interest on capital, as an anticipation relating to 2017. The Board of Directors approved on February 26, 2018 (subsequent event), the complementary payment to the stockholders remuneration in the gross amount of R$2,538 million based on the interest on capital. Together, these resolutions comprise the minimum mandatory remuneration for the year ended December 31, 2017 that will be paid in March 2018.

The remuneration paid to stockholders based on the on interest on capital during 2017 and 2016 amounted R$4,667 million (R$0.905571689 per share) and R$857 million (R$0.166293936 per share), respectively. All remuneration was based on interest on capital for those years.

d) Profit reserves

The amount of profit reserves are distributed as follows:

	Legal reserve	Tax incentive reserve	Investments reserve	Additional remuneration reserve	Total of profit reserves
Balance as at December 31, 2015	**3,846**				**3,846**
Allocation of Income	665	1,228	5,894	2,065	9,852
Balance as at December 31, 2016	**4,511**	**1,228**	**5,894**	**2,065**	**13,698**
Allocation of Income	881	693	11,332		12,906
Dividends and interest on capital of Vale s stockholders				(2,065)	(2,065)
Balance as at December 31, 2017	**5,392**	**1,921**	**17,226**		**24,539**

Legal reserve - Is a legal requirement for Brazilian public companies to retain 5% of the annual net income up to 20% of the capital. The reserve can only be used to compensate losses or to increase capital.

Tax incentive reserve - Results from the option to designate a portion of the income tax for investments in projects approved by the Brazilian Government as well as tax incentives.

Investment reserve - Aims to ensure the maintenance and development of the main activities that comprise the Company s operations and to retain budgeted capital for investments. Based on the Company s by-laws, this reserve is capped to 50% of the annual distributable net income, up to the amount of the share capital. The remaining balance over than 50% of the annual distributable net income is retained based on the capital investments budget submitted for approval in the Stockholder s Meeting, pursuant to article 196 of the Law 6,404.

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Additional remuneration reserve - Arises from the remuneration proposed by Management that exceeds the minimum mandatory remuneration of 25% of the adjusted net income. On April 20, 2017, Stockholders approved the payment of the additional remuneration in relation to the year ended December 31, 2016.

e) Unrealized fair value gain (losses)

	Retirement benefit obligations	Cash flow hedge	Available-for-sale financial instruments	Conversion shares	Total gain (losses)
Balance as at December 31, 2015	**(2,743)**	**(25)**	**(4)**	**(1,101)**	**(3,873)**
Other comprehensive income	(263)	**26**	**4**		(233)
Translation adjustment	368	**(1)**			367
Balance as at December 31, 2016	**(2,638)**			**(1,101)**	**(3.739)**
Other comprehensive income	(164)				(164)
Translation adjustment	**(9)**				**(9)**
Balance as at December 31, 2017	**(2,811)**			**(1,101)**	**(3,912)**

f) Shareholders Agreement

On the date of the merger of Valepar into Vale, August 14, 2017, the former Controlling Shareholders of Valepar executed a new shareholders agreement (Vale Agreement) that binds only 20% of the totality of Vale s common shares issued by Vale, and will be in force until November 9, 2020, with no provision for renewal.

For 6 months from the date of entry into force of the Vale Agreement, the Shareholders will be obligated not to transfer, by any means, either directly or indirectly, Vale shares they receive as a result of the implementation of the Proposal (Lock-Up), except for (i) the transfer of Vale s shares by the Shareholders to their affiliates and their current shareholders, provided that such transferred shares shall remain subject to the Lock-Up, and (ii) the transfer of shares held by the Shareholders prior to the merger of Valepar.

Accounting policy

Stockholder s remuneration - The stockholder s remuneration is paid on dividends and interest on capital. This remuneration is recognized as a liability in the financial statements of the Company based on bylaws. Any amount above the minimum mandatory remuneration approved by the by-laws shall only be recognized in current liabilities on the date that is approved by stockholders.

