

Vale S.A.  
Form 6-K  
October 24, 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**

**October 2018**

**Vale S.A.**

**Praia de Botafogo, 186  
22250-145 Rio de Janeiro, RJ, Brazil**

(Address of principal executive office)

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(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 ☒ Form 40-F ☐

(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 ☐ No ☒

(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 ☐ No ☒

(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 ☐ No ☒

(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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**Interim Financial Statements**

**September 30, 2018**

IFRS in US\$

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**Vale S.A. Interim Financial Statements**

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Report of Independent Public Accounting Firm

**To the Stockholders and Board of Directors of**

**Vale S.A.**

Rio de Janeiro - RJ

**Results of review of interim financial information**

We have reviewed the accompanying condensed consolidated statement of financial position of Vale S.A. and subsidiaries ( the Company ) as of September 30, 2018, the related condensed consolidated statements of income, comprehensive income and cash flows for the three and nine-month periods ended September 30, 2018 and 2017, and the related condensed consolidated statement of changes in equity for the nine-month periods ended on September 30, 2018 and 2017 and the related notes (collectively, the consolidated interim financial information). Based on our reviews, we are not aware of any material modifications that should be made to the condensed consolidated interim financial information for it to be in conformity with IAS 34 Interim Financial Reporting as issued by the International Accounting Standards Board (IASB).

We have previously audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statement of financial position of the Company as of December 31, 2017, and the related consolidated statements of income and comprehensive income, changes in equity and cash flows for the year then ended (not presented herein); and in our report dated February 27, 2018, we expressed an unqualified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying condensed consolidated statement of financial position as of December 31, 2017, is fairly stated, in all material respects, in

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relation to the consolidated statement of financial position from which it has been derived.

KPMG Auditores Independentes, uma sociedade simples brasileira e firma-membro da rede KPMG de firmas-membro independentes e afiliadas à KPMG International Cooperative ( KPMG International ), uma entidade suíça.

*KPMG Auditores Independentes, a Brazilian entity and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ( KPMG International ), a Swiss entity.*

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**Basis for review results**

This consolidated interim financial information is the responsibility of the Company's management. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our reviews in accordance with the standards of the PCAOB. A review of consolidated interim financial information consists principally of applying analytical procedures and making inquiries of persons responsible for financial and accounting matters. It is substantially less in scope than an audit conducted in accordance with the standards of the PCAOB, the objective of which is the expression of an opinion regarding the financial statements taken as a whole. Accordingly, we do not express such an opinion.

KPMG Auditores Independentes

Rio de Janeiro, Brazil

October 24, 2018



Table of Contents**Consolidated Income Statement**

In millions of United States dollars, except earnings per share data

		Three-month period ended September 30,		Nine-month period ended September 30,	
	Notes	2018	2017	2018	2017
<b>Continuing operations</b>					
Net operating revenue	3(c)	9,543	9,050	26,762	24,800
Cost of goods sold and services rendered	5(a)	(5,756)	(5,412)	(16,357)	(15,248)
<b>Gross profit</b>		<b>3,787</b>	<b>3,638</b>	<b>10,405</b>	<b>9,552</b>
<b>Operating expenses</b>					
Selling and administrative expenses	5(b)	(136)	(129)	(382)	(385)
Research and evaluation expenses		(87)	(91)	(248)	(236)
Pre operating and operational stoppage		(60)	(83)	(205)	(288)
Other operating expenses, net	5(c)	(61)	(151)	(295)	(316)
		<b>(344)</b>	<b>(454)</b>	<b>(1,130)</b>	<b>(1,225)</b>
Impairment and other results on non-current assets	4	(172)	(169)	(185)	123
<b>Operating income</b>		<b>3,271</b>	<b>3,015</b>	<b>9,090</b>	<b>8,450</b>
Financial income	6	111	152	310	332
Financial expenses	6	(367)	(758)	(1,795)	(2,513)
Other financial items	6	(1,007)	826	(3,457)	449
Equity results in associates and joint ventures	13	32	115	158	164
Impairment and other results in associates and joint ventures	17	(20)	(26)	(445)	(121)
<b>Income before income taxes</b>		<b>2,020</b>	<b>3,324</b>	<b>3,861</b>	<b>6,761</b>
<b>Income taxes</b>					
	7				
Current tax		77	(522)	(143)	(1,092)
Deferred tax		(724)	(457)	(561)	(561)
		<b>(647)</b>	<b>(979)</b>	<b>(704)</b>	<b>(1,653)</b>
<b>Net income from continuing operations</b>		<b>1,373</b>	<b>2,345</b>	<b>3,157</b>	<b>5,108</b>
Net income (loss) attributable to noncontrolling interests		(35)	7	(9)	53
<b>Net income from continuing operations attributable to Vale's stockholders</b>		<b>1,408</b>	<b>2,338</b>	<b>3,166</b>	<b>5,055</b>
<b>Discontinued operations</b>					
	12				
Loss from discontinued operations			(106)	(92)	(313)
Net income attributable to noncontrolling interests			2		6
<b>Loss from discontinued operations attributable to Vale's stockholders</b>			<b>(108)</b>	<b>(92)</b>	<b>(319)</b>
<b>Net income</b>		<b>1,373</b>	<b>2,239</b>	<b>3,065</b>	<b>4,795</b>

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Net income (loss) attributable to noncontrolling interests	(35)	9	(9)	59
<b>Net income attributable to Vale's stockholders</b>	<b>1,408</b>	<b>2,230</b>	<b>3,074</b>	<b>4,736</b>
<b>Earnings per share attributable to Vale's stockholders:</b>				
<b>Basic and diluted earnings per share (restated):</b>	8			
Common share (US\$)	0.27	0.43	0.59	0.91

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

Table of Contents**Consolidated Statement of Comprehensive Income**

In millions of United States dollars

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
<b>Net income</b>	<b>1,373</b>	<b>2,239</b>	<b>3,065</b>	<b>4,795</b>
<b>Other comprehensive income (loss):</b>				
<b>Items that will not be reclassified subsequently to the income statement</b>				
Translation adjustments	(1,521)	1,797	(8,069)	1,158
Retirement benefit obligations	34	45	32	(173)
Fair value adjustment to investment in equity securities	170		212	
Transfer to retained earnings			(16)	
<b>Total of items that will not be reclassified subsequently to the income statement, net of tax</b>	<b>(1,317)</b>	<b>1,842</b>	<b>(7,841)</b>	<b>985</b>
<b>Items that may be reclassified subsequently to the income statement</b>				
Translation adjustments	1,324	(684)	5,218	(66)
Net investments hedge	(81)	191	(646)	107
Transfer of realized results to net income			(78)	
<b>Total of items that may be reclassified subsequently to the income statement, net of tax</b>	<b>1,243</b>	<b>(493)</b>	<b>4,494</b>	<b>41</b>
<b>Total comprehensive income (loss)</b>	<b>1,299</b>	<b>3,588</b>	<b>(282)</b>	<b>5,821</b>
Comprehensive income (loss) attributable to noncontrolling interests	(80)	37	(150)	78
<b>Comprehensive income (loss) attributable to Vale's stockholders</b>	<b>1,379</b>	<b>3,551</b>	<b>(132)</b>	<b>5,743</b>
From continuing operations	1,379	3,537	(124)	5,758
From discontinued operations		14	(8)	(15)
	<b>1,379</b>	<b>3,551</b>	<b>(132)</b>	<b>5,743</b>

Items above are stated net of tax and the related taxes are disclosed in note 7.

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

Table of Contents**Consolidated Statement of Cash Flows**

In millions of United States dollars

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
<b>Cash flow from operating activities:</b>				
Income before income taxes from continuing operations	2,020	3,324	3,861	6,761
<b>Continuing operations adjustments for:</b>				
Equity results in associates and joint ventures	(32)	(115)	(158)	(164)
Impairment and other results on non-current assets and associates and joint ventures	192	195	630	(2)
Depreciation, amortization and depletion	849	920	2,583	2,732
Financial results, net	1,263	(220)	4,942	1,732
<b>Changes in assets and liabilities:</b>				
Accounts receivable	(149)	(936)	69	1,104
Inventories	(200)	(52)	(406)	(496)
Suppliers and contractors	336	37	(41)	363
Provision - Payroll, related charges and other remunerations	200	205	(166)	162
Proceeds from cobalt stream transaction			690	
Other assets and liabilities, net	10	(235)	(535)	(928)
	<b>4,489</b>	<b>3,123</b>	<b>11,469</b>	<b>11,264</b>
Interest on loans and borrowings paid	(248)	(407)	(903)	(1,334)
Derivatives paid, net	(22)	(113)	(35)	(223)
Interest on participative stockholders' debentures paid			(72)	(70)
Income taxes	(220)	(84)	(506)	(489)
Income taxes - Settlement program	(104)	(124)	(342)	(365)
<b>Net cash provided by operating activities from continuing operations</b>	<b>3,895</b>	<b>2,395</b>	<b>9,611</b>	<b>8,783</b>
<b>Cash flow from investing activities:</b>				
Financial investments invested	(20)	(34)	(44)	(53)
Loans and advances - net receipts (payments) (note 25)	(87)	(101)	2,454	(332)
Additions to property, plant and equipment, intangibles and investments	(692)	(913)	(2,310)	(2,927)
Proceeds from disposal of assets and investments (note 12 and 13)	116	198	1,476	721
Dividends and interest on capital received from associates and joint ventures	7	21	153	103
Other investing activities	(25)	4	(27)	(30)
<b>Net cash provided by (used in) investing activities from continuing operations</b>	<b>(701)</b>	<b>(825)</b>	<b>1,702</b>	<b>(2,518)</b>
<b>Cash flow from financing activities:</b>				
<b>Loans and borrowings</b>				
Additions	211	351	976	1,801
Repayments	(1,169)	(2,818)	(6,045)	(5,788)
<b>Transactions with stockholders:</b>				

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Dividends and interest on capital paid to stockholders	(1,876)		(3,313)	(1,454)
Dividends and interest on capital paid to noncontrolling interests	(82)	(116)	(179)	(124)
Share buyback program (note 24)	(489)		(489)	
Transactions with noncontrolling stockholders			(17)	(98)
<b>Net cash used in financing activities from continuing operations</b>	<b>(3,405)</b>	<b>(2,583)</b>	<b>(9,067)</b>	<b>(5,663)</b>
<b>Net cash used in discontinued operations (note 12)</b>		<b>(18)</b>	<b>(46)</b>	<b>(171)</b>
<b>Increase (decrease) in cash and cash equivalents</b>	<b>(210)</b>	<b>(1,031)</b>	<b>2,201</b>	<b>431</b>
Cash and cash equivalents in the beginning of the period	6,369	5,720	4,328	4,262
Effect of exchange rate changes on cash and cash equivalents	(59)	28	(312)	38
Effects of disposals of subsidiaries and merger, net of cash and cash equivalents		2	(117)	(12)
<b>Cash and cash equivalents at end of the period</b>	<b>6,100</b>	<b>4,719</b>	<b>6,100</b>	<b>4,719</b>
<b>Non-cash transactions:</b>				
Additions to property, plant and equipment - capitalized loans and borrowing costs	50	111	154	297

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

Table of Contents**Consolidated Statement of Financial Position**

In millions of United States dollars

	Notes	September 30, 2018	December 31, 2017
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	16	6,100	4,328
Accounts receivable	9	2,450	2,600
Other financial assets	11	413	2,022
Inventories	10	4,056	3,926
Prepaid income taxes		645	781
Recoverable taxes		949	1,172
Others		518	538
		<b>15,131</b>	<b>15,367</b>
Non-current assets held for sale	12		3,587
		<b>15,131</b>	<b>18,954</b>
<b>Non-current assets</b>			
Judicial deposits	22(c)	1,681	1,986
Other financial assets	11	3,217	3,232
Prepaid income taxes		561	530
Recoverable taxes		543	638
Deferred income taxes	7(a)	5,713	6,638
Others		271	267
		<b>11,986</b>	<b>13,291</b>
Investments in associates and joint ventures	13	3,146	3,568
Intangibles	14	7,790	8,493
Property, plant and equipment	15	47,433	54,878
		<b>70,355</b>	<b>80,230</b>
<b>Total assets</b>		<b>85,486</b>	<b>99,184</b>
<b>Liabilities</b>			
<b>Current liabilities</b>			
Suppliers and contractors		4,038	4,041
Loans and borrowings	16	1,373	1,703
Other financial liabilities	11	885	986
Taxes payable	7(c)	631	697
Provision for income taxes		159	355
Liabilities related to associates and joint ventures	17	292	326
Provisions	21	1,173	1,394
Dividends and interest on capital			1,441
Others		619	992
		<b>9,170</b>	<b>11,935</b>
Liabilities associated with non-current assets held for sale	12		1,179
		<b>9,170</b>	<b>13,114</b>

<b>Non-current liabilities</b>			
Loans and borrowings	16	15,437	20,786
Other financial liabilities	11	2,818	2,894
Taxes payable	7(c)	3,858	4,890
Deferred income taxes	7(a)	1,711	1,719
Provisions	21	6,367	7,027
Liabilities related to associates and joint ventures	17	761	670
Deferred revenue - Gold stream		1,669	1,849
Others		2,054	1,463
		<b>34,675</b>	<b>41,298</b>
<b>Total liabilities</b>		<b>43,845</b>	<b>54,412</b>
<b>Stockholders' equity</b>			
	24		
Equity attributable to Vale's stockholders		40,783	43,458
Equity attributable to noncontrolling interests		858	1,314
<b>Total stockholders' equity</b>		<b>41,641</b>	<b>44,772</b>
<b>Total liabilities and stockholders' equity</b>		<b>85,486</b>	<b>99,184</b>

