



Interim Financial Statements

September 30, 2019

BRGAAP in R\$ (English)

**Vale S.A. Interim Financial Statements
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Report on review of quarterly information

To the Board of Directors and Stockholders
Vale S.A.

Introduction

We have reviewed the accompanying parent company and consolidated interim accounting information of Vale S.A. ("Company"), included in the Quarterly Information Form - ITR for the quarter ended September 30, 2019, which comprises the parent company and consolidated statements of financial position as of September 30, 2019 and the respective parent company and consolidated income statements and the statements of comprehensive income for the three and nine-month periods then ended, the statement of changes in equity for the nine-month period then ended, the parent company statement of cash flows for the nine-month period then ended and the consolidated statements of cash flows for the three and nine-month periods then ended, and a summary of significant accounting policies and other explanatory information.

Management is responsible for the preparation of the consolidated and parent company interim accounting information in accordance with the accounting standard CPC 21, Interim Financial Reporting, of the Brazilian Accounting Pronouncements Committee (CPC) and International Accounting Standard (IAS) 34, Interim Financial Reporting issued by the International Accounting Standards Board (IASB), as well as the presentation of this information in accordance with the standards issued by the Brazilian Securities Commission (CVM), applicable to the preparation of the Quarterly Information - ITR. Our responsibility is to express a conclusion on this interim accounting information based on our review.

Scope of review

We conducted our review in accordance with Brazilian and International Standards on Reviews of Interim Financial Information (NBC TR 2410 - Review of Interim Financial Information Performed by the Independent Auditor of the Entity and ISRE 2410 - Review of Interim Financial Information Performed by the Independent Auditor of the Entity, respectively). A review of interim information consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Brazilian and International Standards on Auditing and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

Conclusion on the interim information

Based on our review, nothing has come to our attention that causes us to believe that the accompanying consolidated and parent company interim accounting information included in the quarterly information referred to above has not been prepared, in all material respects, in accordance with CPC 21 and IAS 34 applicable to the preparation of the Quarterly Information, and presented in accordance with the standards issued by the CVM.



Emphasis of matter

Brumadinho's dam failure

We draw attention to Note 3 to the consolidated and parent company interim accounting information that describes the actions taken by the Company and the impacts on the interim accounting information as a consequence of the Brumadinho's Dam failure. As disclosed by Management, the Company has incurred costs and recorded provisions based on its best estimates and assumptions. Given the nature and uncertainties inherent in this type of event, the amounts recognized and/or disclosed will be reassessed by the Company and may be adjusted significantly in future periods, as new facts and circumstances become known. Our conclusion is not qualified in relation to this matter.

Other matters

Value added statements

The quarterly information referred to above includes the parent company and consolidated statements of value added for the nine-month period ended September 30, 2019. These statements are the responsibility of the Company's management and are presented as supplementary information under IAS 34. These statements have been subjected to review procedures performed together with the review of the interim accounting information for the purpose of concluding whether they are reconciled with the interim accounting information and accounting records, as applicable, and if their form and content are in accordance with the criteria defined in the accounting standard CPC 09 - "Statement of Value Added". Based on our review, nothing has come to our attention that causes to believe that these statements of value added have not been properly prepared, in all material respects, in accordance with the criteria established in this accounting standard, and consistent with the parent company and consolidated interim accounting information taken as a whole.

Audit and review of prior-year information

The Quarterly Information Form - ITR mentioned in the first paragraph includes accounting information, presented for comparison purposes, related to the income statement and statements of comprehensive income for the quarter and nine-month periods ended September 30, 2018, and the changes in equity, cash flows and value added for the nine-month period then ended, obtained from the Quarterly Information Form - ITR for that quarter, and also to the statement of financial position as at December 31, 2018, obtained from the financial statements at December 31, 2018. The review of the Quarterly Information - ITR for the quarter ended September 30, 2018 and the audit of the financial statements for the year ended December 31, 2018 were conducted by other independent auditors, who issued, respectively, an unqualified review report, dated October 24, 2018, and an unqualified audit report dated March 27, 2019, which included an emphasis of matter paragraph related to a subsequent event resulting from the Brumadinho's dam failure occurred on January 25, 2019.

Rio de Janeiro, October 24, 2019

PricewaterhouseCoopers
Auditores Independentes
CRC 2SP000160/O-5

Patricio Marques Roche
Contador CRC 1RJ081115/O-4

Income Statement

In millions of Brazilian reais, except earnings per share data

		Consolidated			
		Three-month period ended September 30,		Nine-month period ended September 30,	
	Notes	2019	2018	2019	2018
Continuing operations					
Net operating revenue	4(c)	40,664	37,862	107,621	97,028
Cost of goods sold and services rendered	5(a)	(22,628)	(22,827)	(60,660)	(59,260)
Gross profit		18,036	15,035	46,961	37,768
Operating expenses					
Selling and administrative expenses	5(b)	(504)	(535)	(1,349)	(1,377)
Research and evaluation expenses		(495)	(346)	(1,114)	(899)
Pre-operating and operational stoppage	3(d)	(1,140)	(241)	(3,268)	(736)
Brumadinho event	3	(893)	-	(24,129)	-
Other operating expenses, net	5(c)	(492)	(244)	(963)	(1,042)
		(3,524)	(1,366)	(30,823)	(4,054)
Impairment and disposals of non-current assets	3	(130)	(707)	(1,333)	(749)
Operating income		14,382	12,962	14,805	32,965
Financial income	6	525	445	1,368	1,114
Financial expenses	6	(4,308)	(1,479)	(10,199)	(6,320)
Other financial items, net	6	(773)	(3,924)	(1,149)	(12,753)
Equity results and other results in associates and joint ventures	13 and 17	501	54	(2,047)	(1,087)
Income before income taxes		10,327	8,058	2,778	13,919
Income taxes					
Current tax	7	(3,382)	280	(5,770)	(475)
Deferred tax		(484)	(2,730)	2,489	(2,021)
		(3,866)	(2,450)	(3,281)	(2,496)
Net income (loss) from continuing operations		6,461	5,608	(503)	11,423
Loss attributable to noncontrolling interests		(81)	(145)	(239)	(58)
Net income (loss) from continuing operations attributable to Vale's stockholders		6,542	5,753	(264)	11,481
Discontinued operations					
Loss from discontinued operations		-	-	-	(310)
Loss from discontinued operations attributable to Vale's stockholders		-	-	-	(310)
Net income (loss)		6,461	5,608	(503)	11,113
Loss attributable to noncontrolling interests		(81)	(145)	(239)	(58)
Net income (loss) attributable to Vale's stockholders		6,542	5,753	(264)	11,171
Earnings (loss) per share attributable to Vale's stockholders:					
Basic and diluted earnings (loss) per share:					
Common share (R\$)	8	1.26	1.11	(0.05)	2.14

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

Income Statement

In millions of Brazilian reais, except earnings per share data

	Parent company			
	Three-month period ended		Nine-month period ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Continuing operations				
Net operating revenue	28,257	22,728	64,805	56,860
Cost of goods sold and services rendered	(10,030)	(10,318)	(28,328)	(28,299)
Gross profit	18,227	12,410	36,477	28,561
Operating income (expenses)				
Selling and administrative expenses	(235)	(242)	(640)	(694)
Research and evaluation expenses	(217)	(210)	(552)	(549)
Pre-operating and operational stoppage	(1,126)	(179)	(3,171)	(562)
Equity results from subsidiaries	(2,147)	531	4,849	4,104
Brumadinho event	(893)	-	(24,129)	-
Other operating expenses, net	(995)	(286)	(650)	(836)
	(5,613)	(386)	(24,293)	1,463
Impairment and disposals of non-current assets	(2)	(81)	(1,064)	(305)
Operating income	12,612	11,943	11,120	29,719
Financial income	130	95	298	209
Financial expenses	(3,315)	(1,508)	(9,060)	(6,079)
Other financial items, net	(340)	(3,316)	(488)	(11,936)
Equity results and other results in associates and joint ventures	501	54	(2,047)	(1,087)
Income (loss) before income taxes	9,588	7,268	(177)	10,826
Income taxes				
Current tax	(2,890)	774	(4,438)	774
Deferred tax	(156)	(2,289)	4,351	(119)
	(3,046)	(1,515)	(87)	655
Net income (loss) from continuing operations	6,542	5,753	(264)	11,481
Discontinued operations				
Loss from discontinued operations	-	-	-	(310)
Net income (loss)	6,542	5,753	(264)	11,171
Earnings (loss) per share attributable to Vale's stockholders:				
Basic and diluted earnings (loss) per share:				
Common share (R\$)	1.26	1.11	(0.05)	2.14

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

Statement of Comprehensive Income

In millions of Brazilian reais

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Net income (loss)	6,461	5,608	(503)	11,113
Other comprehensive income (loss):				
Items that will not be subsequently reclassified to income statement				
Retirement benefit obligations	(291)	144	(840)	112
Fair value adjustment to investment in equity securities	(449)	702	(811)	873
Transfer to reserve	-	-	-	(51)
Total items that will not be subsequently reclassified to income statement, net of tax	(740)	846	(1,651)	934
Items that may be subsequently reclassified to income statement				
Translation adjustments	6,623	4,854	6,900	19,823
Net investments hedge (note 20c)	(630)	(308)	(546)	(2,338)
Cash flow hedge	(4)	-	(4)	-
Transfer of realized results to net income	-	-	-	(257)
Total of items that may be subsequently reclassified to income statement, net of tax	5,989	4,546	6,350	17,228
Total comprehensive income (loss)	11,710	11,000	4,196	29,275
Comprehensive income (loss) attributable to noncontrolling interests	(49)	(176)	(216)	142
Comprehensive income (loss) attributable to Vale's stockholders	11,759	11,176	4,412	29,133
From continuing operations	11,759	11,176	4,412	29,117
From discontinued operations	-	-	-	16
	11,759	11,176	4,412	29,133

	Parent company			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Net income (loss)	6,542	5,753	(264)	11,171
Other comprehensive income (loss):				
Items that will not be subsequently reclassified to income statement				
Retirement benefit obligations	(9)	32	(43)	(5)
Fair value adjustment to investment in equity securities	(368)	621	(656)	770
Equity results in associates and joint ventures	(363)	193	(952)	220
Transfer to reserve	-	-	-	(51)
Total items that will not be subsequently reclassified to income statement, net of tax	(740)	846	(1,651)	934
Items that may be subsequently reclassified to income statement				
Translation adjustments	6,591	4,885	6,877	19,478
Net investments hedge (note 20c)	(630)	(308)	(546)	(2,338)
Equity results in associates and joint ventures	(4)	-	(4)	-
Transfer of realized results to net income	-	-	-	(112)
Total of items that may be subsequently reclassified to income statement, net of tax	5,957	4,577	6,327	17,028
Total comprehensive income (loss)	11,759	11,176	4,412	29,133

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.

Statement of Cash Flows

In millions of Brazilian reais

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Cash flow from operating activities:				
Income before income taxes from continuing operations	10,327	8,058	2,778	13,919
Adjusted for:				
Equity results and other results in associates and joint ventures	(501)	(54)	2,047	1,087
Impairment and disposal of non-current assets	130	707	1,333	749
Depreciation, amortization and depletion	3,690	3,376	10,505	9,322
Financial results, net	4,556	4,958	9,980	17,959
Changes in assets and liabilities:				
Accounts receivable	1,973	(708)	1,213	(78)
Inventories	(214)	(721)	(1,019)	(1,453)
Suppliers and contractors (i)	1,635	1,295	3,198	(82)
Provision - Payroll, related charges and other remunerations	737	789	(374)	(238)
Proceeds from cobalt stream transaction	-	-	-	2,603
Liabilities related to Brumadinho (note 3)	(1,384)	-	12,044	-
De-characterization of the upstream dams (note 3)	(160)	-	7,296	-
Other assets and liabilities, net	(293)	81	(2,764)	(1,734)
	20,496	17,781	46,237	42,054
Interest on loans and borrowings paid (ii) (note 16)	(1,912)	(972)	(3,781)	(3,203)
Derivatives received (paid), net	(362)	(84)	(817)	(127)
Interest on participative stockholders' debentures paid	-	-	(351)	(245)
Income taxes (including settlement program)	(1,961)	(1,279)	(5,202)	(3,033)
Net cash provided by operating activities from continuing operations	16,261	15,446	36,086	35,446
Cash flow from investing activities:				
Capital expenditures	(3,544)	(2,736)	(8,715)	(8,159)
Additions to investments	(281)	(1)	(283)	(79)
Acquisition of subsidiary, net of cash (note 12)	(1,570)	-	(3,454)	-
Proceeds from disposal of assets and investments	82	476	475	4,937
Dividends received from associates and joint ventures	1	28	762	566
Judicial deposits and restricted (release) cash (note 3)	6,683	-	(5,888)	-
Other investments activities, net (iii)	(3,538)	(514)	(4,191)	7,694
Net cash provided by (used in) investing activities from continuing operations	(2,167)	(2,747)	(21,294)	4,959
Cash flow from financing activities:				
Loans and borrowings from third-parties (note 16)	3,784	827	11,886	3,641
Payments of loans and borrowings from third-parties (note 16)	(7,013)	(4,537)	(14,213)	(21,350)
Payments of leasing	(206)	-	(507)	-
Dividends and interest on capital paid to stockholders	-	(7,694)	-	(12,415)
Dividends and interest on capital paid to noncontrolling interest	(395)	(315)	(683)	(625)
Share buyback program	-	(1,939)	-	(1,939)
Transactions with noncontrolling stockholders	-	-	-	(56)
Net cash used in financing activities from continuing operations	(3,830)	(13,658)	(3,517)	(32,744)
Net cash used in discontinued operations	-	-	-	(157)
Increase (decrease) in cash and cash equivalents	10,264	(959)	11,275	7,504
Cash and cash equivalents in the beginning of the period	23,176	24,557	22,413	14,318
Effect of exchange rate changes on cash and cash equivalents	2,204	826	1,956	2,987
Effects of disposals of subsidiaries and merger, net of cash and cash equivalents	-	-	-	(385)
Cash and cash equivalents at end of the period	35,644	24,424	35,644	24,424
Non-cash transactions:				
Additions to property, plant and equipment - capitalized loans and borrowing costs	133	197	429	551

(i) Includes variable lease payments.

(ii) Includes interest with cash tender offer repurchased in the amount of R\$1,014.