The Company is permitted to distribute interest attributable to stockholders equity. The calculation is based on the stockholders equity amounts as stated in the statutory accounting records and the interest rate applied may not exceed the Brazilian Government Long-term Interest Rate (TJLP) determined by the Central Bank of Brazil. Also, such interest may not exceed 50% of the net income for the year or 50% of retained earnings plus profit reserves as determined by Brazilian corporate law.

The benefit to the Company, as opposed to making a dividend payment, is a reduction in the income tax burden because this interest charge is tax deductible in Brazil. Income tax of 15% is withheld on behalf of the stockholders relative to the interest distribution. Under Brazilian law, interest attributed to stockholders equity is considered as part of the annual minimum mandatory dividend. This notional interest distribution is treated for accounting purposes as a deduction from stockholders equity in a manner similar to a dividend and the tax deductibility recorded in the income statement.

30. Related parties

The Company s related parties are predominantly subsidiaries, joint ventures, associates and key management personnel of the Company. Transactions between the parent company and its subsidiaries are eliminated on consolidation and are not disclosed in this note. Details of material non-consolidated entities are disclosed in note 15.

Related party transactions were made by the Company on terms equivalent to those that prevail in arm s-length transactions, observing the price and usual market conditions, therefore these transactions are under terms that are no less favorable to the Company than those arranged with third parties.

Purchases, accounts receivable and other assets, and accounts payable and other liabilities relates largely to amounts charged by joint ventures and associates related to the pelletizing plants lease and railway transportation services.

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Information about related party transactions and effects on the financial statements is set out below:

a) Transactions with related parties

	Consolidated Year ended December 31								
	2017			2016			2015		
	Joint Ventures	Associates	Total	Joint Ventures	Associates	Total	Joint Ventures	Associates	Total
Net operating revenue	1,265	1,079	**2,344**	557	1,200	**1,757**	453	1,173	**1,626**
Cost and operating expenses	(6,211)	(92)	**(6,303)**	(3,123)	(180)	**(3,303)**	(2,726)	(276)	**(3,002)**
Financial result	376	(69)	**307**	(93)	(72)	**(165)**		26	**26**

Net operating revenue relates to sale of iron ore to the steelmakers and right to use capacity on railroads.

Cost and operating expenses mostly relates to the operational leases of the pelletizing plants. Further information in relation to these operational leases is disclosed in note 31.

b) Outstanding balances with related parties

	Consolidated					
	December 31, 2017			December 31, 2016		
	Joint Ventures	Associates	Total	Joint Ventures	Associates	Total
Assets						
Accounts receivable	242	125	**367**	224	114	**338**
Dividends receivable	371	48	**419**	172	65	**237**
Loans to related parties	14,972		**14,972**			
Other assets	57		**57**	**2**		**2**
Liabilities						
Supplier and contractors	636	67	**703**	311	38	**349**
Loans from related parties		4,119	**4,119**		1,437	**1,437**
Other liabilities	2,023		**2,023**	1,169		**1,169**

In 2017, the loans from/to related parties mainly arose in connection with the transaction of Nacala s corridor business (further information in relation to this transaction is disclosed in note 15). Loans to related parties corresponds to the loan of R$14,972 to Nacala BV, which carries interest at 7.44% p.a. The loan from related parties mainly relates to the loan from Pangea Emirates Ltd. in the amount of R$3,856, which carries interest at 6.54% p.a.

c) The key management personnel remuneration is as follows:

	Year ended December 31		
	2017	**2016**	**2015**
Short-term benefits			
Wages or pro-labor	29	29	25
Direct and indirect benefits	33	15	19
Profit sharing program (PLR)	33		24
	95	**44**	**68**
Long-term benefits			
Shares based	**52**	**3**	**2**
Severance	**21**	**15**	**19**
	168	**62**	**89**

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31. Commitments

a) Contractual obligations

The table below presents the annual minimum future payments, which are required and non-cancelable, related to contractual obligations of the Company as of December 31.