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

Table of Contents**Consolidated Statement of Changes in Equity****In millions of United States dollars**

	Share capital	Results on conversion of shares	Capital reserve	Results from operation with noncontrolling interest	Profit reserves	Treasury stocks	Unrealized fair value gains (losses)	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale s stockholders	attr non i
<b>Balance at December 31, 2017</b>	<b>61,614</b>	<b>(152)</b>	<b>1,139</b>	<b>(954)</b>	<b>7,419</b>	<b>(1,477)</b>	<b>(1,183)</b>	<b>(22,948)</b>		<b>43,458</b>	
<b>Net income</b>									<b>3,074</b>	<b>3,074</b>	
<b>Other comprehensive income:</b>											
Retirement benefit obligations							32		(16)	16	
Net investments hedge								(646)		(646)	
Fair value adjustment to investment in equity securities							212			212	
Translation adjustments					(1,289)		58	(1,557)		(2,788)	
<b>Transactions with stockholders:</b>											
Dividends and interest on capital of Vale s stockholders									(2,054)	(2,054)	
Dividends of noncontrolling interest											
Acquisitions and disposal of noncontrolling interest											
Capitalization of noncontrolling interest advances											
Share buyback program						(489)				(489)	
<b>Balance at September 30,</b>	<b>61,614</b>	<b>(152)</b>	<b>1,139</b>	<b>(954)</b>	<b>6,130</b>	<b>(1,966)</b>	<b>(881)</b>	<b>(25,151)</b>	<b>1,004</b>	<b>40,783</b>	



2018

	Share capital	Results on conversion of shares	Capital reserve	Results from operation with noncontrolling interest	Profit reserves	Treasury stocks	Unrealized fair value gains (losses)	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale's stockholders	attributable to noncontrolling interest
<b>Balance at December 31, 2016</b>	<b>61,614</b>	<b>(152)</b>		<b>(699)</b>	<b>4,203</b>	<b>(1,477)</b>	<b>(1,147)</b>	<b>(23,300)</b>		<b>39,042</b>	
<b>Net income</b>									<b>4,736</b>	<b>4,736</b>	
<b>Other comprehensive income:</b>											
Retirement benefit obligations							(173)			(173)	
Net investments hedge								107		107	
Translation adjustments					127		(18)	936	28	1,073	
<b>Transactions with stockholders:</b>											
Dividends and interest on capital of Vale's stockholders					(658)					(658)	
Dividends of noncontrolling interest											
Acquisitions and disposal of noncontrolling interest				(277)						(277)	
Capitalization of noncontrolling interest advances											
Merger of Valepar			1,158							1,158	
<b>Balance at September 30, 2017</b>	<b>61,614</b>	<b>(152)</b>	<b>1,158</b>	<b>(976)</b>	<b>3,672</b>	<b>(1,477)</b>	<b>(1,338)</b>	<b>(22,257)</b>	<b>4,764</b>	<b>45,008</b>	

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

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**Selected Notes to the Interim Financial Statements**

**Expressed in millions of United States dollar, 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.

**2. Basis for preparation of the interim financial statements**

**a) Statement of compliance**

The condensed consolidated interim financial statements of the Company (interim financial statements) have been prepared and are being presented in accordance with IAS 34 Interim Financial Reporting of the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

**b) Basis of presentation**

The interim financial statements have been prepared to update users about relevant events and transactions occurred in the period and should be read in conjunction with the financial statements for the year ended December 31, 2017. The accounting policies, accounting estimates and judgments, risk management and measurement methods are the same as those applied when preparing the last annual financial statements, except for new accounting policies related to the application of IFRS 9 Financial instrument and IFRS 15 Revenue from contracts with customers, which were adopted by the Company from January 1, 2018. The accounting policy for recognizing and measuring income taxes in

the interim period is described in note 7.

The interim 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 interim financial statements are presented in United States dollars ( US\$ ) as the Company believes that this is the relevant currency used by international investors.

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

	Closing rate		Average rate			
	September 30, 2018	December 31, 2017	Three-month period ended September 30, 2018	September 30, 2017	Nine-month period ended September 30, 2018	September 30, 2017
US Dollar ( US\$ )	4.0039	3.3080	3.9505	3.1639	3.6055	3.1750
Canadian dollar ( CAD )	3.0992	2.6344	3.0232	2.5235	2.7973	2.4319
Australian dollar ( AUD )	2.8980	2.5849	2.8899	2.4969	2.7255	2.4320
Euro ( EUR or )	4.6545	3.9693	4.5950	3.7162	4.2969	3.5392

The issue of these interim financial statements was authorized by the Board of Directors on October 24, 2018.

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**c) Changes in significant accounting policies**

**i) IFRS 9 Financial instrument** The Company has adopted IFRS 9 Financial Instruments starting January 1, 2018. This standard addresses the classification and measurement of financial assets and liabilities, new impairment model and new rules for hedge accounting. The main changes are described below:

- Classification and measurement - Under IFRS 9, the Company's financial assets are initially measured at fair value (plus transaction costs if is not measured at fair value through profit or loss).

The investments in debt financial instruments are subsequently measured at fair value through profit or loss ( FVTPL ), amortized cost, or fair value through other comprehensive income ( FVOCI ). The classification is based on two conditions: the Company's business model in which the asset is held; and whether the contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding ( SPPI ).

The FVOCI category only includes equity instruments, which is not held for trading and the Company has irrevocably elected to designate upon initial recognition. The gains or losses from equity instruments at FVOCI are not recycled to income statement on derecognition and these financial assets are not subject to an impairment assessment under IFRS 9.

The Company has assessed its business models as of the date of IFRS 9 initial application, 1 January 2018, and no significant impact were identified in the financial statements.

- Impairment - IFRS 9 has replaced the IAS 39's incurred loss approach with a forward-looking expected credit loss (ECL) approach.

For accounts receivables, the Company has applied the standard's simplified approach and has calculated ECLs based on lifetime expected credit losses. The Company has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the economic environment and by any financial guarantees related to these accounts receivables.

For other financial assets, the ECL is based on the 12-month ECL. The 12-month ECL is the proportion of lifetime ECLs that results from default events on a financial instrument that are possible within 12 months after the reporting date. However, when there has been a significant increase in credit risk since origination, the allowance will be based on the lifetime ECL.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Company's historical experience and informed credit assessment including forward-looking information.

At each reporting date, the Company assesses whether financial assets carried at amortized cost are credit-impaired. A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

There is no significant impact on its financial statements resulting from this new impairment approach given Vale's credit rating and risk management policies in place.

- Hedge accounting - The Company has elected to adopt the new general hedge accounting model in IFRS 9. The changes introduced by IFRS 9 relating to hedge accounting currently 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 for which there are no changes introduced by this new standard.

**ii) IFRS 15 Revenue from contracts with customers** - The Company has adopted IFRS 15 Revenue from contracts with customers starting January 1, 2018. IFRS 15 establishes a comprehensive framework for revenue recognition and replaced IAS 18 Revenue, IAS 11 Construction Contracts and related

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interpretations. The Company has adopted IFRS 15 using the modified retrospective method. Accordingly, the information presented for 2017 has not been restated.

- Sales of commodities - IFRS 15 introduced 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.

There is 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.

The disaggregated revenue information is disclosed in note 3.

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

Under IFRS 15, the provision of shipping services for CFR and CIF contracts should be considered as a separate performance obligation in which a proportion of the transaction price would 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 not significant to the Company's quarter-end results ended September 30, 2018. Therefore, such revenue has not been presented separately in these interim financial statements.

- Provisionally priced commodities sales - Under IFRS 9 and 15, the treatment of the provisional pricing mechanisms embedded within the provisionally priced commodities sales remains unmodified. Therefore, these revenues are 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.

The Company is mostly exposed to the fluctuations in the iron ore and copper price.

The selling price of these products can be measured reliably at each period, since the price is quoted on an active market. The fair value of the sales price adjustment was recognized as operational revenue in the income statement.

**d) Accounting standards issued but not yet effective**

The standards and interpretations issued by IASB relevant to the Company but not yet effective are the same as those applicable when preparing the financial statements for the year ended December 31, 2017, except for IFRS 9 and IFRS 15 adopted by the Company from January 1, 2018. There is no significant impact in the interim financial statements resulting from the application of IFRS 9 and IFRS 15.

Table of Contents**3. Information by business segment and by geographic area**

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

**a) Adjusted EBITDA**

Management uses adjusted EBITDA to assess each segment's contribution to the Company's performance and to support the decision making process. Adjusted EBITDA is calculated for each segment using operating income or loss plus dividends received and interest from associates and joint ventures, and adding back the amounts charged as (i) depreciation, depletion and amortization and (ii) special events (note 4).

In 2018, the Company has allocated general and corporate expenses to Others as these expenses are not directly related to the performance of each business segment. Therefore, Others includes unallocated corporate expenses. The comparative period was restated in order to reflect this change in the criteria for allocation.

	Three-month period ended September 30, 2018						Adjusted EBITDA
	Net operating revenue	Cost of goods sold and services rendered	Selling, administrative and other operating expenses (i)	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	
<b>Ferrous minerals</b>							
Iron ore	5,594	(2,459)	(1)	(27)	(24)		3,083
Iron ore Pellets	1,627	(811)	(4)	(6)	(6)		800
Ferroalloys and manganese	104	(72)					32
Other ferrous products and services	114	(74)	(1)	(1)		7	45
	<b>7,439</b>	<b>(3,416)</b>	<b>(6)</b>	<b>(34)</b>	<b>(30)</b>	<b>7</b>	<b>3,960</b>
<b>Coal</b>	<b>425</b>	<b>(433)</b>	<b>2</b>	<b>(4)</b>		<b>26</b>	<b>16</b>
<b>Base metals</b>							
Nickel and other products	1,086	(804)	(3)	(11)	(8)		260
Copper	500	(226)	(2)	(4)			268
	<b>1,586</b>	<b>(1,030)</b>	<b>(5)</b>	<b>(15)</b>	<b>(8)</b>		<b>528</b>



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Others	93	(63)	(121)	(34)	(5)		(130)
<b>Total of continuing operations</b>	<b>9,543</b>	<b>(4,942)</b>	<b>(130)</b>	<b>(87)</b>	<b>(43)</b>	<b>33</b>	<b>4,374</b>

(i) Adjusted for a loss of US\$49 refers to provision for litigation classified as special events.

	Three-month period ended September 30, 2017						
	Net operating revenue	Cost of goods sold and services rendered	Selling, administrative and other operating expenses	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted EBITDA
<b>Ferrous minerals</b>							
Iron ore	5,131	(2,086)	(16)	(22)	(47)	1	2,961
Iron ore Pellets	1,441	(733)	(8)	(5)	(3)		692
Ferroalloys and manganese	131	(71)	(3)		1		58
Other ferrous products and services	117	(77)				12	52
	<b>6,820</b>	<b>(2,967)</b>	<b>(27)</b>	<b>(27)</b>	<b>(49)</b>	<b>13</b>	<b>3,763</b>
<b>Coal</b>	<b>360</b>	<b>(368)</b>	<b>(2)</b>	<b>(4)</b>		<b>67</b>	<b>53</b>
<b>Base metals</b>							
Nickel and other products	1,168	(883)	(21)	(14)			250
Copper	594	(246)	(5)	(6)			337
	<b>1,762</b>	<b>(1,129)</b>	<b>(26)</b>	<b>(20)</b>			<b>587</b>
Others	108	(80)	(208)	(40)	1	8	(211)
<b>Total of continuing operations</b>	<b>9,050</b>	<b>(4,544)</b>	<b>(263)</b>	<b>(91)</b>	<b>(48)</b>	<b>88</b>	<b>4,192</b>
<b>Discontinued operations (Fertilizers)</b>	<b>533</b>	<b>(490)</b>	<b>(23)</b>	<b>(3)</b>	<b>(5)</b>		<b>12</b>
<b>Total</b>	<b>9,583</b>	<b>(5,034)</b>	<b>(286)</b>	<b>(94)</b>	<b>(53)</b>	<b>88</b>	<b>4,204</b>

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Nine-month period ended September 30, 2018							
	Net operating revenue	Cost of goods sold and services rendered	Selling, administrative and other operating expenses (i)	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted EBITDA
<b>Ferrous minerals</b>							
Iron ore	14,867	(6,681)	(40)	(72)	(86)	1	7,989
Iron ore Pellets	4,730	(2,432)	(11)	(17)	(15)	105	2,360
Ferroalloys and manganese	343	(211)	(3)	(1)			128
Other ferrous products and services	347	(231)	(3)	(1)		7	119
	<b>20,287</b>	<b>(9,555)</b>	<b>(57)</b>	<b>(91)</b>	<b>(101)</b>	<b>113</b>	<b>10,596</b>
<b>Coal</b>							
	<b>1,161</b>	<b>(1,095)</b>	<b>(3)</b>	<b>(13)</b>		<b>115</b>	<b>165</b>
<b>Base metals</b>							
Nickel and other products	3,558	(2,319)	(36)	(28)	(23)		1,152
Copper	1,532	(719)	(3)	(12)			798
	<b>5,090</b>	<b>(3,038)</b>	<b>(39)</b>	<b>(40)</b>	<b>(23)</b>		<b>1,950</b>
Others	224	(200)	(407)	(104)	(17)	40	(464)
<b>Total of continuing operations</b>	<b>26,762</b>	<b>(13,888)</b>	<b>(506)</b>	<b>(248)</b>	<b>(141)</b>	<b>268</b>	<b>12,247</b>
<b>Discontinued operations (Fertilizers)</b>							
	121	(120)	(4)				(3)
<b>Total</b>	<b>26,883</b>	<b>(14,008)</b>	<b>(510)</b>	<b>(248)</b>	<b>(141)</b>	<b>268</b>	<b>12,244</b>

(i) Adjusted for a loss of US\$121 refers to provision for litigation classified as special events.