(iii) Includes loans and advances from/to related parties and R\$3.7 billion related to short-term investment (LFTs) for the three and nine-month period ended September 2019. For the nine-month period ended September 30, 2018, includes proceeds received from Nacala project finance (note 25b) in the amount of R\$8,434.

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

Statement of Cash Flows

In millions of Brazilian reais

	Parent company	
	Nine-month period ended September 30,	
	2019	2018
Cash flow from operating activities:		
Income (loss) before income taxes from continuing operations	(177)	10,826
Adjusted for:		
Equity results from subsidiaries	(4,849)	(4,104)
Equity results and other results in associates and joint ventures	2,047	1,087
Impairment and disposal of non-current assets	1,064	305
Depreciation, amortization and depletion	5,729	4,464
Financial results, net	9,250	17,806
Changes in assets and liabilities:		
Accounts receivable	(2,605)	(5,094)
Inventories	(532)	(254)
Suppliers and contractors	3,510	1,448
Provision - Payroll, related charges and others remunerations	120	(6)
Liabilities related to Brumadinho (note 3)	12,044	-
De-characterization of the upstream dams (note 3)	7,296	-
Other assets and liabilities, net	(1,547)	1,274
	31,350	27,752
Interest on loans and borrowings paid	(3,801)	(1,440)
Derivatives paid, net	(946)	(288)
Interest on participative stockholders' debentures paid	(351)	(245)
Income taxes (including settlement program)	(3,852)	(1,272)
Net cash provided by operating activities from continuing operations	22,400	24,507
Cash flow from investing activities:		
Capital expenditures	(4,548)	(5,261)
Additions to investments	(5,708)	(1,032)
Proceeds from disposal of assets and investments	61	466
Dividends received	1,650	2,479
Judicial deposits and restricted (release) cash (note 3)	(5,888)	-
Others investments activities, net (i)	(6,848)	3,309
Net cash used in investing activities from continuing operations	(21,281)	(39)
Cash flow from financing activities:		
Loans and borrowings from third-parties	2,894	3,641
Payments of loans and borrowings from third-parties	(4,143)	(12,825)
Payments of leasing	(114)	-
Dividends and interest on capital paid to stockholders	-	(12,416)
Share buyback program	-	(1,939)
Net cash used in financing activities from continuing operations	(1,363)	(23,539)
Increase (decrease) in cash and cash equivalents	(244)	929
Cash and cash equivalents in the beginning of the period	4,835	1,876
Cash and cash equivalents at end of the period	4,591	2,805
Non-cash transactions:		
Additions to property, plant and equipment - capitalized loans and borrowing costs	428	548

(i) Includes loans and advances from/to related parties.

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

Statement of Financial Position

In millions of Brazilian reais

		Consolidated		Parent company	
		September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
	Notes				
Assets					
Current assets					
Cash and cash equivalents		35,644	22,413	4,591	4,835
Short-term investments	16	3,773	125	3,265	4
Accounts receivable	9	9,567	10,261	21,122	17,333
Other financial assets	11	1,721	1,558	1,072	356
Inventories	10	19,277	17,216	5,306	4,775
Prepaid income taxes		2,327	2,104	2,042	1,938
Recoverable taxes		2,672	3,422	1,047	2,024
Others		2,004	2,157	1,157	2,096
		76,985	59,256	39,602	33,361
Non-current assets					
Judicial deposits	22(c)	12,676	6,649	12,183	6,274
Other financial assets	11	12,052	12,180	4,802	5,276
Prepaid income taxes		2,460	2,107	-	-
Recoverable taxes		2,140	2,913	1,389	2,281
Deferred income taxes	7(a)	32,425	26,767	24,005	17,536
Others		1,686	1,015	1,370	1,163
		63,439	51,631	43,749	32,530
Investments	13	12,486	12,495	157,541	139,510
Intangibles	14	34,599	30,850	15,829	15,622
Property, plant and equipment	15	203,512	187,481	104,752	103,816
		314,036	282,457	321,871	291,478
Total assets		391,021	341,713	361,473	324,839
Liabilities					
Current liabilities					
Suppliers and contractors		17,704	13,610	10,889	7,342
Loans and borrowings	16	5,545	3,889	4,375	2,523
Leases	2(c)	984	-	361	-
Other financial liabilities	11	4,231	6,213	5,540	5,083
Taxes payable		4,439	1,659	3,274	806
Settlement program ("REFIS")	7(c)	1,722	1,673	1,687	1,638
Liabilities related to associates and joint ventures	17	1,875	1,120	1,875	1,120
Provisions	21	4,244	5,278	2,607	3,331
Liabilities related to Brumadinho	3	8,684	-	8,684	-
De-characterization of dams	3	1,877	-	1,877	-
Others		4,623	1,843	2,951	2,743
		55,928	35,285	44,120	24,586
Non-current liabilities					
Loans and borrowings	16	56,030	56,039	20,901	23,082
Leases	2(c)	6,558	-	2,027	-
Other financial liabilities	11	14,877	10,511	76,816	71,740
Settlement program ("REFIS")	7(c)	14,330	15,179	14,044	14,876
Deferred income taxes	7(a)	7,323	5,936	-	-
Provisions	21	33,493	27,491	10,590	9,758
Liabilities related to Brumadinho	3	3,524	-	3,524	-
De-characterization of dams	3	5,775	-	5,775	-
Liabilities related to associates and joint ventures	17	4,609	3,226	4,609	3,226
Deferred revenue - Gold stream		5,770	6,212	-	-
Others		5,096	8,151	4,168	7,168
		157,385	132,745	142,454	129,850
Total liabilities		213,313	168,030	186,574	154,436
Stockholders' equity					
Equity attributable to Vale's stockholders	24	174,899	170,403	174,899	170,403
Equity attributable to noncontrolling interests		2,809	3,280	-	-
Total stockholders' equity		177,708	173,683	174,899	170,403
Total liabilities and stockholders' equity		391,021	341,713	361,473	324,839

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

Statement of Changes in Equity

In millions of Brazilian reais

	Share capital	Results on conversion of shares	Capital reserve	Net ownership changes in subsidiaries	Profit reserves	Treasury stocks	Unrealized fair value gain (losses)	Cumulative translation adjustments	Accumulated deficit	Equity attributable to Vale's stockholders	Equity attributable to noncontrolling interests	Total stockholders' equity
Balance at December 31, 2018	77,300	50	3,634	(2,714)	42,502	(6,604)	(3,248)	59,483	-	170,403	3,280	173,683
Loss	-	-	-	-	-	-	-	-	(264)	(264)	(239)	(503)
Other comprehensive income:												
Retirement benefit obligations	-	-	-	-	-	-	(840)	-	-	(840)	-	(840)
Cash flow hedge	-	-	-	-	-	-	(4)	-	-	(4)	-	(4)
Net investments hedge (note 20c)	-	-	-	-	-	-	-	(546)	-	(546)	-	(546)
Fair value adjustment to investment in equity securities	-	-	-	-	-	-	(811)	-	-	(811)	-	(811)
Translation adjustments	-	-	-	-	-	-	181	6,696	-	6,877	23	6,900
Transactions with stockholders:												
Dividends of noncontrolling interest	-	-	-	-	-	-	-	-	-	-	(331)	(331)
Capitalization of noncontrolling interest advances	-	-	-	-	-	-	-	-	-	-	76	76
Assignment and transfer of shares (note 24)	-	-	-	-	-	84	-	-	-	84	-	84
Balance at September 30, 2019	77,300	50	3,634	(2,714)	42,502	(6,520)	(4,722)	65,633	(264)	174,899	2,809	177,708

	Share capital	Results on conversion of shares	Capital reserve	Net ownership changes in subsidiaries	Profit reserves	Treasury stocks	Unrealized fair value gain (losses)	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale's stockholders	Equity attributable to noncontrolling interests	Total stockholders' equity
Balance at December 31, 2017	77,300	50	3,634	(2,663)	24,539	(2,746)	(3,912)	47,556	-	143,758	4,348	148,106
Net income (loss)	-	-	-	-	-	-	-	-	11,171	11,171	(58)	11,113
Other comprehensive income:												
Retirement benefit obligations	-	-	-	(51)	-	-	112	-	-	61	-	61
Net investments hedge (note 20c)	-	-	-	-	-	-	-	(2,338)	-	(2,338)	-	(2,338)
Fair value adjustment to investment in equity securities	-	-	-	-	-	-	873	-	-	873	-	873
Translation adjustments	-	-	-	-	-	-	327	19,039	-	19,366	200	19,566
Transactions with stockholders:												
Dividends and interest on capital of Vale's stockholders	-	-	-	-	-	-	-	-	(7,694)	(7,694)	-	(7,694)
Dividends of noncontrolling interest	-	-	-	-	-	-	-	-	-	-	(318)	(318)
Acquisitions and disposal of noncontrolling interest	-	-	-	-	-	-	-	-	-	-	(756)	(756)
Capitalization of noncontrolling interest advances	-	-	-	-	-	-	-	-	-	-	20	20
Share buyback program	-	-	-	-	-	(1,939)	-	-	-	(1,939)	-	(1,939)
Balance at September 30, 2018	77,300	50	3,634	(2,714)	24,539	(4,685)	(2,600)	64,257	3,477	163,258	3,436	166,694

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

Value Added Statement

In millions of Brazilian Reals

	Consolidated		Parent company	
			Nine-month period ended September 30,	
	2019	2018	2019	2018
Generation of value added from continuing operations				
Gross revenue				
Revenue from products and services	108,680	98,168	65,722	57,701
Revenue from the construction of own assets	4,772	8,271	2,595	5,302
Other revenues	507	7,452	329	3,233
Less:				
Cost of products, goods and services sold	(16,453)	(16,071)	(7,908)	(8,442)
Material, energy, third-party services and other	(26,152)	(28,037)	(8,391)	(10,088)
Impairment of non-current assets and others results	(1,333)	(749)	(1,064)	(305)
Brumadinho event	(24,129)	-	(24,129)	-
Other costs and expenses	(7,461)	(9,627)	(4,716)	(5,979)
Gross value added	38,431	59,407	22,438	41,422
Depreciation, amortization and depletion	(10,505)	(9,322)	(5,729)	(4,464)
Net value added	27,926	50,085	16,709	36,958
Received from third parties				
Equity results from entities	(2,047)	(1,087)	2,802	3,017
Financial income	3,041	3,201	2,349	2,955
Total value added from continuing operations to be distributed	28,920	52,199	21,860	42,930
Value added from discontinued operations to be distributed	-	63	-	-
Total value added to be distributed	28,920	52,262	21,860	42,930
Direct compensation	5,955	6,899	2,513	3,504
Benefits	78	73	65	58
F.G.T.S	16	16	15	15
Federal taxes	8,122	7,105	4,606	1,123
State taxes	434	3,351	80	2,475
Municipal taxes	15	27	4	17
Interest (net derivatives and monetary and exchange rate variation)	12,855	21,054	11,469	20,666
Other remunerations of third party funds	1,948	2,561	3,372	3,901
Reinvested net income (absorbed loss)	(264)	11,171	(264)	11,171
Net income (loss) attributable to noncontrolling interest	(239)	(58)	-	-
Distributed value added from continuing operations	28,920	52,199	21,860	42,930
Distributed value added from discontinued operations	-	63	-	-
Distributed value added	28,920	52,262	21,860	42,930

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

1. Corporate information

Vale S.A. and its direct and indirect subsidiaries ("Vale" or the "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 4.

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).

2. Basis of preparation of the interim financial statements

a) Statement of compliance

The condensed consolidated and individual interim financial statements of the Company ("interim financial statements") have been prepared and are being presented in accordance with IAS 34 Interim Financial Reporting (CPC 21) of the International Financial Reporting Standards ("IFRS"), as implemented in Brazil by the Brazilian Accounting Pronouncements Committee ("CPC"), approved by the Brazilian Securities and Exchange Commission ("CVM") and by the Brazilian Federal Accounting Council ("CFC"). All relevant information from its own interim financial statements, and only this information, are being presented and correspond to those used by the Company's Management.

The selected notes of the Parent Company are presented in a summarized form in note 26.

b) Basis of presentation

The interim financial statements have been prepared to update users about relevant events and transactions that occurred in the period and should be read in conjunction with the financial statements for the year ended December 31, 2018. The accounting policies, accounting estimates and judgements, risk management and measurement methods are the same as those applied when preparing the last annual financial statements, except for the critical judgements and estimates made in determining the financial impacts arising from the Brumadinho dam failure, as described in note 3, and the new accounting policy related to the application of IFRS 16/CPC 06 (R2) Leases, which has been adopted by the Company since January 1, 2019 and is described in note 2(c).

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\$").

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

	Closing rate		Three-month period ended		Average rate	
	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
US Dollar ("US\$")	4.1644	3.8748	3.9684	3.9505	3.8887	3.6055
Canadian dollar ("CAD")	3.1451	2.8451	3.0051	3.0232	2.9258	2.7973
Euro ("EUR" or "€")	4.5425	4.4390	4.4123	4.5950	4.3679	4.2969

The issue of these interim financial statements was authorized by the Executive Board on October 24, 2019.

c) Changes in significant accounting policies

– **IFRIC 23/ICPC 22 Uncertainty over income tax treatments** – IFRIC 23/ICPC 22 became effective for annual periods beginning on or after January 1, 2019 and clarifies the measurement and recognition requirements of IAS 12 Income taxes. The Company has assessed these requirements brought by the new interpretation and concluded there is no significant impact on its interim financial statements.

– **IFRS 16/CPC 06 (R2) Leases** – The Company has applied IFRS 16/CPC 06 (R2) from January 1, 2019, the date of initial application, using the modified retrospective approach. Accordingly, the comparative information has not been restated and continues to be reported under IAS 17 and IFRIC 4. As a result of the IFRS 16/CPC 06 (R2) adoption, the Company has changed its accounting policy for lease contracts and the details of these changes are summarized below.

The ferrous minerals produced in Brazil are mainly shipped to Asia. The Company has leased the Ponta da Madeira and Itaguaí maritime terminals in Brazil, that are primarily for the delivery of iron ore and iron ore pellets to bulk carrier vessels. The remaining lease terms are, respectively, 4 and 7 years for the ports in Brazil. Vale also has a lease agreement for a maritime terminal in Oman, which is used to deliver iron ore pellets produced in that location. The remaining lease term is 24 years for the port in Oman.