	2018	2019	2020	2021	2022 and thereafter	Total
Operating lease	935	633	593	588	732	3,481
Purchase obligations	7,248	3,378	2,269	1,997	12,442	27,334
Total minimum payments required	**8,183**	**4,011**	**2,862**	**2,585**	**13,174**	**30,815**

Operating lease - Vale has operating lease agreements with its joint ventures Companhia Coreano-Brasileira de Pelotização, Companhia Hispano-Brasileira de Pelotização, Companhia Ítalo-Brasileira de Pelotização and Companhia Nipo-Brasileira de Pelotização (together pelletizing plants), in which the Company leases their pelletizing plants. These agreements are renewable and last from 3 up to 10 years. The minimum future payments have been calculated considering that all contracts will be renewed automatically.

The Company also has operating leases for the exploration and processing of iron ore with joint ventures, port operations with third parties and property leases for its operational facilities with third parties.

The total amount of operational leasing expenses for the year ended on December 31, 2017, 2016 and 2015 were R$2,121, R$940 and R$1,033, respectively.

Purchase obligations - The purchase obligations derive mainly from contracts for the acquisition of fuel, energy and the acquisition of raw materials and services.

b) Guarantees provided

As of December 31, 2017, corporate guarantees provided by Vale (within the limit of its direct or indirect interest) for the companies Norte Energia S.A. and Companhia Siderúrgica do Pecém S.A. are R$l,250 and R$4,952, respectively.

The net book value of property, plant and equipment pledged to secure judicial claims on December 31, 2017 and 2016 were R$50 and R$113, respectively.

c) Nickel Operations - Indonesia

The Company s subsidiary PT Vale Indonesia Tbk (PTVI), a public company in Indonesia, has an agreement in place with the Government of Indonesia to operate its mining licenses and it includes a commitment to divest an additional 20% of PTVI s shares to Indonesian participants by October 2019 (approximately 20% of PTVI s shares are already registered on the Indonesian Stock Exchange). The existing major shareholders, Vale Canada and Sumitomo Metal Mining, Co., Ltd., will comply with the divestment obligation on a pro rata basis.

32. Risk management

Vale considers that an effective risk management is key to support the achievement of the company objectives and to ensure the financial strength and flexibility of the company and the business continuity.

Therefore, Vale has developed its risk management strategy in order to provide an integrated approach of the risks the company is exposed to, considering not only the risks generated by variables traded in financial markets (market risk) and those arising from liquidity risk, but also the risk from counterparties obligations (credit risk) and those relating to inadequate or failed internal processes, people, systems or external events (operational risk), among others.

a) Risk management policy

The Board of Directors established a corporate risk management policy defining principles and guidelines applicable to this process in the company and the corresponding governance structure.

This policy determines that corporate risks should be measured and monitored, regularly, in an integrated manner, in order to ensure that the company overall risk level remains aligned with its strategic guidelines.

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The Executive Risk Management Committee, created by the Board of Directors, is responsible for supporting the Executive Board in the risk management decisions, issuing opinions and recommendations. It is also responsible for the supervision and revision of the principles and instruments of corporate risk management.

The Executive Board is responsible for the approval of the policy deployment into norms, rules and responsibilities and for reporting to the Board of Directors about such procedures.

The risk management norms and instructions complement the corporate risk management policy and define practices, processes, controls, roles and responsibilities.

The Company may, when necessary, allocate specific risk limits to management activities, including but not limited to, market risk limit, corporate and sovereign credit limit, in accordance with the acceptable corporate risk limit.

b) Liquidity risk management

The liquidity risk arises from the possibility that Vale might not perform its obligations on due dates, as well as face difficulties to meet its cash requirements due to market liquidity constraints.

See note 20 Loans, borrowing, cash and cash equivalents and financial investments for details on the Company s liquidity risk.

c) Credit risk management

Vale s exposure to credit risk arises from trade receivables, derivative transactions, guarantees, down payment for suppliers and cash investments. Our credit risk management process provides a framework for assessing and managing counterparties credit risk and for maintaining our risk at an acceptable level.

(i) Commercial credit risk management

See note 10 Accounts receivables for details on commercial credit risk.

(ii) Treasury credit risk management

To manage the credit exposure arising from cash investments and derivative instruments, credit limits are approved to each counterparty with whom we have credit exposure.