Nine-month period ended September 30, 2017							
	Net operating revenue	Cost of goods sold and services rendered	Selling, administrative and other operating expenses	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted EBITDA
<b>Ferrous minerals</b>							
Iron ore	13,501	(5,648)	27	(61)	(128)	1	7,692
Iron ore Pellets	4,231	(2,097)	(5)	(13)	(5)	37	2,148
Ferroalloys and manganese	334	(196)	(5)		(3)		130
	365	(230)	10	(1)		12	156

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Other ferrous products and services							
	18,431	(8,171)	27	(75)	(136)	50	10,126
Coal	1,165	(921)	(8)	(11)	(4)	67	288
<b>Base metals</b>							
Nickel and other products	3,309	(2,563)	(44)	(34)	(50)		618
Copper	1,562	(723)	(6)	(10)			823
	4,871	(3,286)	(50)	(44)	(50)		1,441
Others	333	(304)	(600)	(106)	(2)	53	(626)
<b>Total of continuing operations</b>	24,800	(12,682)	(631)	(236)	(192)	170	11,229
<b>Discontinued operations (Fertilizers)</b>	1,304	(1,201)	(58)	(8)	(26)		11
<b>Total</b>	26,104	(13,883)	(689)	(244)	(218)	170	11,240

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

**From continuing operations**

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
<b>Net income from continuing operations</b>	<b>1,373</b>	<b>2,345</b>	<b>3,157</b>	<b>5,108</b>
Depreciation, depletion and amortization	849	920	2,583	2,732
Income taxes	647	979	704	1,653
Financial results, net	1,263	(220)	4,942	1,732
<b>EBITDA</b>	<b>4,132</b>	<b>4,024</b>	<b>11,386</b>	<b>11,225</b>
<b>Items to reconcile adjusted EBITDA</b>				
Special events (note 4)	221	169	306	(123)
Equity results in associates and joint ventures	(32)	(115)	(158)	(164)
Impairment and other results in associates and joint ventures	20	26	445	121
Dividends received and interest from associates and joint ventures	33	88	268	170
<b>Adjusted (EBITDA) from continuing operations</b>	<b>4,374</b>	<b>4,192</b>	<b>12,247</b>	<b>11,229</b>

**From discontinued operations**

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2017	2018	2017	
<b>Loss from discontinued operations</b>	<b>(106)</b>	<b>(92)</b>	<b>(313)</b>	
Depreciation, depletion and amortization	1		1	
Income taxes	(103)	(40)	(284)	
Financial results, net		5	10	
<b>EBITDA</b>	<b>(208)</b>	<b>(127)</b>	<b>(586)</b>	
<b>Items to reconcile adjusted EBITDA</b>				
Impairment of non-current assets	220	124	597	
<b>Adjusted EBITDA from discontinued operations</b>	<b>12</b>	<b>(3)</b>	<b>11</b>	

**b) Assets by segment**

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	September 30, 2018			December 31, 2017		
		Investments in associates and joint ventures	Property, plant and equipment and intangible (i)		Investments in associates and joint ventures	Property, plant and equipment and intangible (i)
	Product inventory			Product inventory		
Ferrous minerals	1,867	1,763	30,112	1,770	1,922	36,103
Coal	122	318	1,615	82	317	1,719
Base metals	1,099	14	21,797	1,009	13	23,603
Others	13	1,051	1,699	6	1,316	1,946
<b>Total</b>	<b>3,101</b>	<b>3,146</b>	<b>55,223</b>	<b>2,867</b>	<b>3,568</b>	<b>63,371</b>

Ferrous minerals	315	123	408	928	627	1,265
Base metals	223		354	593	34	1,071
<b>Total</b>	<b>569</b>	<b>123</b>	<b>849</b>	<b>1,597</b>	<b>690</b>	<b>2,583</b>

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Ferrous minerals	278	272	456	829	1,171	1,300
Base metals	276	13	398	724	27	1,176
<b>Total</b>	<b>566</b>	<b>290</b>	<b>920</b>	<b>1,600</b>	<b>1,253</b>	<b>2,732</b>

(i) Goodwill is allocated mainly to ferrous minerals and base metals segments in the amount of US\$1,782 and US\$1,902 in September 30, 2018 and US\$2,157 and US\$1,953 in December 31, 2017, respectively.

(ii) Includes only cash outflows.

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

## **Base metals**

## **Onça Puma**

In September 2017, the Federal Court granted an injunction suspending certain of nickel mining operations at Onça Puma. The Company has appealed this decision to seek a suspension of this injunction, but it is not possible to anticipate when Onça Puma activities will resume. In December 31, 2017, the Company has calculated the recoverable amount and no losses were identified. The Company has assessed the impairment risk related to this specific cash-generating unit and concluded that no significant changes occurred that could lead to a loss that should be recognized in the income statement for the period ended September 30, 2018.

## **Cobalt streaming transaction**

In June 2018, the Company entered into two different agreements, one with Wheaton Precious Metals Corp (Wheaton) and the other with Cobalt 27 Capital Corp. (Cobalt 27), to sell a stream equivalent to 75% of the cobalt extracted as a by-product from the Voisey's Bay mine, in Canada, starting on January 1, 2021. Furthermore, the Company restarted the Voisey's Bay underground mine expansion project, which is going to increase the expected useful life of Voisey's Bay mine from 2023 to 2034. The first year of underground production is expected to be 2021, when the current operations on the open pit mine begins to ramp down.

Upon completion of the transaction, the Company received upfront payments of US\$690 in cash, US\$390 from Wheaton and US\$300 from Cobalt 27, which had been recorded as other non-current liabilities. Vale will receive additional payments of 20%, on average, of the market reference price for cobalt, for each pound of finished cobalt delivered.

Thus, from January 1, 2021 onwards, Wheaton and Cobalt 27 will be entitled to receive 42.4% and 32.6%, respectively, of cobalt equivalent to the production from the Voisey's Bay mine, while Vale remains exposed to approximately 40% of the cobalt economic exposure, as Vale retains the rights to 25% of the future cobalt production and will receive 20% additional payments for the cobalt stream. The result of the sale of the mineral rights will be accounted for once certain production thresholds have been met at Voisey's Bay mine and is not expected to be significant.

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## c) Net operating revenue by geographic area

Three-month period ended September 30, 2018					
	Ferrous minerals	Coal	Base metals	Others	Total
Americas, except United States and Brazil	187		210		397
United States of America	130		222		352
Germany	262		106		368
Europe, except Germany	532	104	423		1,059
Middle East/Africa/Oceania	631	45	7		683
Japan	516	55	126		697
China	4,078		188		4,266
Asia, except Japan and China	520	192	234		946
Brazil	583	29	70	93	775
<b>Net operating revenue</b>	<b>7,439</b>	<b>425</b>	<b>1,586</b>	<b>93</b>	<b>9,543</b>

Three-month period ended September 30, 2017					
	Ferrous minerals	Coal	Base metals	Others	Total
Americas, except United States and Brazil	137		246	15	398
United States of America	83		244	25	352
Germany	296		72		368
Europe, except Germany	463	42	536		1,041
Middle East/Africa/Oceania	529	56	3		588
Japan	601	34	101		736
China	3,684		138		3,822
Asia, except Japan and China	374	200	388		962
Brazil	653	28	34	68	783
<b>Net operating revenue</b>	<b>6,820</b>	<b>360</b>	<b>1,762</b>	<b>108</b>	<b>9,050</b>

Nine-month period ended September 30, 2018					
	Ferrous minerals	Coal	Base metals	Others	Total
Americas, except United States and Brazil	601		551		1,152
United States of America	301		731	8	1,040
Germany	873		318		1,191
Europe, except Germany	1,578	293	1,382		3,253
Middle East/Africa/Oceania	1,724	121	17		1,862
Japan	1,587	88	386		2,061
China	10,520		604		11,124
Asia, except Japan and China	1,289	564	875		2,728
Brazil	1,814	95	226	216	2,351
<b>Net operating revenue</b>	<b>20,287</b>	<b>1,161</b>	<b>5,090</b>	<b>224</b>	<b>26,762</b>



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Nine-month period ended September 30, 2017

	Ferrous minerals	Coal	Base metals	Others	Total
Americas, except United States and Brazil	417		740	70	1,227
United States of America	257		619	83	959
Germany	804		211	16	1,031
Europe, except Germany	1,534	242	1,421	14	3,211
Middle East/Africa/Oceania	1,310	144	9		1,463
Japan	1,431	113	279		1,823
China	9,811		383		10,194
Asia, except Japan and China	929	547	1,090		2,566
Brazil	1,938	119	119	150	2,326
<b>Net operating revenue</b>	<b>18,431</b>	<b>1,165</b>	<b>4,871</b>	<b>333</b>	<b>24,800</b>

**Provisionally priced commodities sales** - As at September 30, 2018, there were 26 million metric tons of iron ore (2017: 30 million metric tons) and 77 thousand metric tons of copper (2017: 106 thousand metric tons) provisionally priced based on forward prices. The final price of these sales will be determined during the fourth quarter of 2018. A 10% change in the realized prices compared to the provisionally priced sales, all other factors held constant, would increase or reduce iron ore net income by US\$178 and copper net income by US\$55.

Table of Contents**4. Special events occurred during the period**

The special events occurred during the period are those that, in the Company's judgment, have non-operational effect on the performance of the period 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:

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
Result in disposal of assets	(172)	(158)	(185)	(248)
Provision for litigation	(49)		(121)	
Nacala Logistic Corridor		(11)		504
Impairment of non-current assets				(133)
<b>Total</b>	<b>(221)</b>	<b>(169)</b>	<b>(306)</b>	<b>123</b>

**Result in disposal of assets** Refers to non-viable projects and operating assets written off through sale or obsolescence, recognized in the income statement as Impairment and other results on non-current assets.

**Provision for litigation** Refers to the update on the likelihood of loss for various litigations.

**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 US\$504.

**Impairment of non-current assets** In the second quarter of 2017, the Company placed an underground mine in Sudbury in care and maintenance and an impairment of US\$133 was recognized in the income statement.

Table of Contents**5. Costs and expenses by nature****a) Cost of goods sold and services rendered**

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
Personnel	572	565	1,698	1,668
Materials and services	1,001	1,070	2,849	2,751
Fuel oil and gas	382	331	1,113	949
Maintenance	685	778	2,098	2,254
Energy	210	246	688	693
Acquisition of products	114	145	337	468
Depreciation and depletion	814	868	2,469	2,566
Freight	1,272	890	3,113	2,320
Others	706	519	1,992	1,579
<b>Total</b>	<b>5,756</b>	<b>5,412</b>	<b>16,357</b>	<b>15,248</b>
Cost of goods sold	5,624	5,256	15,916	14,797
Cost of services rendered	132	156	441	451
<b>Total</b>	<b>5,756</b>	<b>5,412</b>	<b>16,357</b>	<b>15,248</b>

**b) Selling and administrative expenses**

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
Personnel	61	56	164	172
Services	21	19	58	48
Depreciation and amortization	18	19	50	70
Others	36	35	110	95
<b>Total</b>	<b>136</b>	<b>129</b>	<b>382</b>	<b>385</b>

**c) Other operating expenses, net**

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
Provision for litigation	49	60	121	89

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Profit sharing program	36	34	144	103
Others	(24)	57	30	124
<b>Total</b>	<b>61</b>	<b>151</b>	<b>295</b>	<b>316</b>

6. **Financial results**

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
<b>Financial income</b>				
Short-term investments	50	51	125	139
Others	61	101	185	193
	<b>111</b>	<b>152</b>	<b>310</b>	<b>332</b>
<b>Financial expenses</b>				
Loans and borrowings gross interest	(272)	(417)	(902)	(1,319)
Capitalized loans and borrowing costs	50	111	154	297
Participative stockholders' debentures	(3)	(72)	(490)	(571)
Expenses of REFIS	(48)	(94)	(157)	(328)
Others	(94)	(286)	(400)	(592)
	<b>(367)</b>	<b>(758)</b>	<b>(1,795)</b>	<b>(2,513)</b>
<b>Other financial items</b>				
Net foreign exchange gains (losses) on loans and borrowings	(689)	673	(3,182)	432
Derivative financial instruments	(105)	365	(321)	483
Other net foreign exchange gains (losses)	4	(222)	487	(351)
Net indexation gains (losses)	(217)	10	(441)	(115)
	<b>(1,007)</b>	<b>826</b>	<b>(3,457)</b>	<b>449</b>
<b>Financial results, net</b>	<b>(1,263)</b>	<b>220</b>	<b>(4,942)</b>	<b>(1,732)</b>