Some of the delivery of iron ore from Brazil to the Asian clients are made through five time charter agreements, which have 11 years remaining lease term on average. As part of the ferrous minerals segment, the Company also has long-term agreements for the exploration and processing of iron ore with its joint ventures, such as the agreements to lease the pelletizing plants in Brazil.

In addition, the Company leases an oxygen plant dedicated to the base metals operation, as part of its nickel operation run in Canada. The remaining period of this lease agreement is 11 years.

The Company also has a long-term contract related to the right of use of certain locomotives dedicated to the transportation of coal in Mozambique. This agreement has a remaining lease term of 7 years.

Vale has leased properties for its operational facilities and commercial and administrative offices in the various locations where the Company conducts its business.

Until December 31, 2018, these lease arrangements were classified as operating leases and were not recognized in the Company's statement of financial position. The contractual payments were recognized in the income statement on a straight-line basis over the term of the lease.

As at January 1, 2019, these lease agreements were recognized in the statement of financial position and were measured discounting the remaining minimum contractual payments at the present value, using the Company's incremental borrowing rate ranging from 3% to 6%, depending on the remaining lease term. The Company used the following practical expedients when applying IFRS 16/CPC 06 (R2):

- Applied a single discount rate to a portfolio of leases with similar characteristics;
- Applied the exemption not to recognize right-of-use assets and liabilities for leases with less than 12 months of lease term and leases of low-value assets. The payments associated to these leases will be recognized as an expense on a straight-line basis over the lease term; and
- Used hindsight when determining the lease term, to determine if the contract contains options to extend or terminate the lease.

Following are the lease liabilities under IFRS 16/CPC 06 (R2) reconciled to the disclosed operating lease commitments under IAS 17 at December 31, 2018:

	Lease commitments disclosed on December 31, 2018	Contracts scoped out	Present value adjustment	Lease liability recognized on January 1, 2019
Ports	4,384	2	(1,415)	2,971
Vessels	2,980	(4)	(633)	2,343
Pellets plants	843	(57)	(201)	585
Properties	628	(2)	(95)	531
Energy plants	362	-	(114)	248
Locomotives	264	(28)	(62)	174
Mining equipment	215	(71)	(18)	126
Total	9,676	(160)	(2,538)	6,978

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



The total amount of the variable lease payments not included in the measurement of lease liabilities, which have been recognized straight to the income statement, for the three and nine-month periods ended September 30, 2019 were R\$729 and R\$1,921, respectively. The interest accretion recognized in the income statement is disclosed in note 6.

The lease liability is presented on the statement of financial position as “Leases” and the accounting policy related to leases is disclosed in note 15.

Changes in the recognized right-of-use assets and leases liabilities are as follows:

						Assets
	January 1, 2019	Additions and contract modifications (i)	Depreciation	Translation adjustment		September 30, 2019
Ports	2,971	7	(127)	185		3,036
Vessels	2,343	17	(149)	169		2,380
Pellets plants	585	235	(108)	-		712
Properties	531	143	(83)	2		593
Energy plants	248	9	(21)	20		256
Locomotives	174	-	(17)	12		169
Mining equipment	126	7	(43)	28		118
Total	6,978	418	(548)	416		7,264

						Liabilities
	January 1, 2019	Additions and contract modifications (i)	Payments	Interest	Translation adjustment	September 30, 2019
Ports	2,971	7	(134)	87	175	3,106
Vessels	2,343	17	(208)	69	163	2,384
Pellets plants	585	235	(25)	24	-	819
Properties	531	159	(71)	18	53	690
Energy plants	248	9	(21)	10	25	271
Locomotives	174	-	(20)	10	10	174
Mining equipment	126	7	(28)	1	(8)	98
Total	6,978	434	(507)	219	418	7,542

(i) Additions mainly relates to new administrative offices lease and to renewal of the contract with Nibrasco, a pelletizing plant, which expires in December 2022.

Following is the lease liability maturity, presented by contract nature, in place as at September 30, 2019:

	2019	2020	2021	2022	2023 onwards	Total
Ports	90	124	130	135	2,627	3,106
Vessels	72	180	175	175	1,782	2,384
Pellets plants	132	113	100	104	370	819
Properties	112	121	112	62	283	690
Energy plants	7	15	15	16	218	271
Locomotives	8	19	20	22	105	174
Mining equipment	14	33	23	20	8	98
Total	435	605	575	534	5,393	7,542

3. Brumadinho dam failure

On January 25, 2019, a failure has been experienced in the Dam I of the Córrego do Feijão mine, which belongs to the Paraopeba Complex in the Southern System, located in Brumadinho, Minas Gerais, Brazil ("Brumadinho dam"). This dam, built under the upstream method, was inactive since 2016 (that is, without additional tailings disposal) and there was no other operational activity in the structure.

Under the upstream method, a dam is raised by building successive layers ("lifts") above the tailings accumulated in the reservoir. There are two other raising methods, the "downstream" method and the "centerline" method. Each of these methods presents a different risk profile.

Due to the Brumadinho dam failure ("event"), 270 people lost their lives or are missing. Around 11.7 million metric tons of iron ore waste were contained in the Brumadinho dam and it is not yet known the exact volume of iron ore waste that was released due to the dam failure. The tailings released have caused an impact of around 315 km in extension, destroying some of Vale's facilities, affecting local communities and disturbing the environment. The Paraopeba river and its ecosystems have also been impacted by the event.

The Company has been taking the necessary actions to support the victims and to mitigate and recover the social and environmental damages resulting from the dam failure. Vale has provided support in multiple ways, aiming to ensure the humanitarian assistance to those affected by the dam failure.

The Company established three Extraordinary Independent Consulting Committees to support the Board of Directors. All members of these committees are independent and unrelated to management or to the Company's operations, to ensure that the initiatives and actions are unbiased. Following are the committees:

- a) The Extraordinary Independent Consulting Committee for Investigation ("CIAEA"), dedicated to investigating the causes and responsibilities for the Brumadinho dam failure;
- b) The Extraordinary Independent Consulting Committee for Support and Recovery ("CIAEAR"), dedicated to follow-up on the measures taken to support and recover those impacted and the areas affected by the failure of the Brumadinho dam, assuring that all necessary resources will be applied; and
- c) The Extraordinary Independent Consulting Committee for Dam Safety ("CIAESB"), dedicated to support the Board of Directors on questions related to the diagnosis of safety conditions, management and risk mitigation related to Vale's tailings dams, also providing recommendations for actions to strengthen safety conditions of those dams.

In addition, Vale has determined the suspension (i) of the variable remuneration of its executives; (ii) the Shareholder's Remuneration Policy and (iii) any other resolution related to shares buyback.

As a result of the dam failure, the Company recognized in the income statement a total impact of R\$893 and R\$24,129 for the three and nine-month periods ended September 30, 2019 to meet its assumed obligations, including indemnification and donations to those affected by the event, remediation of the affected areas and compensation to the society. The financial impacts recognized on the statement of financial position and income statement are presented as follows:

a) De-characterization of the dams

On January 29, 2019, the Company informed the market and Brazilian authorities the decision to speed up the plan to "de-characterize" all of its tailings dams built under the upstream method (same method as Brumadinho's dam), located in Brazil. The "de-characterization" means that the structure will be dismantled so the structure is effectively no longer a dam. After the event, the Brazilian National Mining Agency ("*Agência Nacional de Mineração – ANM*") set new safety criteria for dams, determining the de-characterization of structures built under the upstream method.

Following the Company's decision and new standards set by ANM, the Company has undertaken an assessment of its dam structures since the event and recorded a provision for the de-characterization of certain upstream structures that have been identified to date.

Vale has developed engineering projects for the upstream structures and the total expected costs to carry out all de-characterization projects resulted in a provision of R\$7,652 as at September 30, 2019, discounted at the present value using the discount rate of 3.40%.

(a.i) Company's dams

Before the event, the decommissioning plans of these dams were based on a method which aimed to ensure the physical and chemical stability of the structures, not necessarily, in all cases, removing in full and potentially reprocessing the tailings contained in the dams. Since the event, the Company has been working to develop detailed de-characterization engineering plan for each of these dams.

The updated plans indicate that for certain of these upstream dams, firstly, the Company will have to reinforce the downstream massive structures, and conclude the de-characterization subsequently, according to the geotechnical and geographic conditions of each of them. It was also considered whether additional containment structures should be built, depending on the safety level of the structure. The conceptual projects for the de-characterization were filed before the competent authorities and the conceptual developing projects are also expected to be concluded in 2020.

The Company is currently working on the development of the engineering solution to de-characterize all of these structures and the detailed engineering projects will be filed later this year, which might result in material changes on the provided amount. Moreover, these projects filed during the year are subject to further review and eventual approval by the relevant authorities.

The measurement of the costs and recognition of the provision takes into consideration several assumptions and estimates, which rely on factors, for which some are not under the Company's control. The main critical assumptions and estimates applied considers, among others: (i) volume of the waste to be removed based on historical data available and interpretation of the enacted laws and regulations; (ii) location availability for the tailings disposal; and (iii) acceptance by the authorities of the proposed engineering methods and solution. Therefore, changes in the critical assumptions and estimates may result in a material change to the amount provided as at September 30, 2019.

(a.ii) Associates and joint ventures upstream dams

Some of our investees also operate similar dam structures and as detailed in the note 17 to these financial statements, the Company recognized a provision of R\$993 in the second quarter of 2019 as "Equity results and other results in associates and joint ventures" in relation to the de-characterization of the Germano tailings dam, owned by Samarco Mineração S.A.

b) Framework Agreements and donations

The Company has been working together with the authorities and society to remediate the environmental and social impacts of the event. Therefore, the Company has started negotiations and entered into agreements with the relevant authorities and affected people. Vale has also signed an instrument committing to donate to Brumadinho city, other institutions, to the families with missing members or affected by fatalities, to business owners of the region and families that resided in the Self-Saving Zone near to Brumadinho dam.

The agreements reached with the relevant authorities were signed with to compensate those affected by the event. As a result of these agreements outlined below, the Company has a provision of R\$7,662 recorded as at September 30, 2019.

Vale has also developed studies and projects to ensure geotechnical safety of the remaining structures at the Córrego do Feijão mine, in Brumadinho, and the removal and proper disposal of the tailings, especially alongside the Paraopeba river. In addition, Vale has set up an exclusive structure for treatment of the rescued animals, enabling emergency care and recovery.

These projects aiming to recover the environment and compensate the society resulted in a provision of R\$4,437 recorded as at September 30, 2019.

The total amount of this provision may vary due to the early stage of the ongoing negotiations, timing and scope of the measures currently being discussed, which are subject to the approval and consent by the relevant authorities.

The changes in the provision in the nine-month period ended September 30, 2019 are as follows:

	2019
Provision increase	14,239
Payments	(2,194)
Present value valuation	163
Balance at September 30	12,208
Current liabilities	8,684
Non-current liabilities	3,524
Liabilities	12,208

(b.i) Public Defendants

On April 5, 2019, Vale and the Public Defendants of the State of Minas Gerais formalized an agreement under which those affected by the Brumadinho's Dam failure may join an individual or family group out-of-Court settlement agreements for the indemnification of material, economic and moral damages. This agreement establishes the basis for a wide range of indemnification payments, which were defined according to the best practices and case law of Brazilian Courts.

(b.ii) Public Ministry of Labor

On July 15, 2019, Vale signed a final agreement with the Public Ministry of Labor to indemnify the direct and third-party employees of the Córrego do Feijão mine who were affected by the termination of this operation.

Under the terms of the final agreement, Vale will either maintain the jobs of its direct employees and third-party employees until January 25, 2023 or convert this benefit into a cash compensation. The agreement also includes indemnification payments to the relatives of the fatal victims of the event, which may vary depending on their relationship with the victims, and a lifelong medical insurance benefit to the widows and widowers and a similar benefit to the dependents of the victims until they are 25 years old.

In addition, the agreement set a collective moral damage indemnification payment in the amount of R\$400, which has been fully paid in the current quarter.

(b.iii) Brazilian Federal Government, State of Minas Gerais, Public Prosecutors

On February 20, 2019, Vale entered into a judicial preliminary agreement with the State of Minas Gerais, Federal Government, the Public Prosecutors of the State of Minas Gerais the Federal Public Prosecutors and the Public Defenders of the State of Minas Gerais and representatives of Public Authorities in which the Company commits to make, subject to registration, emergency indemnification payments to the residents of Brumadinho and the communities that are located downstream up to one kilometer from the Paraopeba river bed, from Brumadinho to the city of Pompéu. Due to this agreement, the Company has been making monthly payments during a 12-month period, according to the age of the beneficiary, among other factors.

(b.iv) Environmental remediation and compensation

On July 8, 2019, Vale has entered into an agreement with *Companhia de Saneamento de Minas Gerais ("COPASA")* to implement several actions to clean up the affected areas and to upgrade the retention water system alongside the Paraopeba River and some other water collection points nearby the affected area. In addition, the Company mobilized the dredging of part of the material released, including cleaning and de-sanding of the Paraopeba river channel.

c) Incurred expenses

The Company has incurred in expenses, which do not qualify for provision and have been recognized straight to the income statement, in the amounts of R\$893 and R\$1,906 for the three and nine-month periods ended September 30, 2019, respectively. These expenses include communication services, accommodation and humanitarian assistance, equipment, legal services, water, food aid, taxes, among others.

d) Operation stoppages

The Company has some suspended operations due to judicial decisions or technical analysis performed by the Company on its upstream dam structures. Such stoppage currently impacts 50 Mtpy of Vale's production capacity of iron ore, which about 20 Mtpy is expected to be gradually resumed starting by the end of this fiscal year. The Company is working on legal and technical measures to resume these operations at the earliest.

The Company recorded a loss of R\$704 and R\$2,248 related to the operational stoppage and idle capacity of the ferrous mineral segment as "Pre-operating and operational stoppage" for the three and nine-month periods ended September 30, 2019, respectively.

e) Assets write-off

Following the event and the decision to speed up the de-characterization of the upstream dams, the Company recognized a loss of R\$836 as "Impairment and disposal of non-current assets" for the nine-month period ended September 30, 2019 in relation to the assets write-off of the Córrego do Feijão mine and those related to the other upstream dams in Brazil.

f) Contingencies and other legal matters

Vale is subject to significant contingencies due to the Brumadinho dam failure. Vale has already been named on several judicial and administrative proceedings brought by authorities and affected people and is currently under investigations. Vale is evaluating these contingencies and would recognize a provision based on the updates on the stage of these claims.