Furthermore, we control the portfolio diversification and monitor different indicators of solvency and liquidity of the different counterparties that were approved for trading.

d) Market risk management

Vale is exposed to the behavior of several market risk factors that can impact its cash flow. The assessment of this potential impact arising from the volatility of risk factors and their correlations is performed periodically to support the decision making process regarding the risk management strategy, that may incorporate financial instruments, including derivatives.

The portfolio of these financial instruments is monitored on a monthly basis, enabling financial results surveillance and its impact on cash flow.

Considering the nature of Vale s business and operations, the main market risk factors which the Company is exposed to are:

- Foreign exchange and interest rates;
- Product prices and input costs.

e) Foreign exchange and interest rate risk

The company s cash flow is subjected to volatility of several currencies, as its product are predominantly priced in US dollar, while most of the costs, disbursements and investments are denominated in other currencies, mainly Brazilian real and Canadian dollar.

In order to reduce the potential impact that arises from this currency mismatch, derivatives instruments may be used as a risk mitigation strategy.

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Vale implements hedge transactions to protect its cash flow against the market risks that arises from its debt obligations - mainly currency volatility. The hedges cover most of the debts in Brazilian reais and euros. We use swap and forward transactions to convert debt linked to Brazilian real and Euros into US dollar, with volumes, flows and settlement dates similar to those of the debt instruments - or sometimes lower, subject to market liquidity conditions.

Hedging instruments with shorter settlement dates are renegotiated through time so that their final maturity matches - or becomes closer - to the debts final maturity. At each settlement date, the results of the swap and forward transactions partially offset the impact of the foreign exchange rate in Vale s obligations, contributing to stabilize the cash disbursements in US dollar.

Vale has also exposure to interest rates risks over loans and financings. The US Dollar floating rate debt in the portfolio consists mainly of loans including export pre-payments, commercial banks and multilateral organizations loans. In general, such debt instruments are indexed to the LIBOR (London Interbank Offer Rate) in US dollar. We take advantage of the potential correlation between commodity prices and U.S. dollar floating interest rates as a partial natural hedge for our cash flow.

f) Risk of product and input prices

Vale is also exposed to market risks including commodities price and input price volatilities. In accordance with risk management policy, risk mitigation strategies involving commodities can be used to adjust the cash flow risk profile and reduce Vale s cash flow volatility. For this kind of risk mitigation strategy, Vale uses predominantly forwards, futures or zero-cost collars.

g) Operational risk management

The operational risk management is the structured approach that Vale uses to manage uncertainty related to possible inadequate or failure in internal processes, people, systems and external events, in accordance with the principles and guidelines of ISO 31000.

The main operational risks are periodically monitored, ensuring the effectiveness of preventive and mitigating key controls in place and the execution of the risk treatment strategy (implementation of new or improved controls, changes in the risk environment, risk sharing by contracting insurance, provisioning of resources, etc.).

Therefore, the Company seeks to have a clear view of its major risks, the best cost-benefit mitigation plans and the effectiveness of the controls in place, monitoring the potential impact of operational risk and allocating capital efficiently.

h) Capital management

The Company s policy aims at establishing a capital structure that will ensure the continuity of your business in the long term. Within this perspective, the Company has been able to deliver value to stockholders through dividend payments and capital gain, and at the same time maintain a debt profile suitable for its activities, with an amortization well distributed over the years, thus avoiding a concentration in one specific period.

i) Insurance

Vale contracts several types of insurance policies, such as operational risk policy, engineering risks insurance (projects), civil responsibility, life insurance policy for their employees, among others. The coverage of these policies is similar to the ones used in general by the mining industry and is issued in line with the objectives defined by the Company, with the corporate risk management policy and the limitation imposed by the insurance and reinsurance global market. In general, the company s assets directly related with its operations are included in the coverage of insurance policies.

Insurance management is performed with the support of existing insurance committees in the various operational areas of the Company. Among the management instruments, Vale uses captive reinsurance to balance the price on reinsurance contracts with the market, as well as, enable direct access to key international markets of insurance and reinsurance.