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Changes in deferred tax are as follows:

	Assets	Liabilities	Deferred taxes, net
<b>Balance at June 30, 2018</b>	<b>6,535</b>	<b>1,678</b>	<b>4,857</b>
Effect in income statement	(729)	(5)	(724)
Translation adjustment	(119)	23	(142)
Other comprehensive income	26	15	11
<b>Balance at September 30, 2018</b>	<b>5,713</b>	<b>1,711</b>	<b>4,002</b>

	Assets	Liabilities	Deferred taxes, net
<b>Balance at June 30, 2017</b>	<b>7,095</b>	<b>1,565</b>	<b>5,530</b>
Effect in income statement	(487)	(30)	(457)
Translation adjustment	214	41	173
Other comprehensive income	(171)	28	(199)
<b>Effect of discontinued operations</b>			
Effect in income statement	103		103
Transfer to net assets held for sale	(103)		(103)
<b>Balance at September 30, 2017</b>	<b>6,651</b>	<b>1,604</b>	<b>5,047</b>

	Assets	Liabilities	Deferred taxes, net
<b>Balance at December 31, 2017</b>	<b>6,638</b>	<b>1,719</b>	<b>4,919</b>
Effect in income statement	(549)	12	(561)
Transfers between asset and liabilities	9	9	
Translation adjustment	(815)	(40)	(775)
Other comprehensive income	402	11	391
<b>Effect of discontinued operations</b>			
Effect in income statement	40		40
Transfer to net assets held for sale	(12)		(12)
<b>Balance at September 30, 2018</b>	<b>5,713</b>	<b>1,711</b>	<b>4,002</b>

	Assets	Liabilities	Deferred taxes, net
<b>Balance at December 31, 2016</b>	<b>7,343</b>	<b>1,700</b>	<b>5,643</b>
Effect in income statement	(674)	(113)	(561)
Translation adjustment	176	78	98
Other comprehensive income	(194)	(61)	(133)
<b>Effect of discontinued operations</b>			

Effect in income statement	284		284
Transfer to net assets held for sale	(284)		(284)
<b>Balance at September 30, 2017</b>	<b>6,651</b>	<b>1,604</b>	<b>5,047</b>

**b) Income tax reconciliation Income statement**

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

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
<b>Income before income taxes</b>	<b>2,020</b>	<b>3,324</b>	<b>3,861</b>	<b>6,761</b>
<b>Income taxes at statutory rates - 34%</b>	<b>(687)</b>	<b>(1,130)</b>	<b>(1,313)</b>	<b>(2,299)</b>
<b>Adjustments that affect the basis of taxes:</b>				
Income tax benefit from interest on stockholders equity	201	125	665	377
Tax incentives	150	134	339	313
Equity results	11	40	55	57
Unrecognized tax losses of the period	(205)	(176)	(461)	(445)
Gain on sale of subsidiaries				175
Others	(117)	28	11	169
<b>Income taxes</b>	<b>(647)</b>	<b>(979)</b>	<b>(704)</b>	<b>(1,653)</b>

Income tax expense is recognized based on the estimate of the weighted average effective tax rate expected for the full year, adjusted for the tax effect of certain items recognized in full in the interim period. Therefore, the effective tax rate in the interim financial statement may differ from management's estimate of the effective tax rate for the annual financial statement.

Table of Contents**c) 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 September 30, 2018, the balance of US\$4,272 (US\$414 as current and US\$3,858 as non-current) is due in 121 remaining monthly installments, bearing interest at the SELIC rate (Special System for Settlement and Custody).

**8. Basic and diluted earnings (loss) per share**

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

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017 (i)	2018	2017 (i)
<b>Net income (loss) attributable to Vale's stockholders:</b>				
Net income from continuing operations	1,408	2,338	3,166	5,055
Loss from discontinued operations		(108)	(92)	(319)
<b>Net income</b>	<b>1,408</b>	<b>2,230</b>	<b>3,074</b>	<b>4,736</b>
<b>Thousands of shares</b>				
Weighted average number of shares outstanding - common shares (note 24b)	5,180,238	5,197,432	5,191,638	5,197,432
<b>Basic and diluted earnings per share from continuing operations:</b>				
Common share (US\$)	0.27	0.45	0.61	0.97
<b>Basic and diluted loss per share from discontinued operations:</b>				
Common share (US\$)		(0.02)	(0.02)	(0.06)
<b>Basic and diluted earnings per share:</b>				
Common share (US\$)	0.27	0.43	0.59	0.91

(i) Restated to reflect the conversion of the class A preferred shares into common shares.

The Company does not have potential outstanding shares or other instruments with dilutive effect on the earnings per share.

**9. Accounts receivable**

	September 30, 2018	December 31, 2017
Accounts receivable	2,507	2,660
Impairment of accounts receivable	(57)	(60)
	<b>2,450</b>	<b>2,600</b>
<b>Accounts receivable related to the steel sector - %</b>	<b>80.50 %</b>	<b>82.90 %</b>

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
Impairment of trade receivables recorded in the income statement	2	(2)	(2)	(6)

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



Table of Contents**10. Inventories**

	September 30, 2018		December 31, 2017	
Finished products	2,387		2,219	
Work in progress	714		648	
Consumable inventory	955		1,059	
<b>Total</b>	<b>4,056</b>		<b>3,926</b>	

  

	Three-month period ended September 30,		Nine-month period ended September 30,	
	2018	2017	2018	2017
Reversal (provision) for net realizable value	3	25	(14)	84

Finished and work in progress product inventory by segments is presented in note 3(b).

**11. Other financial assets and liabilities**

	Current		Non-Current	
	September 30, 2018	December 31, 2017	September 30, 2018	December 31, 2017
<b>Other financial assets</b>				
Financial investments	6	18		
Loans			155	151
Derivative financial instruments (note 20)	73	106	347	453
Investments in equity securities (note 12)			1,110	
Related parties - Loans (note 25)	334	1,898	1,605	2,628
	<b>413</b>	<b>2,022</b>	<b>3,217</b>	<b>3,232</b>
<b>Other financial liabilities</b>				
Derivative financial instruments (note 20)	382	104	492	686
Related parties (note 25)	503	882	959	975
Participative stockholders' debentures			1,367	1,233
	<b>885</b>	<b>986</b>	<b>2,818</b>	<b>2,894</b>

**Participative stockholders' debentures**

On October 2, 2018 (subsequent event), the Company paid the amount of R\$261 million (US\$63) as remuneration to stockholders' debentures.

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

	December 31, 2017 Fertilizers
<b>Assets</b>	
Accounts receivable	90
Inventories	460
Other current assets	110
Investments in associates and joint ventures	83
Property, plant and equipment and Intangibles	2,149
Other non-current assets	695
<b>Total assets</b>	<b>3,587</b>
<b>Liabilities</b>	
Suppliers and contractors	324
Other current liabilities	215
Other non-current liabilities	640
<b>Total liabilities</b>	<b>1,179</b>
<b>Net non-current assets held for sale</b>	<b>2,408</b>

Table of Contents**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.

In January 2018, the Company and Mosaic concluded the transaction and the Company received US\$1,080 in cash and 34.2 million common shares, corresponding to 8.9% of Mosaic's equity after the issuance of these shares (US\$899, based on the Mosaic's quotation at closing date of the transaction) and a loss of US\$55 was recognized in the income statement from discontinued operations.

Mosaic's shares received were accounted for as an equity investment measured at fair value through other comprehensive income. For the three and nine-month periods ended September 30, 2018, the Company recognized a gain of US\$170 and US\$212 in other comprehensive income as Fair value adjustment to investment in equity securities .

**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. In May 2018, the transaction was concluded and the Company received US\$255 in cash and a loss of US\$69 was recognized in the second quarter of 2018, in the income statement from discontinued operations.

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

**Income statement**

	Three-month period ended September 30, 2017	2018	Nine-month period ended September 30, 2017
<b>Discontinued operations</b>			
Net operating revenue	533	121	1,304
Cost of goods sold and services rendered	(491)	(120)	(1,201)
Operating expenses	(31)	(4)	(93)

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Impairment of non-current assets	(220)	(124)	(597)
<b>Operating loss</b>	<b>(209)</b>	<b>(127)</b>	<b>(587)</b>
Financial Results, net		(5)	(10)
<b>Loss before income taxes</b>	<b>(209)</b>	<b>(132)</b>	<b>(597)</b>
Income taxes	103	40	284
<b>Loss from discontinued operations</b>	<b>(106)</b>	<b>(92)</b>	<b>(313)</b>
Net income attributable to noncontrolling interests	2		6
<b>Loss attributable to Vale's stockholders</b>	<b>(108)</b>	<b>(92)</b>	<b>(319)</b>

Statement of cash flow

	Three-month period ended September 30, 2017	2018	Nine-month period ended September 30, 2017
<b>Discontinued operations</b>			
<b>Cash flow from operating activities</b>			
Loss before income taxes	(209)	(132)	(597)
<b>Adjustments:</b>			
Depreciation, amortization and depletion	1		1
Impairment of non-current assets	220	124	597
Others		5	
Increase (decrease) in assets and liabilities	75	(34)	77
<b>Net cash provided by (used in) operating activities</b>	<b>87</b>	<b>(37)</b>	<b>78</b>
<b>Cash flow from investing activities</b>			
Additions to property, plant and equipment	(71)	(9)	(215)
<b>Net cash used in investing activities</b>	<b>(71)</b>	<b>(9)</b>	<b>(215)</b>
<b>Cash flow from financing activities</b>			
<b>Loans and borrowings</b>			
Repayments	(34)		(34)
<b>Net cash used in financing activities</b>	<b>(34)</b>		<b>(34)</b>
<b>Net cash used in discontinued operations</b>	<b>(18)</b>	<b>(46)</b>	<b>(171)</b>

Table of Contents**13. Investments in associates and joint ventures****a) Changes during the period**

Changes in investments in associates and joint ventures as follows:

	Associates	Joint ventures	Total
<b>Balance at December 31, 2017</b>	<b>1,441</b>	<b>2,127</b>	<b>3,568</b>
Additions		23	23
Translation adjustment	(211)	(324)	(535)
Equity results in income statement	28	130	158
Dividends declared		(154)	(154)
Transfer from non-current assets held for sale (i)	87		87
Others	6	(7)	(1)
<b>Balance at September 30, 2018</b>	<b>1,351</b>	<b>1,795</b>	<b>3,146</b>

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(i) Refers to 18% interest held by Vale Fertilizantes at Ultrafertil which was transferred to Vale as part of the final settlement in January 2018 (note 12)

	Associates	Joint ventures	Total
<b>Balance at December 31, 2016</b>	<b>1,437</b>	<b>2,259</b>	<b>3,696</b>
Additions	1	90	91
Translation adjustment	35	56	91
Equity results in income statement	47	117	164
Equity results in statement of comprehensive income		(172)	(172)
Dividends declared	(43)	(91)	(134)
Others		119	119
<b>Balance at September 30, 2017</b>	<b>1,477</b>	<b>2,378</b>	<b>3,855</b>

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

**b) Guarantees provided**

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As of September 30, 2018, 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. were US\$320 and US\$1,405, respectively.

### c) 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 US\$690. 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.

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 consideration received was recognized in the statement of cash flows in Proceeds from disposal of assets and investments in the amount of US\$435 and Transactions with noncontrolling stockholders in the amount of US\$255.

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 are disclosed in note 25.

Table of Contents**Investments in associates and joint ventures (continued)**

Associates and joint ventures	% ownership	Investments in associates and joint ventures										
		% voting capital	Three-month period ended		Equity results in the income statement			Dividends received				
			September 30, 2018	December 31, 2017	Three-month period ended September 30, 2018	Three-month period ended September 30, 2017	Three-month period ended September 30, 2018	Three-month period ended September 30, 2017	Three-month period ended September 30, 2018	Three-month period ended September 30, 2017		
<b>Ferrous minerals</b>												
Baovale Mineração S.A. Companhia	50.00	50.00	26	26	1	1	4	5			1	
Coreano-Brasileira de Pelotização Companhia	50.00	50.00	100	89	16	11	49	36			15	
Hispano-Brasileira de Pelotização (i) Companhia	50.89	51.00	80	82	15	9	38	30			23	5
Ítalo-Brasileira de Pelotização (i) Companhia	50.90	51.00	91	80	14	9	45	29			33	17
Nipo-Brasileira de Pelotização (i)	51.00	51.11	169	137	31	22	92	68			34	15
MRS Logística S.A.	48.16	46.75	453	517	12	22	42	59				
VLI S.A.	37.60	37.60	822	968	21	17	22	23	7	12	7	12
Zhuhai YPM Pellet Co.	25.00	25.00	22	23								
			1,763	1,922	110	91	292	250	7	12	113	49
<b>Coal</b>												
Henan Longyu Energy Resources Co., Ltd.	25.00	25.00	318	317	1	4	13	20				
			318	317	1	4	13	20				
<b>Base metals</b>												
Korea Nickel Corp.	25.00	25.00	14	13	1	1	2	1				
			14	13	1	1	2	1				
<b>Others</b>												
Aliança Geração de Energia S.A. (i)	55.00	55.00	473	571	2	3	27	18		9	25	20
Aliança Norte Energia Participações S.A. (i)	51.00	51.00	156	160	4	(3)	14					
California Steel Industries, Inc.	50.00	50.00	249	200	24	10	64	35			15	13
Companhia Siderúrgica do Pecém	50.00	50.00		262	(119)	(1)	(243)	(143)				
Mineração Rio do Norte S.A.	40.00	40.00	85	101	2	9	(4)	10				21
Others			88	22	7	1	(7)	(27)				
			1,051	1,316	(80)	19	(149)	(107)		9	40	54
<b>Total</b>			<b>3,146</b>	<b>3,568</b>	<b>32</b>	<b>115</b>	<b>158</b>	<b>164</b>	<b>7</b>	<b>21</b>	<b>153</b>	<b>103</b>

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(i) Although the Company held a majority of the voting capital, the entities are accounted under equity method due to the stockholders agreement where relevant decisions are shared with other parties.