Following these contingencies, approximately R\$6.3 billion of the Company's assets are restricted as at September 30, 2019, of which approximately R\$334 of the Company's bank accounts are restricted and R\$6 billion were converted into judicial deposits.

For the Brumadinho event, the Company has additional guarantees in the amount of R\$5.6 billion, which were presented in court and used to release the respective judicial deposit during the period ended September 30, 2019.

(f.i) Administrative sanctions

The Company was notified of the imposition of administrative fines by the Brazilian Institute of the Environment and Renewable Natural Resources ("IBAMA"), in the amount of R\$250, which the Company expects to settle through environmental projects. Furthermore, the Secretary for Environment – SEMA Brumadinho imposed administrative fines, in the total amount of R\$109. Both amounts are also recorded as at September 30, 2019.

(f.ii) U.S. Securities class action suits

The Company became aware through public available information that Vale and certain of its current officers have been named as defendants in putative securities class action complaints in Federal Courts in New York brought by holders of Vale's securities under U.S. federal securities laws. However, neither the Company nor its officers have been officially served of any of these Complaints.

The complaints allege that Vale made false and misleading statements or omitted to make disclosures concerning the risks and potential damage of a failure of the dam in the Córrego de Feijão mine. The plaintiffs have not specified an amount of alleged damages in these complaints. Vale intends to defend against these actions and mount a full defense against these claims. Based on the assessment of the Company's legal consultants, although still in a very preliminary stage, the expectation of loss of this proceeding is classified as possible.

Considering that, no official service of process has been received to date, the very early stage of the aforementioned putative class action complaints and the fact that no amounts have been claimed by the plaintiffs against the defendants, it is not possible, at the moment, to reliably estimate the potential amounts involved.

g) Insurance

The Company is negotiating with insurers under its operational risk, general liability and engineering risk policies, but these negotiations are still at a preliminary stage. Any payment of insurance proceeds will depend on the coverage definitions under these policies and assessment of the amount of loss. Due to uncertainties, no indemnification to the Company was recognized in Vale's interim financial statements.

Critical accounting estimates and judgments

The measurement of the provisions require the use of assumptions that may be mainly affected by: (i) changes in laws and regulations; (ii) changes in the current estimated market price of the direct and indirect cost related to products and services; (iii) changes in timing for cash outflows; (iv) changes in the technology considered in measuring the provision; (v) number of individuals entitled to the indemnification payments; (vi) resolution of existing and potential legal claims; (vii) demographic assumptions; (viii) actuarial assumptions; and (ix) updates in the discount rate.

Therefore, future expenditures may differ from the amounts currently provided because the realized assumptions and various other factors are not always under the Company's control. These changes to key assumptions could result in a material impact to the amount of the provision in future reporting periods. At each reporting period, the Company will reassess the key assumptions used in the preparation of the projected cash flows and will adjust the provision, if required.

4. Information by business segment and by geographic area

The Company operated the following reportable segments during this quarter: Ferrous Minerals, Base Metals and Coal. The segments are aligned with products and reflect the structure used by Management to evaluate Company's performance. The responsible bodies for making operational decisions, allocating resources and evaluating performance are the Executive Boards and the Board of Directors. The performance of the operating segments is assessed based on a measure of Adjusted LAJIDA (EBITDA).

In 2019, due to the Brumadinho dam failure, the Company has created the Special Recovery and Development Board, which is in-charge of social, humanitarian, environmental and structural recovery measures that are implemented in Brumadinho and other affected areas. This Board reports to the CEO and assess the costs related to the Brumadinho event. These costs are not directly related to the Company's operating activities and, therefore, were not allocated to any operating segment.

The Company allocate to "Others" the revenues and cost of other products, services, research and development, investments in joint ventures and associates of other business and unallocated corporate expenses.

a) Adjusted LAJIDA (EBITDA)

Adjusted LAJIDA (EBITDA) is calculated for each segment using operating income or loss plus dividends received and interest from associates and joint ventures, and excluding the amounts charged as (i) depreciation, depletion and amortization and (ii) impairment and disposal of non-current assets.

							Consolidated
							Three-month period ended September 30, 2019
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted LAJIDA (EBITDA)
Ferrous minerals							
Iron ore	26,118	(10,077)	(326)	(114)	(650)	-	14,951
Iron ore pellets	6,362	(2,893)	(32)	(20)	(105)	-	3,312
Ferroalloys and manganese	190	(153)	(6)	(2)	-	-	29
Other ferrous products and services	466	(345)	-	(3)	-	-	118
	33,136	(13,468)	(364)	(139)	(755)	-	18,410
Base metals							
Nickel and other products	4,136	(2,681)	(47)	(43)	(64)	-	1,301
Copper	1,966	(971)	(8)	(49)	-	-	938
	6,102	(3,652)	(55)	(92)	(64)	-	2,239
Coal	954	(1,732)	19	(39)	-	114	(684)
Brumadinho event	-	-	(893)	-	-	-	(893)
Others	472	(441)	(548)	(225)	(14)	1	(755)
Total	40,664	(19,293)	(1,841)	(495)	(833)	115	18,317

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



							Consolidated
							Three-month period ended September 30, 2018
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses (i)	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted LAJIDA (EBITDA)
Ferrous minerals							
Iron ore	22,215	(9,777)	(5)	(105)	(95)	-	12,233
Iron ore pellets	6,444	(3,211)	(17)	(24)	(24)	-	3,168
Ferroalloys and manganese	413	(284)	(2)	1	-	-	128
Other ferrous products and services	452	(293)	(5)	(3)	-	28	179
	29,524	(13,565)	(29)	(131)	(119)	28	15,708
Base metals							
Nickel and other products	4,314	(3,177)	(11)	(39)	(33)	-	1,054
Copper	1,987	(895)	(5)	(18)	-	-	1,069
	6,301	(4,072)	(16)	(57)	(33)	-	2,123
Coal	1,671	(1,708)	8	(16)	-	106	61
Others	366	(249)	(666)	(142)	(22)	-	(713)
Total from continuing operations	37,862	(19,594)	(703)	(346)	(174)	134	17,179

(i) Revised including in "Others" a loss of R\$189 related to provision for litigation.

							Consolidated
							Nine-month period ended September 30, 2019
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted LAJIDA (EBITDA)
Ferrous minerals							
Iron ore	65,942	(24,490)	(947)	(280)	(2,174)	-	38,051
Iron ore pellets	17,775	(7,992)	(60)	(59)	(193)	567	10,038
Ferroalloys and manganese	784	(589)	(15)	(4)	-	-	176
Other ferrous products and services	1,249	(955)	4	(6)	-	-	292
	85,750	(34,026)	(1,018)	(349)	(2,367)	567	48,557
Base metals							
Nickel and other products	12,044	(8,388)	(180)	(99)	(110)	-	3,267
Copper	5,546	(2,745)	(20)	(96)	-	-	2,685
	17,590	(11,133)	(200)	(195)	(110)	-	5,952
Coal	3,221	(4,850)	22	(85)	-	331	(1,361)
Brumadinho event	-	-	(24,129)	-	-	-	(24,129)
Others	1,060	(1,075)	(954)	(485)	(24)	195	(1,283)
Total	107,621	(51,084)	(26,279)	(1,114)	(2,501)	1,093	27,736

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



	Consolidated						
	Nine-month period ended September 30, 2018						
	Net operating revenue	Cost of goods sold and services rendered	Sales, administrative and other operating expenses (i)	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted LAJIDA (EBITDA)
Ferrous minerals							
Iron ore	54,101	(24,318)	(142)	(261)	(306)	2	29,076
Iron ore pellets	17,055	(8,759)	(43)	(60)	(55)	391	8,529
Ferroalloys and manganese	1,234	(763)	(10)	(2)	-	-	459
Other ferrous products and services	1,252	(834)	(10)	(5)	(1)	28	430
	73,642	(34,674)	(205)	(328)	(362)	421	38,494
Base metals							
Nickel and other products	12,847	(8,391)	(121)	(101)	(85)	-	4,149
Copper	5,530	(2,582)	(10)	(44)	-	-	2,894
	18,377	(10,973)	(131)	(145)	(85)	-	7,043
Coal	4,192	(3,980)	(11)	(48)	-	404	557
Others	817	(721)	(1,891)	(378)	(60)	145	(2,088)
Total from continuing operations	97,028	(50,348)	(2,238)	(899)	(507)	970	44,006
Discontinued operations (Fertilizers)	397	(393)	(15)	-	-	-	(11)
Total	97,425	(50,741)	(2,253)	(899)	(507)	970	43,995

(i) Revised including in "Others" a loss of R\$433 related to provision for litigation.

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

From continuing operations

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Net income (loss) from continuing operations	6,461	5,608	(503)	11,423
Depreciation, depletion and amortization	3,690	3,376	10,505	9,322
Income taxes	3,866	2,450	3,281	2,496
Financial results	4,556	4,958	9,980	17,959
LAJIDA (EBITDA)	18,573	16,392	23,263	41,200
Items to reconciled adjusted LAJIDA (EBITDA)				
Equity results and other results in associates and joint ventures	(501)	(54)	2,047	1,087
Dividends received and interest from associates and joint ventures (i)	115	134	1,093	970
Impairment and disposal of non-current assets	130	707	1,333	749
Adjusted LAJIDA (EBITDA) from continuing operations	18,317	17,179	27,736	44,006

(i) Includes remuneration of the financial instrument in the coal segment.

From discontinued operations

	Consolidated	
	Nine-month period ended September 30, 2018	
Loss from discontinued operations	(310)	
Income taxes	(134)	
Financial results	18	
LAJIDA (EBITDA)	(426)	
Items to reconciled adjusted LAJIDA (EBITDA)		
Impairment of non-current assets	415	
Adjusted LAJIDA (EBITDA) from discontinued operations	(11)	

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



b) Assets by segment

	September 30, 2019			Consolidated December 31, 2018		
	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangibles (i)	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangibles (i)
Ferrous minerals	9,901	7,460	134,231	8,562	7,030	121,572
Base metals	5,097	57	90,835	4,443	54	82,515
Coal	348	650	6,736	461	1,228	6,157
Others	47	4,319	6,309	45	4,183	8,087
Total	15,393	12,486	238,111	13,511	12,495	218,331

	2019			Consolidated Three-month period ended September 30, 2018		
	Capital expenditures (ii)			Capital expenditures (ii)		
	Sustaining capital	Project execution	Depreciation, depletion and amortization	Sustaining capital	Project execution	Depreciation, depletion and amortization
Ferrous minerals	1,595	361	2,173	1,244	483	1,617
Base metals	1,071	175	1,179	885	-	1,408
Coal	314	-	267	117	-	262
Others	19	9	71	4	3	89
Total	2,999	545	3,690	2,250	486	3,376

	2019			Consolidated Nine-month period ended September 30, 2018		
	Capital expenditures (ii)			Capital expenditures (ii)		
	Sustaining capital	Project execution	Depreciation, depletion and amortization	Sustaining capital	Project execution	Depreciation, depletion and amortization
Ferrous minerals	3,875	1,025	5,874	3,340	2,172	4,555
Base metals	2,774	379	3,733	2,155	118	3,873
Coal	609	-	687	264	81	674
Others	31	22	211	11	18	220
Total	7,289	1,426	10,505	5,770	2,389	9,322

(i) Goodwill is allocated mainly to ferrous minerals and base metals segments in the amount of R\$7,133 and R\$7,743 in September 30, 2019 and R\$7,133 and R\$7,022 in December 31, 2018, respectively.

(ii) Cash outflows.

Base metals

Onça Puma

In September 2019, upon a favorable decision from the Brazilian Supreme Court ("STF"), the Company resumed its Onça Puma operation, which is comprised of mineral extraction and nickel processing activities. The mineral extraction operations had been suspended since September 2017 and nickel processing activities since June 2019.

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. Upon completion of the transaction, the Company received an upfront payment of R\$2,603 (US\$690 million) in cash, R\$1,471 (US\$390 million) from Wheaton and R\$1,132 (US\$300 million) from Cobalt 27, which has been recorded as others 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.

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



c) Net operating revenue, by destination

	Consolidated				
	Three-month period ended September 30, 2019				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	555	882	-	-	1,437
United States of America	319	918	-	-	1,237
Germany	1,149	356	-	-	1,505
Europe, except Germany	1,205	1,877	363	-	3,445
Middle East, Africa and Oceania	2,226	23	101	-	2,350
Japan	1,836	455	24	-	2,315
China	21,081	748	-	-	21,829
Asia, except Japan and China	2,161	607	417	-	3,185
Brazil	2,604	236	49	472	3,361
Net operating revenue	33,136	6,102	954	472	40,664

	Consolidated				
	Three-month period ended September 30, 2018				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	739	840	-	-	1,579
United States of America	513	872	-	-	1,385
Germany	1,034	435	-	-	1,469
Europe, except Germany	2,099	1,678	408	-	4,185
Middle East, Africa and Oceania	2,507	28	174	-	2,709
Japan	2,038	500	215	-	2,753
China	16,228	750	-	-	16,978
Asia, except Japan and China	2,056	923	761	-	3,740
Brazil	2,310	275	113	366	3,064
Net operating revenue	29,524	6,301	1,671	366	37,862

	Consolidated				
	Nine-month period ended September 30, 2019				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	1,732	2,363	-	-	4,095
United States of America	1,172	2,661	-	-	3,833
Germany	3,344	1,370	-	-	4,714
Europe, except Germany	4,595	5,018	931	-	10,544
Middle East, Africa and Oceania	6,526	64	239	-	6,829
Japan	5,483	1,129	386	-	6,998
China	49,068	1,999	-	-	51,067
Asia, except Japan and China	5,809	2,365	1,434	-	9,608
Brazil	8,021	621	231	1,060	9,933
Net operating revenue	85,750	17,590	3,221	1,060	107,621

	Consolidated				
	Nine-month period ended September 30, 2018				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	2,152	2,008	-	-	4,160
United States of America	1,095	2,621	-	25	3,741
Germany	3,115	1,183	-	-	4,298
Europe, except Germany	5,705	4,963	1,061	-	11,729
Middle East, Africa and Oceania	6,245	63	433	-	6,741
Japan	5,746	1,397	322	-	7,465
China	38,365	2,182	-	-	40,547
Asia, except Japan and China	4,703	3,149	2,045	-	9,897
Brazil	6,516	811	331	792	8,450
Net operating revenue	73,642	18,377	4,192	817	97,028

Provisionally priced commodities sales – At September 30, 2019, the Company had an estimated 19 million metric tons of iron ore and iron ore pellets (December 31, 2018: 27 million metric tons) and 82 thousand metric tons of copper (December 31, 2018: 78 thousand metric tons) provisionally priced based on forward prices.