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33. Additional information about derivatives financial instruments

a) Sensitivity analysis of derivative financial instruments.

The following tables present the potential value of the instruments given hypothetical stress scenarios for the main market risk factors that impact the derivatives positions. The scenarios were defined as follows:

Probable: the probable scenario was based on the estimated risk variables that were used on pricing the derivative instruments as at December 31, 2017

Scenario I: fair value estimated considering a 25% deterioration in the associated risk variables

Scenario II: fair value estimated considering a 50% deterioration in the associated risk variables

The curves used on the pricing of derivatives instruments were developed based on data from B3 S.A., Central Bank of Brazil, London Metals Exchange and Bloomberg.

Instrument	Instrument s main risk events	Probable	Scenario I	Scenario II
CDI vs. US$ fixed rate swap	R$ depreciation	(108)	(992)	(1.875)
	US$ interest rate inside Brazil decrease	(108)	(140)	(174)
	Brazilian interest rate increase	(108)	(115)	(123)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
TJLP vs. US$ fixed rate swap	R$ depreciation	(1.262)	(2.332)	(3.403)
	US$ interest rate inside Brazil decrease	(1.262)	(1.307)	(1.354)
	Brazilian interest rate increase	(1.262)	(1.339)	(1.411)
	TJLP interest rate decrease	(1.262)	(1.333)	(1.405)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
TJLP vs. US$ floating rate swap	R$ depreciation	(175)	(273)	(372)
		(175)	(180)	(185)

	US$ interest rate inside Brazil decrease			
	Brazilian interest rate increase	(175)	(181)	(187)
	TJLP interest rate decrease	(175)	(181)	(187)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
R$ fixed rate vs. US$ fixed rate swap	R$ depreciation	80	(188)	(456)
	US$ interest rate inside Brazil decrease	80	43	3
	Brazilian interest rate increase	80	(7)	(83)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
IPCA vs. US$ fixed rate swap	R$ depreciation	(113)	(496)	(879)
	US$ interest rate inside Brazil decrease	(113)	(129)	(146)
	Brazilian interest rate increase	(113)	(165)	(213)
	IPCA index decrease	(113)	(143)	(173)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
IPCA vs. CDI swap	Brazilian interest rate increase	280	176	81
	IPCA index decrease	280	222	166
Protected item: R$ denominated debt linked to IPCA	IPCA index decrease	n.a.	(222)	(166)
EUR fixed rate vs. US$ fixed rate swap	EUR depreciation	76	(521)	(1.118)
	Euribor increase	76	51	26
	US$ Libor decrease	76	19	(41)
Protected item: EUR denominated debt	EUR depreciation	n.a.	521	1.118

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Instrument	Instrument s main risk events	Probable	Scenario I	Scenario II
Bunker Oil protection				
Forwards and options	Bunker Oil price decrease			
Protected item: Part of costs linked to bunker oil prices	Bunker Oil price decrease	n.a.		
Nickel sales fixed price protection				
Forwards	Nickel price decrease	80	(21)	(122)
Protected item: Part of nickel revenues with fixed prices	Nickel price fluctuation	n.a.	21	122
Purchase protection program				
Nickel forwards	Nickel price increase	(1)	(4)	(7)
Protected item: Part of costs linked to nickel prices	Nickel price increase	n.a.	4	7
Copper forwards	Copper price increase	(0,1)	(0,6)	(1,1)
Protected item: Part of costs linked to copper prices	Copper price increase	n.a.	0,6	1,1
WPM warrants	WPM stock price decrease	128	64	21
Conversion options-VLI	VLI stock value increase	(188)	(303)	(453)
Options - MBR	MBR stock value decrease	831	496	243

Instrument	Main risks	Probable	Scenario I	Scenario II
Embedded derivatives- Raw material purchase (nickel)	Nickel price increase	3	(22)	(47)
Embedded derivatives- Raw material purchase (copper)	Copper price increase	0	(15)	(31)
Embedded derivatives-Gas purchase	Pellet price increase	(6)	(13)	(24)
Embedded derivatives-Guaranteed minimum return (VLI)	VLI stock value decrease	(439)	(866)	(1,561)

b) Financial counterparties ratings

The transactions of derivative instruments, cash and cash equivalents as well as investments are held with financial institutions whose exposure limits are periodically reviewed and approved by the delegated authority. The financial institutions credit risk is performed through a methodology that considers, among other information, ratings provided by international rating agencies.