Table of Contents**14. Intangibles**

Changes in intangibles are as follows:

	Goodwill	Concessions	Right of use	Software	Total
<b>Balance at December 31, 2017</b>	<b>4,110</b>	<b>4,002</b>	<b>152</b>	<b>229</b>	<b>8,493</b>
Additions		698		7	705
Disposals		(21)			(21)
Amortization		(95)	(6)	(80)	(181)
Translation adjustment	(426)	(747)	(8)	(25)	(1,206)
<b>Balance at September 30, 2018</b>	<b>3,684</b>	<b>3,837</b>	<b>138</b>	<b>131</b>	<b>7,790</b>
Cost	3,684	4,775	218	1,082	9,759
Accumulated amortization		(938)	(80)	(951)	(1,969)
<b>Balance at September 30, 2018</b>	<b>3,684</b>	<b>3,837</b>	<b>138</b>	<b>131</b>	<b>7,790</b>

	Goodwill	Concessions	Right of use	Software	Total
<b>Balance at December 31, 2016</b>	<b>3,081</b>	<b>3,301</b>	<b>147</b>	<b>342</b>	<b>6,871</b>
Additions		740		23	763
Disposals		(5)			(5)
Amortization		(115)	(1)	(108)	(224)
Translation adjustment	167	94	9	12	282
Merger of Valepar	964				964
<b>Balance at September 30, 2017</b>	<b>4,212</b>	<b>4,015</b>	<b>155</b>	<b>269</b>	<b>8,651</b>
Cost	4,212	5,256	246	1,608	11,322
Accumulated amortization		(1,241)	(91)	(1,339)	(2,671)
<b>Balance at September 30, 2017</b>	<b>4,212</b>	<b>4,015</b>	<b>155</b>	<b>269</b>	<b>8,651</b>

**Concessions**

During the third quarter of 2018, the Company started the process of early renewal of its railway concessions, which expire in 2027. The early renewal of the concessions will be submitted to the Board of Directors, subject to the analysis of the compensations required by the government, including the implementation of the Midwest Integration Railroad ( FICO ), totaling 377 km between the Brazilian states of Mato Grosso and Goias. The compensations required for the renewal will be formalized after the stage of public hearing.

**15. Property, plant and equipment**

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Changes in property, plant and equipment are as follows:

	Land	Building	Facilities	Equipment	Mineral properties	Others	Constructions in progress	Total
<b>Balance at December 31, 2017</b>	<b>718</b>	<b>12,100</b>	<b>11,786</b>	<b>6,893</b>	<b>9,069</b>	<b>8,193</b>	<b>6,119</b>	<b>54,878</b>
Additions (i)							1,669	1,669
Disposals		(38)	(41)	(220)	(5)	(55)	(14)	(373)
Asset retirement obligation					(125)			(125)
Depreciation, amortization and depletion		(429)	(519)	(628)	(391)	(503)		(2,470)
Translation adjustment	(97)	(1,525)	(1,668)	(625)	(678)	(1,102)	(451)	(6,146)
Transfers	7	534	1,286	942	339	739	(3,847)	
<b>Balance at September 30, 2018</b>	<b>628</b>	<b>10,642</b>	<b>10,844</b>	<b>6,362</b>	<b>8,209</b>	<b>7,272</b>	<b>3,476</b>	<b>47,433</b>
Cost	628	17,809	17,166	12,325	16,620	11,602	3,476	79,626
Accumulated depreciation		(7,167)	(6,322)	(5,963)	(8,411)	(4,330)		(32,193)
<b>Balance at September 30, 2018</b>	<b>628</b>	<b>10,642</b>	<b>10,844</b>	<b>6,362</b>	<b>8,209</b>	<b>7,272</b>	<b>3,476</b>	<b>47,433</b>

	Land	Building	Facilities	Equipment	Mineral properties	Others	Constructions in progress	Total
<b>Balance at December 31, 2016</b>	<b>724</b>	<b>10,674</b>	<b>9,471</b>	<b>6,794</b>	<b>8,380</b>	<b>7,515</b>	<b>11,861</b>	<b>55,419</b>
Additions (i)							2,229	2,229
Disposals			(48)	(31)	(125)	(115)	(141)	(460)
Asset retirement obligation					(74)			(74)
Depreciation, amortization and depletion		(440)	(543)	(638)	(480)	(568)		(2,669)
Translation adjustment	18	321	282	124	452	285	353	1,835
Transfers	19	1,821	2,652	734	655	1,399	(7,280)	
<b>Balance at September 30, 2017</b>	<b>761</b>	<b>12,376</b>	<b>11,814</b>	<b>6,983</b>	<b>8,808</b>	<b>8,516</b>	<b>7,022</b>	<b>56,280</b>
Cost	761	19,195	18,463	12,888	17,226	12,841	7,022	88,396
Accumulated depreciation		(6,819)	(6,649)	(5,905)	(8,418)	(4,325)		(32,116)
<b>Balance at September 30, 2017</b>	<b>761</b>	<b>12,376</b>	<b>11,814</b>	<b>6,983</b>	<b>8,808</b>	<b>8,516</b>	<b>7,022</b>	<b>56,280</b>

(i) Includes capitalized borrowing costs.

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There are no material changes to the net book value of consolidated property, plant and equipment pledged to secure judicial claims and loans and borrowings (note 16(c)) compared to those disclosed in the financial statements as at December 31, 2017.

## 16. Loans, borrowings, cash and cash equivalents and financial investments

### a) Net debt

The Company analyzes the net debt in order to ensure its business continuity in the long term.

	September 30, 2018	December 31, 2017
Debt contracts in the international markets	13,027	17,288
Debt contracts in Brazil	3,783	5,201
<b>Total of loans and borrowings</b>	<b>16,810</b>	<b>22,489</b>
(-) Cash and cash equivalents	6,100	4,328
(-) Financial investments (note 11)	6	18
<b>Net debt</b>	<b>10,704</b>	<b>18,143</b>

### b) Cash and cash equivalents

Cash and cash equivalents include cash, immediately redeemable deposits and short-term investments with an insignificant risk of change in value. They are readily convertible to cash, partly in R\$, indexed to the Brazilian Interbank Interest rate ( DI Rate or CDI ) and partly in US\$, denominated time deposits.

### c) Loans and borrowings

### i) Total debt

Current liabilities

Non-current liabilities

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	September 30, 2018	December 31, 2017	September 30, 2018	December 31, 2017
<b>Debt contracts in the international markets</b>				
<b>Floating rates in:</b>				
US\$	389	310	1,786	2,764
EUR				240
<b>Fixed rates in:</b>				
US\$	6		9,342	12,588
EUR			1,104	900
Other currencies	34	17	163	206
<b>Accrued charges</b>	<b>203</b>	<b>263</b>		
	<b>632</b>	<b>590</b>	<b>12,395</b>	<b>16,698</b>
<b>Debt contracts in Brazil</b>				
<b>Floating rates in:</b>				
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	382	447	2,406	3,195
Basket of currencies and US\$ indexed to LIBOR	265	339	529	708
<b>Fixed rates in:</b>				
R\$	55	68	102	173
<b>Accrued charges</b>	<b>39</b>	<b>259</b>	<b>5</b>	<b>12</b>
	<b>741</b>	<b>1,113</b>	<b>3,042</b>	<b>4,088</b>
	<b>1,373</b>	<b>1,703</b>	<b>15,437</b>	<b>20,786</b>

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

	Principal			Estimated future interest payments (i)	
	Bank loans	Capital markets	Development agencies	Total	
2018	234		197	431	223
2019	145		730	875	891
2020	178	331	638	1,147	854
2021	346	380	586	1,312	784
Between 2022 and 2026	1,532	4,607	1,000	7,139	2,958
2027 onwards	92	5,490	77	5,659	4,197
	<b>2,527</b>	<b>10,808</b>	<b>3,228</b>	<b>16,563</b>	<b>9,907</b>

(i) Estimated future payments of interest, calculated based on interest rate curves and foreign exchange rates applicable as at September 30, 2018 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.

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At September 30, 2018, the average annual interest rates by currency are as follows:

Loans and borrowings	Average interest rate (i)	Total debt
US\$	5.59%	12,495
R\$ (ii)	9.40%	2,982
EUR (iii)	3.81%	1,136
Other currencies	3.00%	197
		<b>16,810</b>

(i) In order to determine the average interest rate for debt contracts with floating rates, the Company used the rate applicable at September 30, 2018.

(ii) R\$ denominated debt that bears interest at IPCA, CDI, TR or TJLP, plus spread. For a total of US\$1,789 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 1.95% 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

	December 31, 2017	Additions	Cash flow Repayments	Interest paid	Transferences	Non-cash changes Effect of exchange rate	Interest accretion	September 30, 2018
<b>Loans and borrowings</b>								
Current	1,703		(6,045)	(903)	5,751	(122)	989	1,373
Non-current	20,786	976			(5,751)	(582)	8	15,437
<b>Total</b>	<b>22,489</b>	<b>976</b>	<b>(6,045)</b>	<b>(903)</b>		<b>(704)</b>	<b>997</b>	<b>16,810</b>

## iii) Credit and financing lines

Type	Contractual currency	Date of agreement	Period of the agreement	Total amount	Available amount September 30, 2018
<b>Credit lines</b>					
Revolving credit facilities	US\$	May 2015	5 years	3,000	3,000
Revolving credit facilities	US\$	June 2017	5 years	2,000	2,000

**Financing lines**

BNDES - CLN 150	R\$	September 2012	10 years	970	5
BNDES - S11D e S11D Logística	R\$	May 2014	10 years	1,539	252

**iv) Repayments**

During the first half of 2018, the Company conducted a cash tender offer for Vale Overseas 5.875% guaranteed notes due 2021, 4.375% guaranteed notes due 2022 and a cash tender offer for Vale S.A. 5.625% guaranteed notes due 2042 and repurchased a total of US\$2,730. The Company also redeemed all of Vale Overseas 4.625% guaranteed notes due 2020 totaling US\$499.

**v) Guarantees**

As at September 30, 2018 and December 31, 2017, loans and borrowings are secured by property, plant and equipment in the amount of US\$221 and US\$275, 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 and interest coverage. The Company has not identified any instances of noncompliance as at September 30, 2018.

Table of Contents**17. Liabilities related to associates and joint ventures**

The movement of the provision to comply with the obligations under the agreement related to the dam failure of Samarco Mineração S.A. (Samarco), which is a Brazilian joint venture between Vale S.A. and BHP Billiton Brasil Ltda. (BHPB), in the nine-month periods ended September 30, 2018 and 2017 are as follows:

	2018	2017
<b>Balance at January 01,</b>	<b>996</b>	<b>1,077</b>
Payments	(194)	(216)
Present value valuation	47	136
Provision increase	391	
Translation adjustment	(187)	29
<b>Balance at September 30,</b>	<b>1,053</b>	<b>1,026</b>
Current liabilities	292	301
Non-current liabilities	761	725
<b>Liabilities</b>	<b>1,053</b>	<b>1,026</b>

In 2018, the Fundação Renova reviewed the estimates for the expenditures required to mitigate and compensate for the impacts of the disruption from Samarco's tailing dam. As a result of this revision, Vale S.A. recognized in the second quarter of 2018 an additional provision of US\$391 (R\$1,476 million), which amounts to the present value of Vale's new estimated secondary responsibility to support the Renova Foundation works and is equivalent to 50% of Samarco's additional obligations over the next 12 years.

In addition to the provision above, Vale S.A. made available in the three and nine-month periods ended September 30, 2018 the amount of US\$22 and US\$56, respectively, 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 December 31, 2018 up to US\$33 to support Samarco's 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.

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 22.