The final price of these sales will be determined during the fourth quarter of 2019. A 10% change in the realized prices compared to the provisionally priced sales, all other factors held constant, would increase or reduce iron ore and iron ore pellets net income by R\$677 and copper net income by R\$242.

5. Costs and expenses by nature

a) Cost of goods sold and services rendered

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Personnel	2,005	2,255	5,821	6,125
Materials and services	3,779	3,950	11,192	10,319
Fuel oil and gas	1,407	1,520	4,040	4,029
Maintenance	2,940	2,725	8,109	7,556
Energy	892	830	2,478	2,469
Acquisition of products	820	447	1,760	1,210
Depreciation and depletion	3,335	3,233	9,576	8,912
Freight	4,869	5,061	11,052	11,414
Others	2,581	2,806	6,632	7,226
Total	22,628	22,827	60,660	59,260
Cost of goods sold	21,863	22,305	58,615	57,673
Cost of services rendered	765	522	2,045	1,587
Total	22,628	22,827	60,660	59,260

b) Selling and administrative expenses

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Personnel	177	242	514	589
Services	97	82	201	208
Depreciation and amortization	49	67	163	181
Others	181	144	471	399
Total	504	535	1,349	1,377

c) Other operating (income) expenses, net

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Provision for litigations (i)	132	189	1,057	433
Profit sharing program (ii)	86	141	283	511
Others (iii)	274	(86)	(377)	98
Total	492	244	963	1,042

(i) Includes the change in the expected outcome of probable loss of the lawsuit related to the accident of ship loaders, at the Praia Mole maritime terminal, in Espírito Santo, for the nine-month period ended September 30, 2019.

(ii) Refers to profit sharing program for eligible employees, except for executives whose variable remuneration was suspended as described in note 3.

(iii) Includes the reversal of amounts provided for legal proceedings related to the Rede Ferroviária Federal S.A lawsuit, for the nine-month period ended September 30, 2019.

6. Financial result

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Financial income				
Short-term investments	313	197	667	461
Others	212	248	701	653
	525	445	1,368	1,114
Financial expenses				
Loans and borrowings gross interest	(1,024)	(1,071)	(3,049)	(3,220)
Capitalized loans and borrowing costs	133	197	429	551
Participative stockholders' debentures	(1,901)	(30)	(4,211)	(1,652)
Interest on REFIS	(163)	(192)	(488)	(564)
Interest on lease liabilities	(50)	-	(219)	-
Others (i)	(1,303)	(383)	(2,661)	(1,435)
	(4,308)	(1,479)	(10,199)	(6,320)
Other financial items, net				
Net foreign exchange gains (losses) - Loans and borrowings	(1,001)	(2,689)	(832)	(11,627)
Derivative financial instruments	(308)	(402)	287	(1,218)
Other foreign exchange gains (losses), net	1,092	28	983	1,742
Indexation losses, net	(556)	(861)	(1,587)	(1,650)
	(773)	(3,924)	(1,149)	(12,753)
Financial results	(4,556)	(4,958)	(9,980)	(17,959)

(i) Includes expenses with cash tender offer repurchased in the amount of R\$1,014 (note 16iv), for the three and nine-month period ended September 30, 2019.

Net investment of foreign operation

Since January 1, 2019, the Company has considered certain long-term loans payable to Vale International S.A., for which settlement is neither planned nor likely to occur in the foreseeable future, as part of its net investment in that foreign operation. The foreign exchange differences arising on the monetary item are recognized in other comprehensive income, in the "Cumulative translation adjustments", and reclassified from stockholders' equity to income statement at the moment of the disposal or partial disposal of the net investment. The Company recognized a loss of R\$4,444 (R\$2,933 net of taxes) and R\$3,874 (R\$2,557 net of taxes) for the three and nine-month period ended September 30, 2019, respectively, in the "Cumulative translation adjustments" in stockholders' equity.

7. Income taxes

a) Deferred income tax assets and liabilities

Changes in deferred tax are as follow:

	Consolidated	
	Assets	Liabilities
Deferred taxes, net		
Balance at June 30, 2019	29,501	5,629
Effect in income statement	(106)	378
Acquisition of subsidiaries (i)	382	935
Translation adjustment	636	501
Other comprehensive income	2,012	(120)
Balance at September 30, 2019	32,425	7,323

	Consolidated	
	Assets	Liabilities
Deferred taxes, net		
Balance at June 30, 2018	25,199	6,472
Effect in income statement	(2,743)	(13)
Translation adjustment	319	328
Other comprehensive income	100	65
Balance at September 30, 2018	22,875	6,852

	Consolidated	
	Assets	Liabilities
Deferred taxes, net		
Balance at December 31, 2018	26,767	5,936
Effect in income statement	2,701	212
Acquisition of subsidiaries (i)	382	935
Translation adjustment	590	599
Other comprehensive income	1,985	(359)
Balance at September 30, 2019	32,425	7,323

	Consolidated	
	Assets	Liabilities
Deferred taxes, net		
Balance at December 31, 2017	21,959	5,687
Effect in income statement	(1,976)	45
Transfers between asset and liabilities	29	29
Translation adjustment	1,337	1,047
Other comprehensive income	1,432	44
Effect of discontinued operations		
Effect in income statement	134	-
Transfer to net assets held for sale	(40)	-
Balance at September 30, 2018	22,875	6,852

(i) Refers to the acquisition of New Steel and Ferrous Resources Limited (note 12).

b) Income tax reconciliation – Income statement

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

	Consolidated			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Income before income taxes	10,327	8,058	2,778	13,919
Income taxes at statutory rate - 34%	(3,512)	(2,739)	(945)	(4,732)
Adjustments that affect the basis of taxes:				
Income tax benefit from interest on stockholders' equity	-	794	-	2,382
Tax incentives	650	575	889	1,226
Equity results	33	45	289	198
Unrecognized tax losses of the period	(1,126)	(823)	(2,755)	(1,698)
Others	89	(302)	(759)	128
Income taxes	(3,866)	(2,450)	(3,281)	(2,496)

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.

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. At September 30, 2019, the balance of R\$16,052 (R\$1,722 classified as current liabilities and R\$14,330 classified as non-current liabilities) is due in 109 remaining monthly installments, bearing the SELIC interest rate (Special System for Settlement and Custody), which is the Brazilian federal funds rate.

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,	
	2019	2018	2019	2018
Net income (loss) attributable to Vale's stockholders:				
Net income (loss) from continuing operations	6,542	5,753	(264)	11,481
Loss from discontinued operations	-	-	-	(310)
Net income (loss)	6,542	5,753	(264)	11,171
Thousands of shares				
Weighted average number of shares outstanding - common shares	5,181,093	5,180,238	5,180,866	5,191,638
Basic and diluted earnings (loss) per share from continuing operations:				
Common share (R\$)	1.26	1.11	(0.05)	2.20
Basic and diluted loss per share from discontinued operations:				
Common share (R\$)	-	-	-	(0.06)
Basic and diluted earnings (loss) per share:				
Common share (R\$)	1.26	1.11	(0.05)	2.14

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

9. Accounts receivable

	Consolidated	
	September 30, 2019	December 31, 2018
Accounts receivable	9,841	10,502
Expected credit loss	(274)	(241)
	9,567	10,261
Revenue related to the steel sector - %	88.72%	85.50%

	Consolidated	
	Three-month period ended September 30,	Nine-month period ended September 30,
	2019	2018
Impairment of accounts receivable recorded in the income statement	(7)	7
	(19)	(10)

There is no customer that individually represents more than 10% of the Company's accounts receivable or revenues.

10. Inventories

	Consolidated	
	September 30, 2019	December 31, 2018
Finished products	12,230	10,847
Work in progress	3,163	2,664
Consumable inventory	3,884	3,705
Total	19,277	17,216

	Consolidated	
	Three-month period ended September 30,	Nine-month period ended September 30,
	2019	2018
Provision (reversal) for net realizable value	94	(132)

Finished and work in progress products inventories by segments are presented in note 4(b).

11. Other financial assets and liabilities

	Consolidated			
	Current		Non-Current	
	September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
Other financial assets				
Bank accounts restricted	-	-	334	-
Loans	-	-	369	589
Derivative financial instruments (note 20)	524	149	1,769	1,520
Investments in equity securities (note 12)	-	-	2,917	3,823
Related parties - Loans (note 25)	1,197	1,409	6,663	6,248
	1,721	1,558	12,052	12,180
Other financial liabilities				
Derivative financial instruments (note 20)	1,084	1,821	1,597	1,335
Related parties - Loans (note 25)	3,147	4,392	3,973	3,722
Participative stockholders' debentures	-	-	9,307	5,454
	4,231	6,213	14,877	10,511

Participative stockholders' debentures

On October 1, 2019 (subsequent event), the Company provided R\$394, as remuneration on its stockholders' debentures.

12. Acquisitions and divestitures

a) Fertilizers (discontinued operations)

In January 2018, the Company and The Mosaic Company ("Mosaic") concluded the transaction entered in December 2016, to sell (i) the phosphate assets located in Brazil, except for those located in Cubatão, Brazil; (ii) the control of Companhia Minera Miski Mayo S.A.C., in Peru; (iii) the potassium assets located in Brazil; and (iv) the potash projects in Canada.

The Company received R\$3,495 (US\$1,080 million) in cash and 34.2 million common shares, corresponding to 8.9% of Mosaic's outstanding common shares after the issuance of these shares totaling R\$2,907 (US\$899 million), based on the Mosaic's quotation at closing date of the transaction and a loss of R\$184 was recognized in the income statement from discontinued operations. Mosaic's shares received have been accounted for as a financial investment measured at fair value through other comprehensive income.

In May 2018, the Company concluded the transaction entered with Yara International ASA to sell its assets located in Cubatão, Brazil and received R\$882 (US\$255 million) in cash and a loss of R\$231 was recognized in the income statement from discontinued operations.

b) New Steel

On January 24, 2019, the Company acquired 100% of the share capital of New Steel Global NV ("New Steel") and gained its control for the total cash consideration of R\$1,884 (US\$496 million). New Steel is a company that develops processing and beneficiating technologies for iron ore through a completely dry process.

The consideration paid is mainly attributable to research and development projects. When completed, the Company expects to use the beneficiation technique on its pelletizing operations.

At the current stage, the intangible assets are not subject to amortization, instead, they are reviewed for impairment annually, or more frequently when a trigger for impairment has been identified. When the projects are implemented, they will be subject to amortization, according to the useful life defined.

Details of the net assets acquired are as follows:

	January 24, 2019
Acquired assets	70
Intangibles (note 14)	9
Other assets	61
Assumed liabilities	(1)
Net identifiable assets acquired	69
Fair value adjustment of intangible research and development asset (note 14)	2,748
Fair value adjustment of property, plant and equipment	2
Deferred tax liability	(935)
Total identifiable net assets at fair value	1,884

c) Ferrous Resources Limited

On August 1, 2019, the Company acquired 100% of the share capital of Ferrous Resources Limited ("Ferrous"), a Company that currently owns and operates iron ore mines nearby some Company's operations in Minas Gerais, Brazil for cash consideration of R\$1,919 (US\$509 million). Ferrous has been acquired to gain access to additional reserves for the Company.

The provisional fair values of identifiable assets acquired, and liabilities assumed of Ferrous, as at the date of acquisition, were:

	August 1, 2019
Acquired assets	2,585
Cash and cash equivalents	349
Accounts receivable	26
Inventories	38
Intangibles	18
Property, plant and equipment	1,613
Others	541
Assumed liabilities	(803)
Net identifiable assets acquired	1,782
Fair value adjustment on mineral properties	207
Deferred tax liability	(70)
Total identifiable net assets at fair value	1,919

	August 1, 2019
Cash consideration transferred	1,919
(-) Balances acquired	
Cash and cash equivalents	349
Net consolidated cash outflow	1,570

d) Divestment agreement in compliance with PTVI's Contract of Work

The Company's subsidiary, PT Vale Indonesia Tbk ("PTVI"), a public company in Indonesia, has an agreement in place dated October 17, 2014 with the government of the Republic of Indonesia to operate its mining licenses which includes a commitment to divest an additional 20% of PTVI's shares to Indonesian participants (approximately 20% of PTVI's shares are already registered on the Indonesian Stock Exchange - IDX).

The existing major shareholders, Vale and Sumitomo Metal Mining, Co., Ltd. ("SMM") hold 58.7% and 20.1%, respectively, of PTVI's issued shares. Vale and SMM have signed a Heads of Agreement with PT Indonesia Asahan Aluminium ("Inalum"), an Indonesian state-owned company, to satisfy the 20% interest divestment obligation in relation to PTVI, proportionally to their interest. After the transaction, Vale and SMM will hold together approximately 59% of PTVI's shares.

The Company expects to set and sign the final terms and conditions by December 31, 2019 and complete its divestment within six months from the execution of the divestment agreement.

13. Investments in associates and joint ventures

a) Changes during the period

Changes in investments in associates and joint ventures as follows:

	Consolidated		
	Associates	Joint ventures	Total
Balance at December 31, 2018	5,403	7,092	12,495
Additions	-	285	285
Translation adjustment	72	76	148
Equity results in income statement	23	827	850
Equity results in statement of comprehensive income	(15)	-	(15)
Impairment (i)	(630)	-	(630)
Dividends declared	(39)	(662)	(701)
Others	2	52	54
Balance at September 30, 2019	4,816	7,670	12,486

	Consolidated		
	Associates	Joint ventures	Total
Balance at December 31, 2017	4,774	7,028	11,802
Additions	-	79	79
Translation adjustment	228	157	385
Equity results in income statement	109	475	584
Dividends declared	-	(525)	(525)
Transfer from non-current assets held for sale (ii)	280	-	280
Others	20	(27)	(7)
Balance at September 30, 2018	5,411	7,187	12,598

(i) The Company identified an impairment trigger on its investment in a coal business joint venture and recognized a loss of R\$630 within "Equity results and other results in associates and joint ventures" for the period ended September 30, 2019.

(ii) 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).