The table below presents the ratings in foreign currency published by agencies Moody s and S&P regarding the main financial institutions that we had outstanding positions as of December 31, 2017.

Long term ratings by counterparty	Moody s	S&P
ANZ Australia and New Zealand Banking	Aa3	AA-
Banco ABC	Ba3	BB
Banco Bradesco	Ba3	BB
Banco do Brasil	Ba3	BB
Banco de Credito del Peru	Baal	BBB+
Banco do Nordeste	Ba3	BB
Banco Safra	Ba3	BB
Banco Santander	A3	A-
Banco Votorantim	Ba3	BB
Bank of America	A3	A-
Bank of China	Al	A
Bank of Mandiri	Baa3	BB+
Bank of Nova Scotia	A1	A+
Bank Rakyat	Baa3	BB+
Bank of Tokyo Mitsubishi UFJ	A1	A-
Banpará		BB-
Barclays	Baa2	BBB
BBVA	A3	BBB+
BNP Paribas	A2	A
BTG Pactual	Ba3	BB-
Caixa Economica Federal	Ba3	BB
Canadian Imperial Bank	A1	A+
China Construction Bank	A1	A
Citigroup	Baal	BBB+
Credit Agricole	A1	A
Credit Suisse	Baa2	BBB+
Deutsche Bank	A3	A-
Goldman Sachs	A3	BBB+
HSBC	A2	A
Intesa Sanpaolo Spa	A3	BBB
Itaú Unibanco	Ba3	BB
JP Morgan Chase & Co	A3	A-
Macquarie Group Ltd	A3	BBB
Mizuho Financial	A1	A-
Morgan Stanley	A3	BBB+
National Australia Bank NAB	Aa3	AA-
National Bank of Oman	Baa3	
Rabobank	Aa2	A+
RoyaI Bank of Canada	A1	AA-
Societe Generale	A2	A
Standard Bank Group	Ba1	
Standard Chartered	A2	BBB+
Sumitomo Mitsui Financial	A1	A-
UBS	Aa3	A-
Unicredit	Baal	BBB

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c) Market curves

(i) Products

Nickel

Maturity	Price (US$/ton)	Maturity	Price (US$/ton)	Maturity	Price (US$/ton)
SPOT	12,260	JUN18	12,833	DEC18	12,960
JAN18	12,725	JUL18	12,857	DEC19	13,167
FEB18	12,745	AUG18	12,878	DEC20	13,354
MAR18	12,767	SEP18	12,896	DEC21	13,454
APR18	12,789	OCT18	12,920		
MAY18	12,812	NOV18	12,940		

Copper

Maturity	Price (US$/lb)	Maturity	Price (US$/lb)	Maturity	Price (US$/lb)
SPOT	3.30	JUN18	3.30	DEC18	3.32
JAN18	3.28	JUL18	3.31	DEC19	3.33
FEB18	3.28	AUG18	3.31	DEC20	3.33
MAR18	3.29	SEP18	3.31	DEC21	3.33
APR18	3.29	OCT18	3.31		
MAY18	3.30	NOV18	3.31		

Bunker Oil

Maturity	Price (US$/ton)	Maturity	Price (US$/ton)	Maturity	Price (US$/ton)
SPOT	375	JUN18	374	DEC18	364
JAN18	376	JUL18	372	DEC19	303
FEB18	376	AUG18	371	DEC20	277
MAR18	376	SEP18	369	DEC21	255
APR18	375	OCT18	368		
MAY18	375	NOV18	366		