Table of Contents**18. Financial instruments classification**

	September 30, 2018			December 31, 2017			
	Amortized cost	At fair value through OCI	At fair value through profit or loss	Total	Amortized cost	At fair value through profit or loss	Total
<b>Financial assets</b>							
<b>Current</b>							
Cash and cash equivalents	6,100			6,100	4,328		4,328
Financial investments	6			6	18		18
Derivative financial instruments			73	73		106	106
Accounts receivable	2,472		(22)	2,450	2,600		2,600
Related parties	334			334	1,898		1,898
	<b>8,912</b>		<b>51</b>	<b>8,963</b>	<b>8,844</b>	<b>106</b>	<b>8,950</b>
<b>Non-current</b>							
Derivative financial instruments			347	347		453	453
Investments in equity securities		1,110		1,110			
Loans	155			155	151		151
Related parties	1,605			1,605	2,628		2,628
	<b>1,760</b>	<b>1,110</b>	<b>347</b>	<b>3,217</b>	<b>2,779</b>	<b>453</b>	<b>3,232</b>
<b>Total of financial assets</b>	<b>10,672</b>	<b>1,110</b>	<b>398</b>	<b>12,180</b>	<b>11,623</b>	<b>559</b>	<b>12,182</b>
<b>Financial liabilities</b>							
<b>Current</b>							
Suppliers and contractors	4,038			4,038	4,041		4,041
Derivative financial instruments			382	382		104	104
Loans and borrowings	1,373			1,373	1,703		1,703
Related parties	503			503	882		882
	<b>5,914</b>		<b>382</b>	<b>6,296</b>	<b>6,626</b>	<b>104</b>	<b>6,730</b>
<b>Non-current</b>							
Derivative financial instruments			492	492		686	686
Loans and borrowings	15,437			15,437	20,786		20,786
Related parties	959			959	975		975
Participative stockholders debentures			1,367	1,367		1,233	1,233
	<b>16,396</b>		<b>1,859</b>	<b>18,255</b>	<b>21,761</b>	<b>1,919</b>	<b>23,680</b>
<b>Total of financial liabilities</b>	<b>22,310</b>		<b>2,241</b>	<b>24,551</b>	<b>28,387</b>	<b>2,023</b>	<b>30,410</b>

**19. Fair value estimate**

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

	September 30, 2018				December 31, 2017		
	Level 1	Level 2	Level 3	Total	Level 2	Level 3	Total
<b>Financial assets</b>							
Derivative financial instruments		179	241	420	289	270	559
Accounts receivable		(22)		(22)			
Investments in equity securities	1,110			1,110			
<b>Total</b>	<b>1,110</b>	<b>157</b>	<b>241</b>	<b>1,508</b>	<b>289</b>	<b>270</b>	<b>559</b>
<b>Financial liabilities</b>							
Derivative financial instruments		708	166	874	581	209	790
Participative stockholders debentures		1,367		1,367	1,233		1,233
<b>Total</b>		<b>2,075</b>	<b>166</b>	<b>2,241</b>	<b>1,814</b>	<b>209</b>	<b>2,023</b>

The Company changed its accounting estimate on the calculation of the participative stockholders debentures from January 1, 2018. The Company has replaced in the calculation the assumption of spot price at the reporting date to the weighted average price traded on the market within the last month of the quarter.

There were no transfers between Level 1 and Level 2, or between Level 2 and Level 3 for the nine-month period ended on September 30, 2018.

The following table presents the changes in Level 3 assets and liabilities for the nine-month period ended on September 30, 2018:

	Derivative financial instruments	
	Financial assets	Financial liabilities
<b>Balance at December 31, 2017</b>	<b>270</b>	<b>209</b>
Gains and losses recognized in income statement	(29)	(43)
<b>Balance at September 30, 2018</b>	<b>241</b>	<b>166</b>

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**Methods and techniques of evaluation**

**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 (note 26j).

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 where 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 liabilities 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 liabilities 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 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.

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

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

Financial liabilities	Balance	Fair value	Level 1	Level 2
<b>September 30, 2018</b>				
Debt principal	16,563	17,499	11,867	5,632
<b>December 31, 2017</b>				
Debt principal	21,955	23,088	14,935	8,153

Due to the short-term cycle, the fair value of cash and cash equivalents balances, financial investments, accounts receivable and accounts payable approximate their book values.

Table of Contents**20. Derivative financial instruments****a) Derivatives effects on the statement of financial position**

	September 30, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
<b>Assets</b>				
<b>Derivatives not designated as hedge accounting</b>				
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	12		38	
IPCA swap	3	72	9	82
Eurobonds swap		25		27
Pré-dolar swap	18		22	32
	<b>33</b>	<b>97</b>	<b>69</b>	<b>141</b>
<b>Commodities price risk</b>				
Nickel	2		22	3
Bunker oil	38		15	
	<b>40</b>		<b>37</b>	<b>3</b>
<b>Others (note 26)</b>		250		309
		<b>250</b>		<b>309</b>
<b>Total</b>	<b>73</b>	<b>347</b>	<b>106</b>	<b>453</b>

	September 30, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
<b>Liabilities</b>				
<b>Derivatives not designated as hedge accounting</b>				
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	320	233	95	410
IPCA swap	41	53		41
Eurobonds swap	5		4	
Pré-dolar swap	10	38	5	24
	<b>376</b>	<b>324</b>	<b>104</b>	<b>475</b>
<b>Commodities price risk</b>				
Nickel	6	1		
	<b>6</b>	<b>1</b>		
<b>Others (note 26)</b>		167		211
		<b>167</b>		<b>211</b>
<b>Total</b>	<b>382</b>	<b>492</b>	<b>104</b>	<b>686</b>

## b) Effects of derivatives on the income statement and cash flow

	Gain (loss) recognized in the income statement			
	Three-month period ended September 30, 2018	2017	Nine-month period ended September 30, 2018	2017
<b>Derivatives not designated as hedge accounting</b>				
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	(67)	186	(264)	273
IPCA swap	(5)	48	(50)	54
Eurobonds swap	1	21	(7)	23
Euro forward				46
Pré-dolar swap	(9)	40	(42)	50
	<b>(80)</b>	<b>295</b>	<b>(363)</b>	<b>446</b>
<b>Commodities price risk</b>				
Nickel	(20)	10	(10)	6
Bunker oil	(9)	(6)	57	(96)
	<b>(29)</b>	<b>4</b>	<b>47</b>	<b>(90)</b>
<b>Others</b>	<b>4</b>	<b>66</b>	<b>(5)</b>	<b>127</b>
<b>Total</b>	<b>(105)</b>	<b>365</b>	<b>(321)</b>	<b>483</b>

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	Financial settlement inflows (outflows)			
	Three-month period ended September 30, 2018	2017	Nine-month period ended September 30, 2018	2017
<b>Derivatives not designated as hedge accounting</b>				
<b>Foreign exchange and interest rate risk</b>				
CDI & TJLP vs. US\$ fixed and floating rate swap	(42)	(97)	(104)	(138)
IPCA swap		(20)	7	(20)
Eurobonds swap			(4)	(39)
Pré-dólar swap	(3)		13	(1)
	<b>(45)</b>	<b>(117)</b>	<b>(88)</b>	<b>(198)</b>
<b>Commodities price risk</b>				
Nickel	(2)	4	20	(2)
Bunker oil	25		33	(23)
	<b>23</b>	<b>4</b>	<b>53</b>	<b>(25)</b>
<b>Total</b>	<b>(22)</b>	<b>(113)</b>	<b>(35)</b>	<b>(223)</b>

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

	Last maturity dates
Currencies and interest rates	January 2024
Bunker oil	December 2018
Nickel	September 2020
Others	December 2027

### c) Hedge in foreign operations

As at September 30, 2018 the carrying value of the debts designated as instrument hedge of the Company's investment in foreign operations (Vale International S.A. and Vale International Holding GmbH; hedging objects) are US\$3,250 and EUR750, respectively. The foreign exchange loss of US\$122 and US\$978 (US\$81 and US\$646, net of taxes), was recognized in the Cumulative translation adjustments in stockholders' equity for the three and nine-month period ended September 30, 2018, respectively, while the foreign exchange gains of US\$290 and US\$162 (US\$191 and US\$107, net of taxes), were recognized for the three and nine-month period ended September 30, 2017, respectively. This hedge was highly effective throughout the period ended September 30, 2018.

## 21. Provisions

### Current liabilities

### Non-current liabilities

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	September 30, 2018	December 31, 2017	September 30, 2018	December 31, 2017
Payroll, related charges and other remunerations	879	1,101		
Onerous contracts	110	102	268	364
Environment restoration	17	30	89	79
Asset retirement obligations	63	87	2,821	3,081
Provisions for litigation (note 22)			1,296	1,473
Employee postretirement obligations (note 23)	104	74	1,893	2,030
<b>Provisions</b>	<b>1,173</b>	<b>1,394</b>	<b>6,367</b>	<b>7,027</b>



Table of Contents**22. Litigation****a) Provision for litigation**

Vale is a 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.

Changes in provision for litigation are as follows:

	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
<b>Balance at December 31, 2017</b>	<b>750</b>	<b>131</b>	<b>582</b>	<b>10</b>	<b>1,473</b>
Additions (reversals)	14	18	93	(4)	121
Payments	(7)	(17)	(78)	(2)	(104)
Additions - discontinued operations	21	1	16		38
Indexation and interest	18	15	(5)	(1)	27
Translation adjustment	(126)	(30)	(103)		(259)
<b>Balance at September 30, 2018</b>	<b>670</b>	<b>118</b>	<b>505</b>	<b>3</b>	<b>1,296</b>

	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
<b>Balance at December 31, 2016</b>	<b>214</b>	<b>84</b>	<b>534</b>	<b>7</b>	<b>839</b>
Additions (reversals)	(15)	13	87	4	89
Payments	(91)	(7)	(83)	(1)	(182)
Merger of Valepar	631				631
Indexation and interest	3	12	31		46
Translation adjustment	19	3	16		38
<b>Balance at September 30, 2017</b>	<b>761</b>	<b>105</b>	<b>585</b>	<b>10</b>	<b>1,461</b>

**b) Contingent liabilities**

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Contingent liabilities are 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. The contingent liabilities are as follows:

	September 30, 2018	December 31, 2017
Tax litigation	8,410	8,840
Civil litigation	1,636	1,623
Labor litigation	1,635	1,952
Environmental litigation	1,977	2,190
<b>Total</b>	<b>13,658</b>	<b>14,605</b>

**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 new proceedings related to PIS, COFINS, CFEM, ICMS e ISS and the application of interest and inflation adjustments to the disputed amounts.

**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. The changes reported in the period resulted, mainly from review of the process related to commercial divergences of supply contracts.

**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, non-compliance with existing environmental licenses or damage to the environment.

Table of Contents**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.

	September 30, 2018	December 31, 2017
Tax litigation	1,027	1,201
Civil litigation	41	60
Labor litigation	598	712
Environmental litigation	15	13
<b>Total</b>	<b>1,681</b>	<b>1,986</b>

**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 (Espírito Santo and Minas Gerais) and other governmental authorities have initiated a public civil lawsuit against Samarco and its shareholders, Vale S.A. and BHPB ( ACP ), with an estimated value indicated by the plaintiffs of US\$5 billion (R\$20.2 billion).

The Framework Agreement signed in March 2016, was ratified by the Regional Federal 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 action, 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 US\$300 (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.

On June 2018, the parties that proposed the ACP mentioned above, together with the Federal Public Prosecutor's Office and the Public Defender's Offices of the Union and the States of Minas Gerais and Espírito Santo, entered into a new Agreement ( Term of Adjustment of Conduct ), which extinguishes important lawsuits, including the ACP, without judgment of merit. Afterwards, on August 8, 2018, the Agreement was ratified by the judge of the 12th Federal Court of Belo Horizonte, producing its legal and procedural effects.

*(ii) Public civil action filed by Federal Prosecution Office*

On May 3, 2016, the Federal Prosecution Office (MPF) filed a public civil action against Samarco and its shareholders and presented several claims, 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 US\$38.7 billion (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, which was, nevertheless, extended by the parties to late June 2018.

This First Agreement establishes a timeline and actions to set the ground for conciliation of two public civil actions in the amounts of US\$5 billion (R\$20.2 billion) and US\$38.7 billion (R\$155 billion), mentioned above.

In addition, the First Agreement provides for: (a) the appointment of experts to give support to 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 the communities to take part in the definition of the content of the Final Agreement.

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 US\$550 (R\$2.2 billion), of which (i) US\$24.9 (R\$100 million) in financial investments; (ii) US\$320 (R\$1.3 billion) in insurance bonds; and (iii) US\$199,5 (R\$800 million) in assets of Samarco. If, by the deadline negotiated by the parties, the negotiations have not been completed, the Federal Prosecutor's Office may require that the Court re-institute the order for the deposit of US\$300 (R\$1.2 billion) in relation to the US\$5 billion (R\$20.2 billion) public civil action and US\$1.9 billion (R\$7.7 billion) related US\$38.7 billion (R\$155 billion), mentioned above.

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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 US\$49,9 (R\$200 million). 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 16, 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. As the deadline already expired the proposals are being negotiated for service agreements.