The investments by segments are presented in note 4(b).

b) Guarantees provided

As of September 30, 2019, corporate financial guarantees provided by Vale (within the limit of its direct or indirect interest) for certain associates and joint ventures were R\$6,767 (December 31, 2018 R\$6,723).

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



Investments in associates and joint ventures (continued)

												Consolidated
			Investments in associates and joint ventures				Equity results in the income statement				Dividends received	
					Three-month period ended September 30,		Nine-month period ended September 30,		Three-month period ended September 30,		Nine-month period ended September 30,	
Associates and joint ventures	% ownership	% voting capital	September 30, 2019	December 31, 2018	2019	2018	2019	2018	2019	2018	2019	2018
Ferrous minerals												
Baovale Mineração S.A.	50.00	50.00	115	88	5	5	26	15	1	-	1	2
Companhia Coreano-Brasileira de Pelotização	50.00	50.00	376	404	57	64	161	177	-	-	126	56
Companhia Hispano-Brasileira de Pelotização (i)	50.89	50.89	364	323	50	59	129	137	-	-	148	87
Companhia Ítalo-Brasileira de Pelotização (i)	50.90	51.00	418	312	49	55	106	161	-	-	109	122
Companhia Nipo-Brasileira de Pelotização (i)	51.00	51.11	741	575	107	119	301	330	-	-	182	127
MRS Logística S.A.	48.16	46.75	2,073	1,922	110	48	211	153	-	-	-	-
VLI S.A.	37.60	37.60	3,280	3,319	(22)	84	8	89	-	28	-	28
Zhuhai YPM Pellet Co.	25.00	25.00	93	87	-	1	-	2	-	-	-	-
			7,460	7,030	356	435	942	1,064	1	28	566	422
Coal												
Henan Longyu Energy Resources Co., Ltd.	25.00	25.00	650	1,228	-	7	(6)	48	-	-	-	-
			650	1,228	-	7	(6)	48	-	-	-	-
Base metals												
Korea Nickel Corp.	25.00	25.00	57	54	-	2	(2)	6	-	-	-	-
			57	54	-	2	(2)	6	-	-	-	-
Others												
Aliança Geração de Energia S.A. (i)	55.00	55.00	1,871	1,882	9	10	100	91	-	-	111	88
Aliança Norte Energia Participações S.A. (i)	51.00	51.00	649	628	16	16	21	49	-	-	-	-
California Steel Industries, Inc.	50.00	50.00	1,063	958	7	97	109	238	-	-	83	56
Companhia Siderúrgica do Pecém (ii)	50.00	50.00	-	-	(285)	(460)	(285)	(867)	-	-	-	-
Mineração Rio do Norte S.A.	40.00	40.00	396	360	22	7	35	(14)	-	-	-	-
Others			340	355	(26)	20	(64)	(31)	-	-	2	-
			4,319	4,183	(257)	(310)	(84)	(534)	-	-	196	144
Total			12,486	12,495	99	134	850	584	1	28	762	566

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

(ii) Companhia Siderúrgica do Pecém ("CSP") is a joint venture and its results are accounted for under the equity method, in which the accumulated losses are capped to the Company's interest in the investee's capital based on the applicable law and requirements. That is, after the investment is reduced to zero, the Company does not recognize further losses nor liabilities associated with the investee.

Vale's investment in Samarco was impaired in full and no provision was recognized in relation to the Samarco's negative reserves (note 17).

14. Intangibles

Changes in intangibles are as follows:

						Consolidated
	Goodwill	Concessions (i)	Right of use	Software	Research & development project and patents (ii)	Total
Balance at December 31, 2018	14,155	15,737	530	428	-	30,850
Additions	-	1,054	-	125	-	1,179
Disposals	-	(54)	-	(1)	-	(55)
Amortization	-	(755)	(5)	(220)	-	(980)
Acquisition of subsidiary	-	12	-	6	2,757	2,775
Translation adjustment	721	47	46	16	-	830
Balance at September 30, 2019	14,876	16,041	571	354	2,757	34,599
Cost	14,876	20,357	853	3,805	2,757	42,648
Accumulated amortization	-	(4,316)	(282)	(3,451)	-	(8,049)
Balance at September 30, 2019	14,876	16,041	571	354	2,757	34,599

(i) Based on technical studies carried out by an independent company and after approval by the regulatory agency (ANTT), the Company reduced the useful life of its railroad tracks in 2019.

(ii) Refers mainly to the acquisition of New Steel Global N.V. (note 12b).

						Consolidated
	Goodwill	Concessions	Right of use	Software	Research & development project and patents	Total
Balance at December 31, 2017	13,593	13,236	506	759	-	28,094
Additions	-	2,448	-	22	-	2,470
Disposals	-	(75)	-	-	-	(75)
Amortization	-	(341)	(22)	(284)	-	(647)
Translation adjustment	1,156	97	69	26	-	1,348
Balance at September 30, 2018	14,749	15,365	553	523	-	31,190
Cost	14,749	19,121	872	4,329	-	39,071
Accumulated amortization	-	(3,756)	(319)	(3,806)	-	(7,881)
Balance at September 30, 2018	14,749	15,365	553	523	-	31,190

Concessions

The technical studies and legal documents on early extension of the Vitória Minas Railroad (EFVM) and Carajás Railroad (EFC) concessions are currently under review by the Federal Court of Audit. Vale awaits the end of the process in the public sphere to submit the proposal, with the required counterparts, to its Board of Directors.

15. Property, plant and equipment

Changes in property, plant and equipment are as follows:

	Consolidated								
	Land	Building	Facilities	Equipment	Mineral properties	Lease agreements	Others	Constructions in progress	Total
Balance at December 31, 2018	2,459	42,434	43,536	24,826	32,931	-	28,175	13,120	187,481
Effects of IFRS 16 adoption (i)	-	-	-	-	-	6,978	-	-	6,978
Additions (ii)	-	-	-	-	-	436	-	10,734	11,170
Disposals	(85)	(308)	(143)	(206)	(627)	(24)	(819)	(53)	(2,265)
Assets retirement obligation	-	-	-	-	1,165	-	-	-	1,165
Depreciation, amortization and depletion	-	(1,527)	(1,908)	(2,504)	(1,753)	(548)	(1,926)	-	(10,166)
Acquisition of subsidiary (iii)	233	56	156	173	1,044	6	2	186	1,856
Translation adjustment	43	1,047	925	1,060	2,228	416	602	972	7,293
Transfers	7	684	981	2,735	1,453	-	2,099	(7,959)	-
Balance at September 30, 2019	2,657	42,386	43,547	26,084	36,441	7,264	28,133	17,000	203,512
Cost	2,657	74,581	70,636	51,751	72,663	7,812	48,321	17,000	345,421
Accumulated depreciation	-	(32,195)	(27,089)	(25,667)	(36,222)	(548)	(20,188)	-	(141,909)
Balance at September 30, 2019	2,657	42,386	43,547	26,084	36,441	7,264	28,133	17,000	203,512

	Consolidated								
	Land	Building	Facilities	Equipment	Mineral properties	Lease agreements	Others	Constructions in progress	Total
Balance at December 31, 2017	2,375	40,028	38,986	22,803	29,999	-	27,104	20,240	181,535
Additions (ii)	-	-	-	-	-	-	-	6,058	6,058
Disposals	(1)	(124)	(144)	(862)	(15)	-	(198)	(53)	(1,397)
Assets retirement obligation	-	-	-	-	(495)	-	-	-	(495)
Depreciation, amortization and depletion	-	(1,534)	(1,863)	(2,246)	(1,393)	-	(1,798)	-	(8,834)
Translation adjustment	114	2,262	1,873	2,321	3,602	-	1,380	1,498	13,050
Transfers	25	1,979	4,569	3,457	1,170	-	2,625	(13,825)	-
Balance at September 30, 2018	2,513	42,611	43,421	25,473	32,868	-	29,113	13,918	189,917
Cost	2,513	71,305	68,732	49,349	66,544	-	46,450	13,918	318,811
Accumulated depreciation	-	(28,694)	(25,311)	(23,876)	(33,676)	-	(17,337)	-	(128,894)
Balance at September 30, 2018	2,513	42,611	43,421	25,473	32,868	-	29,113	13,918	189,917

(i) Refers to the recognition of right-of-use assets related to lease agreements in accordance with IFRS 16/CPC 06 (R2). Changes in leases by asset class are disclosed in note 2(c)

(ii) Includes capitalized borrowing costs.

(iii) Refers mainly to the acquisition of Ferrous Resources Limited (note 12c).

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) compared to those disclosed in the financial statements as at December 31, 2018.

Accounting policy

Leases - At inception of a contract, the Company assesses whether a contract is, or contains, a lease. A contract is, or contains a lease, if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date. The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the lease term or the end of the useful life of the right-of-use asset.

The lease liability is initially measured at the present value of the lease payments, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Company's incremental borrowing rate. Lease payments included in the measurement of the lease liability comprise: (i) fixed payments, including in-substance fixed payments; (ii) variable lease payments that depend on an index or a rate; and (iii) the exercise price under a purchase option or renewal option that are under the Company's control and is reasonably certain to be exercised.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

16. Loans, borrowings, cash and cash equivalents and short-term investments

a) Cash and cash equivalents

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

b) Short-term investments

At September 30, 2019, the balance of R\$3,773 is mainly comprised by investments in Financial Treasury Bills ("LFTs"), which are Brazilian government bonds, issued by the National Treasury. LFTs are floating-rate securities, liquid in the secondary markets and are convertible to known amounts of cash subject to a low risk of changes in value.

c) Loans and borrowings

i) Total debt

	Consolidated			
	Current liabilities		Non-current liabilities	
	September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
Principal in:				
US\$	1,415	993	42,495	39,909
EUR	-	-	4,314	4,217
R\$	3,222	1,907	8,776	11,392
Other currencies	63	96	433	492
Accrued charges	845	893	12	29
Total	5,545	3,889	56,030	56,039

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

	Consolidated	
	Principal	Estimated future interest payments (i)
2019	521	755
2020	4,673	3,284
2021	3,702	3,022
2022	9,686	2,703
Between 2023 and 2027	23,700	9,615
2028 onwards	18,436	12,586
Total	60,718	31,965

(i) Based on interest rate curves and foreign exchange rates applicable as at September 30, 2019 and considering that the payments of principal will be made on their contracted payments dates. The amount includes the estimated interest not yet accrued and the interest already recognized in the interim financial statements.

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

	Consolidated
	Loans and borrowings
June 30, 2019	60,511
Additions	3,784
Repayments	(7,013)
Interest paid	(993)
Cash flow from financing activities	(4,222)
Effect of exchange rate	4,335
Interest accretion	951
Non-cash changes	5,286
September 30, 2019	61,575

	Consolidated
	Loans and borrowings
December 31, 2018	59,928
Additions	11,886
Repayments	(14,213)
Interest paid	(2,862)
Cash flow from financing activities	(5,189)
Effect of exchange rate	4,015
Interest accretion	2,821
Non-cash changes	6,836
September 30, 2019	61,575

iii) Credit lines

To mitigate liquidity risk, Vale has two revolving credit facilities, which will mature in 2020 and 2022, in the available amount of R\$20,822 (US\$5,000 million) to assist the short-term liquidity management and to enable more efficiency in cash management, being consistent with the strategic focus on cost of capital reduction. As of September 30, 2019, these lines are undrawn.

iv) Funding and Repayments

During the nine-month period ended September 30, 2019, the Company entered into export financing lines and long-term debts. Additionally, the Company conducted a repurchased for certain guaranteed notes issued by Vale a total of R\$4,164 (US\$1,362 million).

v) Guarantees

As at September 30, 2019 and December 31, 2018, loans and borrowings are secured by property, plant and equipment in the amount of R\$870 and R\$857, respectively.

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

vi) Covenants

Some of the Company's debt agreements with lenders contain financial covenants. The primary financial covenants in those agreements require maintaining certain ratios, such as debt to EBITDA (Earnings before Interest Taxes, Depreciation and Amortization) and interest coverage. The Company has not identified any instances of noncompliance as at September 30, 2019.

17. Liabilities related to associates and joint ventures

On November 5, 2015, a rupture has been experienced in the Fundão tailings dam, in Mariana (MG), operated by Samarco Mineração S.A. ("Samarco"), a joint venture controlled by Vale S.A. and BHP Billiton Brasil Ltda. ("BHP"). In March 2016, Samarco and its shareholders entered into a Framework Agreement with governmental authorities, in which Samarco, Vale S.A. and BHP agreed to establish the Fundação Renova, an entity responsible to develop and implement 42 long-term mitigation and compensation programs.

In addition to the Fundão tailings dam, Samarco owns the Germano dam, which was also built under the upstream method and has been inactive since the Fundão dam rupture.

Fundação Renova

During the second quarter of 2019, Fundação Renova reviewed the estimates of the costs required to mitigate and compensate the impacts from the rupture of Fundão dam. As a result, Vale recognized an additional provision of R\$1,477, which is the present value of the revised estimate in relation to Vale's responsibility to support Fundação Renova and is equivalent to 50% of Samarco's additional obligations over the next 11 years.

Overall, the programs depend on future actions for their definition, which indicates a broad range of possible estimates. Estimates of mitigation and compensation actions may vary according to the progress of the ongoing programs developed by the Fundação Renova and changes in scope. The amounts disclosed in these interim financial statements have been determined based on Management's best estimates and consider the facts and circumstances known to date.

The contingencies related to the Fundão dam rupture are disclosed in note 22.

Germano dam

Due to the new safety requirements set by ANM, Samarco prepared a project for the de-characterization of this dam. During May 2019, the concept of a project for the de-characterization of the Germano dam was filed. The conceptual project was concluded in August 2019 and is subject to further review and eventual approval by the competent authorities. Accordingly, based on the information available on the preparation of these interim financial statements, the estimated amount discounted at the present value using the rate of 3.40% and based on the expected cash outflows resulted in a provision of R\$993 recognized in the second quarter of 2019.

The measurement of the costs and recognition of this provision takes into consideration several assumptions and estimates, which rely on factors, which some of that are not always under the Company's control. The main critical assumptions and estimates applied considers, among others: (i) volume of the waste to be removed based on historical data available and interpretation of the enacted laws and regulations; (ii) location availability for the tailings disposal; and (iii) acceptance by the authorities of the proposed engineering methods and solution. Therefore, changes in the critical assumptions and estimates may result in a material change to the provided amount as at September 30, 2019.