(ii) Foreign exchange and interest rates

US$-Brazil Interest

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
01/02/18	2.86	11/01/18	2.77	01/04/21	3.19
02/01/18	4.04	12/03/18	2.71	04/01/21	3.22
03/01/18	3.27	01/02/19	2.82	07/01/21	3.26
04/02/18	2.96	04/01/19	2.85	10/01/21	3.31
05/02/18	2.84	07/01/19	2.91	01/03/22	3.42
06/01/18	2.78	10/01/19	2.94	04/01/22	3.43
07/02/18	2.73	01/02/20	3.02	07/01/22	3.44
08/01/18	2.72	04/01/20	3.03	10/03/22	3.48
09/03/18	2.69	07/01/20	3.06	01/02/23	3.60
10/01/18	2.71	10/01/20	3.13	07/03/23	3.65

US$ Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	1.57	6M	1.83	11M	1.90
2M	1.62	7M	1.85	12M	1.90
3M	1.70	8M	1.87	2Y	2.11
4M	1.77	9M	1.88	3Y	2.23
5M	1.81	10M	1.89	4Y	2.29

TJLP

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
01/02/18	7.00	11/01/18	7.00	01/04/21	7.00
02/01/18	7.00	12/03/18	7.00	04/01/21	7.00
03/01/18	7.00	01/02/19	7.00	07/01/21	7.00
04/02/18	7.00	04/01/19	7.00	10/01/21	7.00
05/02/18	7.00	07/01/19	7.00	01/03/22	7.00
06/01/18	7.00	10/01/19	7.00	04/01/22	7.00
07/02/18	7.00	01/02/20	7.00	07/01/22	7.00
08/01/18	7.00	04/01/20	7.00	10/03/22	7.00
09/03/18	7.00	07/01/20	7.00	01/02/23	7.00
10/01/18	7.00	10/01/20	7.00	07/03/23	7.00

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BRL Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
01/02/18	6.89	11/01/18	6.74	01/04/21	9.06
02/01/18	6.90	12/03/18	6.80	04/01/21	9.24
03/01/18	6.82	01/02/19	6.87	07/01/21	9.40
04/02/18	6.76	04/01/19	7.11	10/01/21	9.55
05/02/18	6.73	07/01/19	7.41	01/03/22	9.66
06/01/18	6.71	10/01/19	7.78	04/01/22	9.75
07/02/18	6.66	01/02/20	8.07	07/01/22	9.84
08/01/18	6.67	04/01/20	8.38	10/03/22	9.92
09/03/18	6.70	07/01/20	8.63	01/02/23	9.99
10/01/18	6.72	10/01/20	8.88	07/03/23	10.12

Implicit Inflation (IPCA)

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
01/02/18	4.27	11/01/18	4.12	01/04/21	4.72
02/01/18	4.27	12/03/18	4.18	04/01/21	4.75
03/01/18	4.20	01/02/19	4.24	07/01/21	4.78
04/02/18	4.14	04/01/19	4.33	10/01/21	4.81
05/02/18	4.11	07/01/19	4.52	01/03/22	4.82
06/01/18	4.09	10/01/19	4.57	04/01/22	4.82
07/02/18	4.04	01/02/20	4.62	07/01/22	4.84
08/01/18	4.05	04/01/20	4.66	10/03/22	4.85
09/03/18	4.08	07/01/20	4.69	01/02/23	4.87
10/01/18	4.10	10/01/20	4.72	07/03/23	4.91

EUR Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	-0.41	6M	-0.30	11M	-0.26
2M	-0.39	7M	-0.29	12M	-0.26
3M	-0.38	8M	-0.28	2Y	-0.15
4M	-0.34	9M	-0.27	3Y	0.01
5M	-0.32	10M	-0.27	4Y	0.15

CAD Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	1.45	6M	1.73	11M	0.99
2M	1.48	7M	1.49	12M	0.91
3M	1.55	8M	1.31	2Y	2.09
4M	1.64	9M	1.19	3Y	2.22
5M	1.70	10M	1.07	4Y	2.30

Currencies-Ending rates

CAD/US$	0.7961	US$/BRL	3.3080	EUR/US$	1.1953

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Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Vale S.A.
(Registrant)

By: /s/ André Figueiredo
Director of Investor Relations

Date: March 28, 2018