On June 25, 2018, a Term of Conduct Adjustment (TACGov) was signed among Samarco and its shareholders, Vale and BHP Billiton Brasil, the Public Prosecutors (the Federal one and the ones from the States of Espírito Santo and Minas Gerais), the Public Defender Office (from the União and the States of Espírito Santo and Minas Gerais) and the Public Attorneys (from the Union and the States of Espírito Santo and Minas Gerais). The agreement established some innovations regarding the governance previously defined by the Frame Work Agreement and aim to improve the participation of people affected by the dawn break of the Fundão dam in the programs under the responsibility of Renova Foundation. It also establishes a negotiation process in order to allow the possible renegotiation of the programs dedicated to repair the impacts resulting from the event, to be discussed after the conclusion of the studies of the specialists hired by Samarco to advise the Public Prosecutor s Office ( Experts ). In addition, the TACGov extinguished some important lawsuits, including but not limited to, the ACP of US\$5 billion (R\$20 billion) proposed by the Federal Government and the States of Minas Gerais and Espírito Santo, and part of the ACP of US\$38.7 billion (R\$155 billion), as well address the discussions about some legal guarantees in the amount of US\$550 (R\$2.2 billion), bringing, therefore, greater legal certainty for the companies. On August 8, the TACGov was ratified by the judge of the 12th Federal Court of Belo Horizonte, producing its legal and procedural effects.

*(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

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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 the responsibility of Vale S.A. for the Fundão dam failure made in a conference call in November 2015.

This lawsuit is currently ongoing under discovery with the gathering of documents to be provided to the plaintiffs. In addition, depositions of some custodians indicated by the parties.

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.

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In June 2017 the defendants presented a joint motion to dismiss the claims requested by the plaintiffs. In March 2018, the Judge issued an order dismissing defendant's motion to dismiss without prejudice and ordering leading plaintiff to submit a final amended complaint, which was presented by the plaintiffs on March 21, 2018. As a result, a second joint motion to dismiss the claims was filed by the defendants a new decision regarding the merits of the motion to dismiss is expected to be issued by the Judge on the following months.

Vale S.A. continues to contest this lawsuit.

*(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 2016, the Federal Court of Ponte Nova received the complaint and began the criminal action.

On June 12 and 13, 2018, two hearings were conducted for the deposition of the first prosecution witness. On the second semester, hearings were conducted on September 12, 20 and 26 and October 3 and 4, 2018, for the depositions of the other prosecution witnesses. At this point, the criminal action is temporarily suspended according to a decision from October 15, 2018, due to two Habeas Corpuses judged by the 1st Regional Federal Court and therefore it is not possible to precise at this point when there will be a decision and/or trial of Federal Prosecution's indictment.

*(v) Other lawsuits*

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

After the ratification by the judge of the 12th Federal Lower Court of the new Agreement with public authorities and public prosecutors, some public civil actions shall be extinguished.

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.

**e) Contingent assets**

In 2015, the Company filed an enforceable action in the amount of US\$131 (R\$524 million) referring to the final court decision in favor of the Company of the accrued interest of compulsory deposits from 1987 to 1993. Currently it is not possible to estimate the economic benefit inflow as the counterparty can appeal on the calculation. Consequently, the asset was not recognized in the financial statements.



Table of Contents**23. Employee postretirement obligations****Reconciliation of net liabilities recognized in the statement of financial position**

	September 30, 2018				December 31, 2017			
	Overfunded pension plans	Underfunded pension plans	Other benefits	Total	Overfunded pension plans	Underfunded pension plans	Other benefits	Total
Amount recognized in the statement of financial position								
Present value of actuarial liabilities	(2,797)	(4,278)	(1,351)	(8,426)	(3,397)	(4,470)	(1,410)	(9,277)
Fair value of assets	4,038	3,632		7,670	4,828	3,776		8,604
Effect of the asset ceiling	(1,241)			(1,241)	(1,431)			(1,431)
Liabilities		(646)	(1,351)	(1,997)		(694)	(1,410)	(2,104)
Current liabilities		(51)	(53)	(104)		(16)	(58)	(74)
Non-current liabilities		(595)	(1,298)	(1,893)		(678)	(1,352)	(2,030)
Liabilities		(646)	(1,351)	(1,997)		(694)	(1,410)	(2,104)

**24. Stockholders equity****a) Share capital**

As at September 30, 2018, the share capital was US\$61,614 corresponding to 5,284,474,782 shares issued and fully paid without par value.

	ON	September 30, 2018 PNE	Total
<b>Stockholders</b>			
Litel Participações S.A. and Litela Participações S.A.	1,108,483,410		1,108,483,410
BNDES Participações S.A.	394,939,557		394,939,557
Bradespar S.A.	332,965,266		332,965,266
Mitsui & Co., Ltd	286,347,055		286,347,055
Foreign investors - ADRs	1,268,100,202		1,268,100,202

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Foreign institutional investors in local market	1,161,261,895		1,161,261,895
FMP - FGTS	56,378,941		56,378,941
PIBB - Fund	2,524,029		2,524,029
Institutional investors	268,604,777		268,604,777
Retail investors in Brazil	280,989,231		280,989,231
Brazilian Government (Golden Share)		12	12
<b>Outstanding shares</b>	<b>5,160,594,363</b>	<b>12</b>	<b>5,160,594,375</b>
Shares in treasury	123,880,407		123,880,407
<b>Total issued shares</b>	<b>5,284,474,770</b>	<b>12</b>	<b>5,284,474,782</b>
<b>Share capital per class of shares (in millions)</b>	<b>61,614</b>		<b>61,614</b>
<b>Total authorized shares</b>	<b>7,000,000,000</b>		<b>7,000,000,000</b>

### b) Share buyback program

On July 25, 2018, the Board of Directors approved a share buyback program for Vale's common share which will be limited to a maximum of 80,000,000 common shares, and their respective ADSs, and up to US\$1 billion. The program will be carried out over up to a 12-month period and the repurchased shares will be cancelled after the expiration of the program and/or alienated through the executive compensation programs. The shares have been acquired in the stock market based on regular trading conditions. As at September 30, 2018, the Company repurchased of 36,837,718 common shares (including their respective ADSs), at an average price of US\$13.27 per share, for a total aggregate purchase price of US\$489. The shares acquired will be held in treasury for future sale or cancellation.

### c) Remuneration to the Company's stockholders

On September, 2018, the Company paid to stockholders remuneration in the amount of US\$1,876 (R\$7,694 million), US\$1,659 (R\$6,801 million) based on the interest on capital and US\$217 (R\$893 million) based on dividends, approved by Board of Directors on July 25, 2018. This payment is due to the new policy of stockholders remuneration of the Company, approved in March 2018, which provides for a semi-annual payment of 30% of Adjusted EBITDA from continuing operations less sustaining investments. This amount will be reduced from the minimum mandatory remuneration for the year ended 2018 and/or deducted from the profit reserve, if necessary.

Table of Contents**25. Related parties**

The Company's related parties are subsidiaries, joint ventures, associates, shareholders and its related entities 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.

Related party transactions were made by the Company on terms equivalent to those that prevail in arm's-length transactions, with respect to price and market conditions 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 operational lease and railway transportation services.

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

**a) Transactions with related parties**

	Three-month period ended September 30,					2017			
	Joint Ventures	Associates	Major stockholders	Total	Joint Ventures	Associates	Major stockholders	Others	Total
Net operating revenue	83	74	61	<b>218</b>	125	80	31	4	<b>240</b>
Cost and operating expenses	(602)	(6)		<b>(608)</b>	(552)	(7)	(8)		<b>(567)</b>
Financial result	22		(39)	<b>(17)</b>	37	(17)	313	10	<b>343</b>

	Nine-month period ended September 30,					2017			
	Joint Ventures	Associates	Major stockholders	Total	Joint Ventures	Associates	Major stockholders	Others	Total
Net operating revenue	259	229	162	<b>650</b>	314	243	96	17	<b>670</b>
Cost and operating expenses	(1,610)	(31)		<b>(1,641)</b>	(1,378)	(22)	(20)	(2)	<b>(1,422)</b>
Financial result	124		(188)	<b>(64)</b>	50	(17)		1	<b>34</b>

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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.

## b) Outstanding balances with related parties

	September 30, 2018					December 31, 2017				
	Joint Ventures	Associates	Major stockholders	Others	Total	Joint Ventures	Associates	Major stockholders	Others	Total
<b>Assets</b>										
Cash and cash equivalents			513		513			817		817
Accounts receivable	74	21	3	14	112	73	38	3	17	131
Dividends receivable	82				82	112	14			126
Loans	1,939				1,939	4,526				4,526
Derivatives financial instruments			244		244			284		284
Other assets	38				38	17				17
<b>Liabilities</b>										
Supplier and contractors	648	39		12	699	192	20	201	15	428
Loans		1,281	2,798		4,079		1,245	4,508		5,753
Derivatives financial instruments			117		117			109		109
Other liabilities	181	29			210	612		16		628

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**Major stockholders**

Refers to regular financial instruments with large financial institutions of which the stockholders are part of the controlling shareholders agreement .

**Coal segment transactions**

In March 2018, Nacala BV, a joint venture between Vale and Mitsui on the Nacala's logistic corridor, closed the project financing and repaid a portion of the shareholders loans from Vale, in the amount of US\$2,572. The outstanding receivable of US\$1,939 carries interest at 7.44% p.a. The Company has issued a financial guarantee in connection with the Project Finance of Nacala, in the proportion equivalent to its share in the Concessionaires (50%), and the fair value of this instrument is US\$40 as at September 30, 2018.

The loan from associates mainly relates to the loan from Pangea Emirates Ltd, part of the group of shareholders which owns 15% interest on Vale Moçambique, in the amount of US\$1,218 (US\$1,166 as at December 31, 2017), which carries interest at 6.54% p.a.

**26. Additional information about derivatives financial instruments**

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.

The following tables detail the derivatives positions for Vale and its controlled companies as of September 30, 2018, 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.

Table of Contentsa) **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.

Flow	Notional		Index	Average rate	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year				
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017	September 30, 2018	September 30, 2018	2018	2019	2020+		
CDI vs. US\$ fixed rate swap													
Receivable	R\$	1,690	R\$	3,540	CDI	101.39%	(58)	(33)	(27)	7	(3)	(15)	(40)
Payable	US\$	487	US\$	1,104	Fix	3.29%							
TJLP vs. US\$ fixed rate swap													
Receivable	R\$	2,459	R\$	2,982	TJLP +	1.20%	(423)	(380)	(74)	20	(30)	(325)	(68)
Payable	US\$	1,074	US\$	1,323	Fix	1.46%							
TJLP vs. US\$ floating rate swap													
Receivable	R\$	193	R\$	216	TJLP +	0.85%	(60)	(54)	(3)	2	(3)	(57)	
Payable	US\$	114	US\$	123	Libor +	-1.24%							
R\$ fixed rate vs. US\$ fixed rate swap													
Receivable	R\$	1,098	R\$	1,158	Fix	8.14%	(30)	25	13	17	(2)	37	(65)
Payable	US\$	360	US\$	385	Fix	-0.49%							
IPCA vs. US\$ fixed rate swap													
							(93)	(35)	4	7		(38)	(55)

Receivable	R\$	1,306	R\$	1,000	+ IPCA	6.55%						
Payable	US\$	434	US\$	434	- Fix	3.98%						
<b>IPCA vs. CDI swap</b>							74	85	3	0.2	2	72
Receivable	R\$	1,350	R\$	1,350	+ IPCA	6.62%						
Payable	R\$	1,350	R\$	1,350	- CDI	98.58%						

**(ii) Protection program for EUR denominated debt instruments**

In order to reduce the cash flow volatility, swap 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\$.

The swap 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.

Flow	Notional				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
	September 30, 2018	December 31, 2017	Index	Average rate	September 30, 2018	December 31, 2017	September 30, 2018	September 30, 2018	2018	2019	2020+
EUR fixed rate vs. US\$ fixed rate swap					20	23	(4)	8		(5)	25
Receivable		500		500	Fix	3.75%					
Payable	US\$	613	US\$	613	Fix	4.29%					

Table of Contents**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 hedging transactions were implemented, through options contracts.

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.

Flow	Notional (ton)		Bought / Sold	Average strike (US\$/ton)	Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017	September 30, 2018	September 30, 2018	2018
Call options	1,200,000		B	464	27		29	7	27
Put options	1,200,000		S	344					
<b>Total</b>					<b>27</b>		<b>29</b>	<b>7</b>	<b>27</b>

As at September 30, 2018 and December 31, 2017, includes US\$11 and US\$15, respectively, 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.

Flow	Notional (ton)		Bought / Sold	Average strike (US\$/ton)	Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year	
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017	September 30, 2018	September 30, 2018	2018	2019
Fixed price sales protection										
Nickel forwards	9,155	9,621	B	13,351	(7)	24	21	3	(7)	
Raw material purchase protection										
Nickel forwards	126	292	S	12,426			(1)			
Copper forwards	101	79	S	6,064						
Total					(7)	24	20	3	(7)	

Table of Contents**c) Freight derivative positions**

In order to reduce the impact of maritime freight price volatility on the company's cash flow, freight hedging transactions were implemented, through Forward Freight Agreements (FFAs). The protected item is part of Vale's costs linked to maritime freight spot prices. The financial settlement inflows/outflows of the FFAs are offset by the protected items' losses/gains due to freight prices changes.

The Forward Freight Agreements (FFAs) are contracts traded over the counter and can be cleared through a Clearing House, in this case subject to margin requirements.

Flow	Notional (days)		Bought / Sold	Average strike (US\$/day)	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017	September 30, 2018	September 30, 2018	2018
Freight forwards	380		B	24,161					0.7

**d) 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)		Bought / Sold	Average strike (US\$/share)	Fair value		Value at Risk	Fair value by year
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017	September 30, 2018	2023
Call options	10,000,000	10,000,000	B	44	9	39	1	9

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

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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)		Bought / Sold	Average strike (R\$/share)	Fair value		Value at Risk	Fair value by year
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017	September 30, 2018	2027
Conversion options	140,239	140,239	S	8,099	(56)	(57)	3	(56)

### f) 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. In this case, the Company could settle through cash or shares.