The changes in the provision to meet the obligations under the agreement related to the Fundão dam rupture and to the de-characterization of Germano dam in the nine-month period ended September 30, 2019 and 2018 are as follows:

	Consolidated	
	2019	2018
Balance at January 1	4,346	3,296
Payments	(729)	(699)
Present value valuation	397	143
Provision increase	2,470	1,476
Balance at September 30	6,484	4,216
Current liabilities	1,875	1,171
Non-current liabilities	4,609	3,045
Liabilities	6,484	4,216

Samarco's working capital

In addition to the provision, Vale S.A. made available R\$233 for the nine-month period ended September 30, 2019, and R\$194 for the nine-month period ended September 30, 2018, which was fully used to fund Samarco's working capital. This amount was recognized in Vale's income statement as an expense in "Equity results and other results in associates and joint ventures".

Until December 31, 2019, Vale S.A. may provide a short-term credit facility up to R\$374 to support the Samarco's cash needs, without any binding obligation to Samarco. The availability of funds by the shareholders – Vale S.A. and BHP – is subject to the fulfillment of certain conditions, being deliberated by the shareholders, in the same bases and concomitantly, if required.

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

Insurance

Since the Fundão dam rupture, the Company has been negotiating with insurers the indemnification payments based on its general liability policies. During the third quarter of 2019, the Company received payments in the amount of R\$417 (US\$105 million) and recognized a gain in the income statement as "Equity results and other results in associates and joint ventures".

Critical accounting estimates and judgments

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

18. Financial instruments classification

	September 30, 2019				December 31, 2018			
	Amortized cost	At fair value through OCI	At fair value through profit or loss	Total	Amortized cost	At fair value through OCI	At fair value through profit or loss	Total
Financial assets								
Current								
Cash and cash equivalents	35,644	-	-	35,644	22,413	-	-	22,413
Short-term investments	-	-	3,773	3,773	-	-	125	125
Derivative financial instruments	-	-	524	524	-	-	149	149
Accounts receivable	9,517	-	50	9,567	10,679	-	(418)	10,261
Related parties	1,197	-	-	1,197	1,409	-	-	1,409
	46,358	-	4,347	50,705	34,501	-	(144)	34,357
Non-current								
Bank accounts restricted	334	-	-	334	-	-	-	-
Derivative financial instruments	-	-	1,769	1,769	-	-	1,520	1,520
Investments in equity securities	-	2,917	-	2,917	-	3,823	-	3,823
Loans	369	-	-	369	589	-	-	589
Related parties	6,663	-	-	6,663	6,248	-	-	6,248
	7,366	2,917	1,769	12,052	6,837	3,823	1,520	12,180
Total of financial assets	53,724	2,917	6,116	62,757	41,338	3,823	1,376	46,537
Financial liabilities								
Current								
Suppliers and contractors	17,704	-	-	17,704	13,610	-	-	13,610
Leases	984	-	-	984	-	-	-	-
Derivative financial instruments	-	-	1,084	1,084	-	-	1,821	1,821
Loans and borrowings	5,545	-	-	5,545	3,889	-	-	3,889
Related parties	3,147	-	-	3,147	4,392	-	-	4,392
	27,380	-	1,084	28,464	21,891	-	1,821	23,712
Non-current								
Leases	6,558	-	-	6,558	-	-	-	-
Derivative financial instruments	-	-	1,597	1,597	-	-	1,335	1,335
Loans and borrowings	56,030	-	-	56,030	56,039	-	-	56,039
Related parties	3,973	-	-	3,973	3,722	-	-	3,722
Participative stockholders' debentures	-	-	9,307	9,307	-	-	5,454	5,454
	66,561	-	10,904	77,465	59,761	-	6,789	66,550
Total of financial liabilities	93,941	-	11,988	105,929	81,652	-	8,610	90,262

19. Fair value estimate

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

	September 30, 2019				December 31, 2018			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets								
Short-term investments	3,773	-	-	3,773	125	-	-	125
Derivative financial instruments	-	1,067	1,226	2,293	-	525	1,144	1,669
Accounts receivable	-	50	-	50	-	(418)	-	(418)
Investments in equity securities	2,917	-	-	2,917	3,823	-	-	3,823
Total	6,690	1,117	1,226	9,033	3,948	107	1,144	5,199
Financial liabilities								
Derivative financial instruments	-	2,189	492	2,681	-	2,466	690	3,156
Participative stockholders' debentures	-	9,307	-	9,307	-	5,454	-	5,454
Total	-	11,496	492	11,988	-	7,920	690	8,610

There were no transfers between Level 1 and Level 2, or between Level 2 and Level 3 for the nine-month period ended in September 30, 2019.

The following table presents the changes in Level 3 assets and liabilities for the nine-month period ended in September 30, 2019:

	Consolidated	
	Financial assets	Financial liabilities
Balance at December 31, 2018	1,144	690
Gain and losses recognized in income statement	82	(198)
Balance at September 30, 2019	1,226	492

Methods and techniques of evaluation

Derivative financial instruments

Derivative financial instruments are evaluated through the use of market curves and prices impacting each instrument at the closing dates, detailed in the item "market curves" (note 27).

For the pricing of options, the Company often uses the Black & Scholes model. In this model, the fair value of the derivative is determined basically as a function of the volatility and the price of the underlying asset, the strike price of the option, the risk-free interest rate and the option maturity. In the case of options where payoff is a function of the average price of the underlying asset over a certain period during the life 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 long and short positions are estimated by discounting their cash flows by the interest rate in the related currency. The fair value is determined by the difference between the present value of the long and short positions of the swap in the reference currency.

For the swaps indexed to TJLP, the calculation of the fair value assumes that TJLP is constant, that is, the projections of future cash flows in Brazilian Reais are made considering the last TJLP disclosed.

Forward and future contracts are priced using the future curves of their corresponding underlying assets. Typically, these curves are obtained on the stock exchanges where these assets 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 of derivatives within level 3 is estimated using discounted cash flows and option model valuation techniques with unobservable inputs of discount rates, stock prices and commodities prices.

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

The fair values and carrying amounts of loans and borrowings are as follows:

Financial liabilities	Balance	Fair value	Consolidated	
			Level 1	Level 2
September 30, 2019				
Debt principal	60,718	67,393	40,524	26,869
December 31, 2018				
Debt principal	59,006	63,013	41,408	21,605

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

20. Derivative financial instruments

a) Derivatives effects on statement of financial position

	Consolidated			
	Assets			
	September 30, 2019		December 31, 2018	
	Current	Non-current	Current	Non-current
Foreign exchange and interest rate risk				
CDI & TJLP vs. US\$ fixed and floating rate swap	38	-	35	-
IPCA swap	286	405	27	324
Eurobonds swap	-	-	-	17
Pre-dollar swap	74	-	73	3
	398	405	135	344
Commodities price risk				
Nickel	119	68	8	-
Bunker oil	-	4	3	-
	119	72	11	-
Options - MBR	-	1,175	-	1,144
Others	7	117	3	32
	7	1,292	3	1,176
Total	524	1,769	149	1,520

	Consolidated			
	Liabilities			
	September 30, 2019		December 31, 2018	
	Current	Non-current	Current	Non-current
Foreign exchange and interest rate risk				
CDI & TJLP vs. US\$ fixed and floating rate swap	776	466	1,481	380
IPCA swap	64	189	136	181
Eurobonds swap	25	180	19	-
Pre-dollar swap	56	215	40	72
	921	1,050	1,676	633
Commodities price risk				
Nickel	159	52	31	8
Bunker oil	-	-	114	-
	159	52	145	8
Options - MBR	-	73	-	62
Conversion options - VLI	-	419	-	628
Others	4	3	-	4
	4	495	-	694
Total	1,084	1,597	1,821	1,335

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

	Consolidated			
	Gain (loss) recognized in the income statement			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Foreign exchange and interest rate risk				
CDI & TJLP vs. US\$ fixed and floating rate swap	(423)	(254)	(386)	(971)
IPCA swap	191	(20)	300	(200)
Eurobonds swap	(128)	-	(211)	(40)
Pre-dollar swap	(101)	(33)	(113)	(162)
	(461)	(307)	(410)	(1,373)
Commodities price risk				
Nickel	142	(76)	202	(44)
Bunker oil	(4)	(32)	103	207
	138	(108)	305	163
Options - MBR	(125)	56	20	63
Conversion options - VLI	47	15	209	35
Others	93	(58)	163	(70)
	15	13	392	28
Total	(308)	(402)	287	(1,182)

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Expressed in millions of Brazilian reais, unless otherwise stated



	Consolidated			
	Financial settlement inflows (outflows)			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Foreign exchange and interest rate risk				
CDI & TJLP vs. US\$ fixed and floating rate swap	(614)	(170)	(1,014)	(369)
IPCA swap	-	-	(101)	22
Eurobonds swap	-	-	(19)	(13)
Pre-dollar swap	(9)	(8)	46	41
	(623)	(178)	(1,088)	(319)
Commodities price risk				
Nickel	179	(6)	195	67
Bunker oil	2	100	2	125
	181	94	197	192
Others	80	-	74	-
	80	-	74	-
Total	(362)	(84)	(817)	(127)

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

	Last maturity dates
Currencies and interest rates	September 2029
Nickel	December 2020
Brent	December 2019
Others	December 2027

c) Hedge in foreign operations

In January 2017, the Company implemented hedge accounting for the foreign currency risk arising from Vale S.A.'s net investments in Vale International S.A. and Vale International Holding GmbH. Under the hedge accounting program, the Company's debt denominated in U.S. dollars and Euros serves as a hedge instrument for these investments. With the program, the impact of exchange rate variations on debt denominated in U.S. dollars and Euros has been partially recorded in other comprehensive income, in the "Cumulative translation adjustments". As at September 30, 2019, the carrying value of the debts designated as instrument hedge of these investments are R\$10,278 (US\$2,468 million) and R\$3,407 (EUR750 million).

	Consolidated			
	Loss recognized in the other comprehensive income			
	Three-month period ended September 30,		Nine-month period ended September 30,	
	2019	2018	2019	2018
Hedge in foreign operation, net of tax	(630)	(308)	(546)	(2,338)

21. Provisions

	Consolidated			
	Current liabilities		Non-current liabilities	
	September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
Payroll, related charges and other remunerations (i)	3,096	4,054	-	-
Onerous contracts	158	235	2,694	2,486
Environmental obligations	396	382	881	784
Asset retirement obligations	257	331	14,929	11,738
Provisions for litigation (note 22)	-	-	5,929	5,258
Employee postretirement obligations (note 23)	337	276	9,060	7,225
Provisions	4,244	5,278	33,493	27,491

(i) Change mainly due to payment of profit sharing program.

22. Litigations

a) Provision for litigations

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

Changes in provision for litigations are as follows:

				Consolidated	
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2018	2,680	644	1,921	13	5,258
Additions and reversals, net (i)	49	640	350	18	1,057
Payments	(69)	(145)	(412)	-	(626)
Indexation and interest	15	135	50	5	205
Translation adjustment	32	(10)	13	-	35
Balance at September 30, 2019	2,707	1,264	1,922	36	5,929

				Consolidated	
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2017	2,483	432	1,924	34	4,873
Additions and reversals, net	62	78	306	(13)	433
Payments	(29)	(80)	(261)	(6)	(376)
Additions - discontinued operations	56	3	59	1	119
Indexation and interest	68	35	(9)	(3)	91
Translation adjustment	42	5	-	-	47
Balance at September 30, 2018	2,682	473	2,019	13	5,187

(i) Includes the change in the expected outcome of probable loss of the civil lawsuit related to the accident of ship loaders, at the Praia Mole maritime terminal, in Espírito Santo, for the nine-month period ended September 30, 2019.

b) Contingent liabilities

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

	Consolidated	
	September 30, 2019	December 31, 2018
Tax litigations	28,853	33,481
Civil litigations	6,728	7,583
Labor litigations	4,226	5,717
Environmental litigations	4,603	4,070
Total	44,410	50,851

i - Tax litigations - The most relevant contingent tax liabilities are associated with proceedings related to the (i) collection of IRPJ and CSLL, (ii) challenges of PIS and COFINS tax credits, (iii) assessments related to mining royalties (CFEM), and (iv) collection of ICMS, in particular related to credits we claimed in connection with the sale and transmission of electricity; collection of ICMS in connection with goods that enter into the State of Pará and collection of ICMS and penalties in connection with the transportation of iron ore by Vale itself. The changes over the period is mainly due to the new tax proceedings related to ICMS, the termination of the IRPJ, CSLL, ICMS and COFINS proceedings, the changes in the amount involved in the IRRF, CFEM and FAP cases as well as the imposition of the accrued interest and monetary updated on the amounts in dispute.

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

iii - Labor litigations - 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 litigations - The most significant claims concern alleged procedural deficiencies in licensing processes, non-compliance with existing environmental licenses or damage to the environment.

c) Judicial deposits

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

	Consolidated	
	September 30, 2019	December 31, 2018
Tax litigations	4,141	4,143
Civil litigations	403	231
Labor litigations	2,039	2,150
Environmental litigations	153	125
Brumadinho event	5,940	-
Total	12,676	6,649

In addition to the above-mentioned tax, civil, labor and environmental judicial deposits, the Company contracted R\$9.8 billion in guarantees for its lawsuits, as an alternative to judicial deposits. For the Brumadinho event, the Company contracted guarantees in the amount of R\$5.6 billion which were presented in court according agreement with Treasury Court of Minas Gerais and Public Prosecutor's Office.

d) Contingencies related to Samarco accident

(i) Public civil claim filed by the Federal Government and others and Public civil claim filed by Federal Prosecution Office ("MPF")

In 2016, the federal government, the Brazilian states of Espírito Santo and Minas Gerais and other governmental authorities have initiated a public civil lawsuit against Samarco and its shareholders, with an estimated value indicated by the plaintiffs of R\$20.2 billion. In the same year, 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 MPF is R\$155 billion.

In June 2018, the parties entered into an agreement ("Term of Adjustment of Conduct"), which extinguishes (i) the public civil claim of R\$20.2 billion filed by the Federal Government and others; and (ii) part of the claims included in the public civil claim of R\$155 billion filed by MPF.

In September 2019, the Court approved the list of entities selected by the community to provide it with technical assistance to assure its participation on the debates regarding the measures to be adopted for mitigate the impacts, accordingly to the referred agreement.