Flow	Notional (quantity, in millions)		Bought / Sold	Average strike (R\$/share)	Fair value		Value at Risk	Fair value by year
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017	September 30, 2018	2018+
Options	2,139	2,139	B/S	1.7	223	251	13	223

Table of Contents**g) 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)		Bought / Sold	Average strike (US\$/ton)	Fair value		Value at Risk September 30, 2018	Fair value by year	
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017		2018	2018
Nickel forwards	1,552	2,627	S	13,418	2	1	1	1	2
Copper forwards	1,678	2,718	S	6,105					
<b>Total</b>					<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>2</b>

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.

Flow	Notional (volume/month)		Bought / Sold	Average strike (US\$/ton)	Fair value		Value at Risk September 30, 2018	Fair value by year	
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017		2018	2019+
Call options	746,667	746,667	S	233	(1)	(2)	1		(1)

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.

Flow	Notional (quantity)		Bought / Sold	Average strike (R\$/share)	Fair value		Value at Risk September 30, 2018	Fair value by year	
	September 30, 2018	December 31, 2017			September 30, 2018	December 31, 2017		2027	2027
Put option	1,105,070,863	1,105,070,863	S	3.86	(92)	(133)	9		(92)

Table of Contents**h) 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 September 30, 2018
- *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

Instrument	Instrument's main risk events	Probable	Scenario I	Scenario II
<b>CDI vs. US\$ fixed rate swap</b>	R\$depreciation	(58)	(180)	(302)
	US\$interest rate inside Brazil decrease	(58)	(63)	(67)
	Brazilian interest rate increase	(58)	(59)	(59)
	Protected item: R\$ denominated debt	n.a.		
<b>TJLP vs. US\$ fixed rate swap</b>	R\$depreciation	(423)	(684)	(945)
	US\$interest rate inside Brazil decrease	(423)	(433)	(444)
	Brazilian interest rate increase	(423)	(434)	(445)
	TJLP interest rate decrease	(423)	(432)	(442)
<b>TJLP vs. US\$ floating rate swap</b>	R\$depreciation	(60)	(88)	(116)
	US\$interest rate inside Brazil decrease	(60)	(61)	(63)
	Brazilian interest rate increase	(60)	(61)	(62)
	TJLP interest rate decrease	(60)	(61)	(62)
<b>R\$ fixed rate vs. US\$ fixed rate swap</b>	R\$depreciation	(30)	(105)	(180)
	US\$interest rate inside Brazil decrease	(30)	(41)	(54)
	Brazilian interest rate increase	(30)	(49)	(66)
	Protected item: R\$ denominated debt	n.a.		
<b>IPCA vs. US\$ fixed rate swap</b>	R\$depreciation	(93)	(205)	(317)
	US\$interest rate inside Brazil decrease	(93)	(97)	(102)
	Brazilian interest rate increase	(93)	(102)	(111)
	IPCA index decrease	(93)	(98)	(104)
<b>Protected item: R\$ denominated debt</b>	R\$depreciation	n.a.		

<b>IPCA vs. CDI swap</b>	Brazilian interest rate increase	74	51	31
	IPCA index decrease	74	61	49
Protected item: R\$ denominated debt linked to IPCA	IPCA index decrease	n.a.	(61)	(49)
<b>EUR fixed rate vs. US\$ fixed rate swap</b>	EUR depreciation	20	(151)	(321)
	Euribor increase	20	13	6
	US\$Libor decrease	20	1	(20)
Protected item: EUR denominated debt	EUR depreciation	n.a.	151	321

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Instrument	Instrument's main risk events	Probable	Scenario I	Scenario II
<b>Bunker Oil protection</b>				
Options	Bunker Oil price decrease	27	(8)	(127)
Protected item: Part of costs linked to bunker oil prices	Bunker Oil price decrease	n.a.	8	127
<b>Maritime Freight protection</b>				
Forwards	Freight price decrease		(2.3)	(4.6)
Protected item: Part of costs linked to maritime freight prices	Freight price decrease	n.a.	2.3	4.6
<b>Nickel sales fixed price protection</b>				
Forwards	Nickel price decrease	(8)	(35)	(63)
Protected item: Part of nickel revenues with fixed prices	Nickel price fluctuation	n.a.	35	63
<b>Purchase protection program</b>				
Nickel forwards	Nickel price increase			(1)
Protected item: Part of costs linked to nickel prices	Nickel price increase	n.a.		1
Copper forwards	Copper price increase		(0.2)	(0.3)
Protected item: Part of costs linked to copper prices	Copper price increase	n.a.	0.2	0.3
<b>Wheaton Precious Metals Corp. warrants</b>	WPM stock price decrease	9	3	
<b>Conversion options - VLI</b>	VLI stock value increase	(57)	(89)	(132)
<b>Options - MBR</b>	MBR stock value decrease	223	150	102

Instrument	Main risks	Probable	Scenario I	Scenario II
Embedded derivatives - Raw material purchase (nickel)	Nickel price increase	1	(3)	(8)
Embedded derivatives - Raw material purchase (copper)	Copper price increase		(2)	(5)
Embedded derivatives - Gas purchase	Pellet price increase	(1)	(3)	(5)
Embedded derivatives - Guaranteed minimum return (VLI)	VLI stock value decrease	(92)	(211)	(407)

Table of Contentsi) **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 published by agencies Moody's and S&P regarding the main financial institutions that we had outstanding positions as of September 30, 2018.

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	Baa1	BBB+
Banco do Nordeste	Ba3	BB-
Banco Safra	Ba3	BB-
Banco Santander	A2	A
Banco Votorantim	Ba3	BB-
Bank of America	A3	A-
Bank of China	A1	A
Bank of Mandiri	Baa2	BB+
Bank of Nova Scotia	Aa2	A+
Bank Rakyat	Baa2	BB+
Bank of Tokyo Mitsubishi UFJ	A1	A-
Banpará		BB-
Barclays	Baa3	BBB
BNP Paribas	Aa3	A
BTG Pactual	Ba3	BB-
Caixa Economica Federal	Ba3	BB-
Canadian Imperial Bank	Aa2	A+
China Construction Bank	A1	A
CIMB Bank	A3	A-
Citigroup	Baa1	BBB+
Deutsche Bank	A3	BBB+
Goldman Sachs	A3	BBB+
HSBC	A2	A
Intesa Sanpaolo Spa	Baa1	BBB
Itaú Unibanco	Ba3	BB-
JP Morgan Chase & Co	A3	A-
Macquarie Group Ltd	A3	BBB
Mega Int. Commercial Bank	A1	A



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Morgan Stanley	A3	BBB+
National Bank of Canada	Aa3	A
National Bank of Oman	Baa3	
Natixis	A1	A
Societe Generale	A1	A
Standard Bank Group	Ba1	
Standard Chartered	A2	BBB+
Sumitomo Mitsui Financial	A1	A-
UBS	Aa3	A-
Unicredit	Baa1	BBB

### j) Market curves

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

### (i) Products

#### Nickel

Maturity	Price (US\$/ton)	Maturity	Price (US\$/ton)	Maturity	Price (US\$/ton)
SPOT	12,480	MAR19	12,690	SEP19	12,836
OCT18	12,541	APR19	12,719	SEP20	13,041
NOV18	12,573	MAY19	12,743	SEP21	13,202
DEC18	12,604	JUN19	12,764	SEP22	13,351
JAN19	12,634	JUL19	12,789		
FEB19	12,661	AUG19	12,812		

#### Copper

Maturity	Price (US\$/lb)	Maturity	Price (US\$/lb)	Maturity	Price (US\$/lb)
SPOT	2.81	MAR19	2.84	SEP19	2.84
OCT18	2.84	APR19	2.84	SEP20	2.85
NOV18	2.84	MAY19	2.84	SEP21	2.85
DEC18	2.84	JUN19	2.84	SEP22	2.85
JAN19	2.84	JUL19	2.84		
FEB19	2.84	AUG19	2.84		

Table of Contents**Bunker Oil**

Maturity	Price (US\$/ton)	Maturity	Price (US\$/ton)	Maturity	Price (US\$/ton)
SPOT	479	MAR19	455	SEP19	417
OCT18	480	APR19	451	SEP20	360
NOV18	474	MAY19	446	SEP21	332
DEC18	469	JUN19	441	SEP22	294
JAN19	464	JUL19	435		
FEB19	459	AUG19	427		

**Maritime Freight (Capesize 5TC)**

Maturity	Price (US\$/day)	Maturity	Price (US\$/day)	Maturity	Price (US\$/day)
SPOT	18,350	MAR19	15,640	SEP19	21,800
OCT18	21,783	APR19	16,575	Cal 2019	20,538
NOV18	25,167	MAY19	16,575	Cal 2020	21,392
DEC18	24,258	JUN19	16,575	Cal 2021	17,820
JAN19	17,492	JUL19	21,800		
FEB19	14,367	AUG19	21,800		

**(ii) Foreign exchange and interest rates****US\$-Brazil Interest Rate**

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/18	3.79	09/02/19	4.02	01/03/22	4.56
12/03/18	3.44	10/01/19	4.11	04/01/22	4.59
01/02/19	3.50	01/02/20	4.25	07/01/22	4.60
02/01/19	3.59	04/01/20	4.32	10/03/22	4.64
03/01/19	3.68	07/01/20	4.36	01/02/23	4.70
04/01/19	3.71	10/01/20	4.43	04/03/23	4.75
05/02/19	3.80	01/04/21	4.46	07/03/23	4.76
06/03/19	3.85	04/01/21	4.50	10/02/23	4.82
07/01/19	3.91	07/01/21	4.54	01/02/24	4.88
08/01/19	3.97	10/01/21	4.56	07/01/24	4.92

**US\$ Interest Rate**

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Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	2.26	6M	2.66	11M	2.78
2M	2.31	7M	2.70	12M	2.79
3M	2.41	8M	2.72	2Y	3.06
4M	2.54	9M	2.74	3Y	3.17
5M	2.61	10M	2.76	4Y	3.24

## TJLP

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/18	6.56	09/02/19	6.56	01/03/22	6.56
12/03/18	6.56	10/01/19	6.56	04/01/22	6.56
01/02/19	6.56	01/02/20	6.56	07/01/22	6.56
02/01/19	6.56	04/01/20	6.56	10/03/22	6.56
03/01/19	6.56	07/01/20	6.56	01/02/23	6.56
04/01/19	6.56	10/01/20	6.56	04/03/23	6.56
05/02/19	6.56	01/04/21	6.56	07/03/23	6.56
06/03/19	6.56	04/01/21	6.56	10/02/23	6.56
07/01/19	6.56	07/01/21	6.56	01/02/24	6.56
08/01/19	6.56	10/01/21	6.56	07/01/24	6.56

## BRL Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/18	6.42	09/02/19	7.87	01/03/22	10.51
12/03/18	6.53	10/01/19	7.98	04/01/22	10.67
01/02/19	6.70	01/02/20	8.32	07/01/22	10.84
02/01/19	6.87	04/01/20	8.63	10/03/22	10.97
03/01/19	7.03	07/01/20	8.95	01/02/23	11.12
04/01/19	7.15	10/01/20	9.29	04/03/23	11.25
05/02/19	7.30	01/04/21	9.58	07/03/23	11.33
06/03/19	7.47	04/01/21	9.84	01/02/24	11.51
07/01/19	7.59	07/01/21	10.06	07/01/24	11.64
08/01/19	7.75	10/01/21	10.30		

Table of Contents**Implicit Inflation (IPCA)**

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/18	3.73	09/02/19	5.15	01/03/22	5.01
12/03/18	3.85	10/01/19	5.26	04/01/22	5.03
01/02/19	4.01	01/02/20	5.13	07/01/22	5.09
02/01/19	4.17	04/01/20	5.14	10/03/22	5.12
03/01/19	4.34	07/01/20	5.03	01/02/23	5.19
04/01/19	4.44	10/01/20	5.02	04/03/23	5.25
05/02/19	4.59	01/04/21	4.97	07/03/23	5.28
06/03/19	4.76	04/01/21	4.96	10/02/23	5.33
07/01/19	4.88	07/01/21	4.94	01/02/24	5.38
08/01/19	5.03	10/01/21	4.97	07/01/24	5.46

**EUR Interest Rate**

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	-0.40	6M	-0.28	11M	-0.24
2M	-0.37	7M	-0.27	12M	-0.24
3M	-0.35	8M	-0.26	2Y	-0.11
4M	-0.32	9M	-0.25	3Y	0.07
5M	-0.30	10M	-0.25	4Y	0.24

**CAD Interest Rate**

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	1.84	6M	2.18	11M	1.26
2M	1.91	7M	1.88	12M	1.17
3M	2.03	8M	1.66	2Y	2.61
4M	2.11	9M	1.51	3Y	2.73
5M	2.16	10M	1.37	4Y	2.81

**Currencies - Ending rates**

CAD/US\$	0.7738	US\$/BRL	4.0039	EUR/US\$	1.1614
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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)

Date: October 24, 2018

By:

/s/ André Figueiredo  
Director of Investor Relations

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