(ii) United States class action lawsuits

In March 2017, holders of bonds issued by Samarco Mineração S.A., filed a class action suit in the Federal Court in New York against Samarco Mineração S.A., Vale S.A., BHP Billiton Limited, BHP Billiton PLC and BHP Brasil Ltda. under U.S. federal securities laws. The plaintiffs allege that Vale S.A. made false and misleading statements or not made disclosures concerning the risks and dangers of the operations of Samarco's Fundão dam and the adequacy of related programs and procedures.

In June 2019, the Court issued a decision and order dismissing with prejudice the putative federal securities class action. Such decision is appealable and plaintiff's legal deadline is still ongoing. Based on the assessment of the Company's legal consultants, the defendants would have better arguments for a defense in case an appeal is filed by plaintiffs.

(iii) Criminal lawsuit

In 2016, the MPF brought a criminal lawsuit against Samarco and its shareholders, VogBr Recursos Hídricos e Geotecnia Ltda. and 22 individuals for the consequences related to Fundão dam failure. Currently, the progress of the criminal action is paralyzed due to the judgment of Habeas Corpus, with no decision.

On April 23, 2019, the Federal Court from the 1st Region ("TRF1") issued an Habeas Corpus writ and granted it to dismiss the criminal charges of homicide and physical injuries committed by oblique intent held against one of the defendants on the criminal action. At the same opportunity, the Court extended the writ's issuance to all other defendants on the case as the criminal information does not describe the crimes of homicide and physical injury, but the crime of flooding qualified by the result of death and physical injury as a consequence of the Fundão dam's failure. Therefore, the Court dismissed the homicide and physical injuries charges held against all defendants.

After acknowledging the Court's decisions, the Ponte Nova Court changed the process, withdrawing the case from the grand jury and putting it in the ordinary processing. In the same opportunity, the judge ruled to determine the parties to manifest themselves about this process alteration and, after the Federal Prosecution and the defenses presented their petitions, the criminal action currently awaits a new ruling. According to the due process of law, this new ruling will necessarily analyze the hypothesis of summary acquittal.

(iv) Tax proceedings

In 2018, the Office of the Attorney General for the National Treasury (PGFN) requested for a judicial order to secure the payment of alleged federal tax and social security debts regarding a Samarco. In May 2019, a favorable decision was issued dismissing the claim without prejudice, due to lack of procedural interest. The PGFN filed an appeal to the Local Court. The Company is waiting for the Court ruling.

e) Contingent Assets

(i) Compulsory loan

In 1999, the Company filed an ordinary suit in order to obtain the refund of the monetary adjustment and interests due over the compulsory loans paid in the period within 1977 and 1993. The Company has obtained a favorable unappealable decision, which partially recognized its right to be refunded about the difference of the monetary adjustment and interests due over the compulsory loans related to the third convertible bonds issued by Eletrobrás in the period within 1987 and 1993. The pleadings of the Company regarding the first and second convertible bonds (1978 to 1986) were refused by the Court. In 2015, the Company requested for the execution of the judgement in the amount of R\$524. A judicial decision determining the total amount to be refunded to the Company is still pending, then the related asset has not been accounted in Vale's financial statements yet.

(ii) ICMS included in PIS and COFINS tax base

Vale had been litigating this issue of ICMS included in PIS and COFINS tax base in two judicial proceedings, related to taxable events after December 2001. In one of the proceedings, the company obtained a definitive favorable decision (res judicata). The current decision fixed on the second proceeding is also favorable to the company, but this proceeding did not reach the res judicata. Vale is waiting for the final decision on the leading case before the Supreme Court to measure the tax arising from both proceedings. The company did not record this asset in its financial statement.

(iii) *Arbitral award related to Simandou*

In 2010, Vale acquired a 51% stake in VBG - Vale BSGR Limited ("VBG") (formerly BSG Resources (Guinea) Limited), which had iron ore concession rights in Simandou South ("Zogota") and iron ore exploration permits over the areas known as Simandou Blocks 1 & 2 in Guinea. In 2014, the Republic of Guinea revoked those rights after a finding that BSGR had obtained them through bribery of Guinean government officials. The Republic of Guinea did not make any finding of any involvement or responsibility on Vale's part.

Vale commenced arbitration proceedings against BSG Resources Limited ("BSGR") in April 2014, and in April 2019, the arbitral tribunal in London ruled in Vale's favor and ordered BSGR to pay to Vale the amount of R\$4,997 (US\$1.2 billion) plus costs and interest (with interest and costs, the award exceeds R\$8,329 (US\$2.0 billion)). The arbitral tribunal ruled that BSGR had defrauded Vale by inducing Vale to enter into the joint venture. On September 20, 2019, the English High Court ruled that Vale can proceed with enforcement of its R\$8,329 (US\$2.0 billion) arbitration award.

BSGR went into administration in March 2018, and Vale has commenced legal proceedings against BSGR before courts in London, England and in the United States District Court for the Southern District of New York to enforce the arbitral award against BSGR.

BSGR has also commenced proceedings in London challenging the enforcement of the award and has applied to the United States Bankruptcy Court to have its administration recognized in the United States. Vale intends to pursue the enforcement of the award and collection of the amounts due by all legally available means, but since there can be no assurance as to the timing and amount of any collections, the asset was not recognized in its financial statements.

(iv) *Canadian Tax Litigation Matter*

Vale Canada Limited ("VCL") is in settlement discussions with the Department of Justice and Canada Revenue Agency regarding a tax litigation matter, related to the appropriate tax treatment of certain receipts received, and expenditures incurred, by VCL, in respect of some merge and acquisition transactions in 2006. If settlement discussions are successful, it will give rise to an income tax refund of approximately R\$666 (CAD211 million), plus estimated interest refund, otherwise the court trial is set to December 2019. The Company has not recognized this asset in its financial statements.

23. Employee postretirement obligations

Reconciliation of net liabilities recognized in the statement of financial position

	September 30, 2019			Consolidated December 31, 2018		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(13,068)	(18,390)	(6,014)	(13,861)	(15,226)	(4,956)
Fair value of assets	20,885	15,007		18,355	12,681	-
Effect of the asset ceiling	(7,817)			(4,494)	-	-
Liabilities	-	(3,383)	(6,014)	-	(2,545)	(4,956)
Current liabilities	-	(86)	(251)	-	(74)	(202)
Non-current liabilities	-	(3,297)	(5,763)	-	(2,471)	(4,754)
Liabilities	-	(3,383)	(6,014)	-	(2,545)	(4,956)

24. Stockholders' equity

a) Share capital

As at September 30, 2019, the share capital was R\$77,300 corresponding to 5,284,474,782 shares issued and fully paid without par value.

Stockholders	September 30, 2019		
	ON	PNE	Total
Litel Participações S.A. and Litela Participações S.A.	980,605,889	-	980,605,889
BNDES Participações S.A.	323,496,276	-	323,496,276
Bradespar S.A.	293,907,266	-	293,907,266
Mitsui & Co., Ltd	286,347,055	-	286,347,055
Foreign investors - ADRs	1,162,282,011	-	1,162,282,011
Foreign institutional investors in local market	1,174,433,557	-	1,174,433,557
FMP - FGTS	50,044,298	-	50,044,298
PIBB - Fund	2,725,069	-	2,725,069
Institutional investors	507,888,198	-	507,888,198
Retail investors in Brazil	346,552,838	-	346,552,838
Brazilian Government (Golden Share)	-	12	12
Shares outstanding	5,128,282,457	12	5,128,282,469
Shares in treasury	156,192,313	-	156,192,313
Total issued shares	5,284,474,770	12	5,284,474,782
Share capital per class of shares (in millions)	77,300	-	77,300
Total authorized shares	7,000,000,000	-	7,000,000,000

b) Shares in treasury

The Company used 2,024,059 of its treasury shares to pay the Matching program of its eligible executives, except for those whose variable remuneration was suspended as described in note 3, in the amount of R\$84. It was recognized as "assignment and transfer of shares".

25. Related parties

The Company's related parties are subsidiaries, joint ventures, associates, stockholders 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 relate largely to amounts charged by joint ventures and associates related to the pelletizing plants operational lease and railway transportation services.

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

a) Transactions with related parties

	Consolidated							
	Three-month period ended September 30,							
	2019				2018			
	Joint Ventures	Associates	Major stockholders	Total	Joint Ventures	Associates	Major stockholders	Total
Net operating revenue	488	308	211	1,007	328	293	241	862
Cost and operating expenses	(1,846)	(48)	-	(1,894)	(2,382)	(26)	-	(2,408)
Financial result	217	-	(140)	77	85	-	(162)	(77)

	Consolidated							
	Nine-month period ended September 30,							
	2019				2018			
	Joint Ventures	Associates	Major stockholders	Total	Joint Ventures	Associates	Major stockholders	Total
Net operating revenue	1,108	830	556	2,494	922	824	587	2,333
Cost and operating expenses	(5,283)	(104)	-	(5,387)	(5,851)	(107)	-	(5,958)
Financial result	184	(2)	(260)	(78)	440	-	(668)	(228)

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 leases of the pelletizing plants.

b) Outstanding balances with related parties

	September 30, 2019				Consolidated December 31, 2018			
	Joint Ventures	Associates	Major stockholders (i)	Total	Joint Ventures	Associates	Major stockholders (i)	Total
Assets								
Cash and cash equivalents	-	-	4,885	4,885	-	-	4,867	4,867
Accounts receivable	404	74	20	498	426	163	12	601
Dividends receivable	390	37	-	427	511	-	-	511
Loans	7,860	-	-	7,860	7,657	-	-	7,657
Derivatives financial instruments	-	-	1,339	1,339	-	-	1,151	1,151
Other assets	303	-	-	303	96	-	-	96
Liabilities								
Supplier and contractors	2,609	112	34	2,755	854	80	94	1,028
Loans	-	5,703	9,174	14,877	-	5,136	10,268	15,404
Derivatives financial instruments	-	-	419	419	-	-	433	433
Other liabilities	1,417	126	-	1,543	2,978	-	-	2,978

(i) Refers to regular financial instruments with large financial institutions of which the stockholders are part of the controlling "shareholders' agreement".

Loans

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 R\$8,434 (US\$2,572 million). The outstanding receivable of R\$7,860 carries interest at 7.44% p.a.

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, which carries interest at 6.54% p.a.

26. Select notes to Parent Company information (individual interim information)

a) Other financial assets and liabilities

	Current		Parent company	
	September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
Other financial assets				
Bank accounts restricted	-	-	334	-
Loans	-	-	19	18
Derivative financial instruments	376	116	1,630	1,471
Investments in equity securities	-	-	2,549	3,334
Related parties - Loans	696	240	270	453
	1,072	356	4,802	5,276
Other financial liabilities				
Derivative financial instruments	889	1,506	1,157	1,245
Related parties - Loans	4,651	3,577	66,352	65,041
Participative stockholders' debentures	-	-	9,307	5,454
	5,540	5,083	76,816	71,740

b) Investments

	Parent company	
	2019	2018
Balance at January 1st,	139,510	117,387
Additions/Capitalizations (i)	5,708	1,032
Disposals	(84)	-
Translation adjustment	9,289	18,892
Equity results in income statement	5,070	4,688
Equity results in statement of comprehensive income	(955)	226
Dividends declared	(1,083)	(1,639)
Others (ii)	86	3,935
Balance at September 30,	157,541	144,521

(i) Refers to the acquisition of New Steel Global N.V. and Ferrous Resource Limited (note 12b and c).

(ii) In 2018 includes assets held for sale (Vale Fertilizantes) that were indirectly sold by the Parent Company.

c) Intangibles

	Parent company			
	Concessions (i)	Right of use	Software	Total
Balance at December 31, 2018	15,240	105	277	15,622
Additions	1,054	-	75	1,129
Disposals	(54)	-	-	(54)
Amortization	(685)	(4)	(179)	(868)
Balance at September 30, 2019	15,555	101	173	15,829
Cost	19,830	223	2,492	22,545
Accumulated amortization	(4,275)	(122)	(2,319)	(6,716)
Balance at September 30, 2019	15,555	101	173	15,829

	Parent company			
	Concessions	Right of use	Software	Total
Balance at December 31, 2017	12,773	111	587	13,471
Additions	2,431	-	8	2,439
Disposals	(72)	-	-	(72)
Amortization	(336)	(4)	(244)	(584)
Balance at September 30, 2018	14,796	107	351	15,254
Cost	18,469	223	3,114	21,806
Accumulated amortization	(3,673)	(116)	(2,763)	(6,552)
Balance at September 30, 2018	14,796	107	351	15,254

(i) Based on technical studies carried out by an independent company and after approval by the regulatory agency (ANTT), the Company reduced the useful life of its railroad tracks in 2019.

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d) Property, plant and equipment

	Parent company							
	Land	Building	Facilities	Equipment	Mineral properties	Leasing agreements (ii)	Others	Constructions in progress
Balance at December 31, 2018	1,735	26,559	30,593	10,004	7,689	-	19,240	7,996
Additions (i)	-	-	-	-	-	2,415	-	4,496
Disposals	(7)	(299)	(130)	(172)	(178)	-	(712)	(35)
Assets retirement obligation	-	-	-	-	556	-	-	-
Depreciation, amortization and depletion	-	(757)	(1,088)	(1,020)	(438)	(226)	(1,469)	-
Transfers	8	761	841	1,327	(351)	-	2,096	(4,682)
Balance at September 30, 2019	1,736	26,264	30,216	10,139	7,278	2,189	19,155	7,775
Cost	1,736	33,830	39,019	18,318	9,762	2,415	32,203	7,775
Accumulated depreciation	-	(7,566)	(8,803)	(8,179)	(2,484)	(226)	(13,048)	-
Balance at September 30, 2019	1,736	26,264	30,216	10,139	7,278	2,189	19,155	7,775

	Parent company							
	Land	Building	Facilities	Equipment	Mineral properties	Leasing agreements	Others	Constructions in progress
Balance at December 31, 2017	1,739	25,315	27,204	9,716	5,367	-	18,205	15,432
Additions (i)	-	-	-	-	-	-	-	2,822
Disposals	-	(1)	(129)	(49)	-	-	(37)	(32)
Assets retirement obligation	-	-	-	-	13	-	-	-
Depreciation, amortization and depletion	-	(617)	(933)	(957)	(220)	-	(1,317)	-
Transfers	23	1,532	3,832	1,529	643	-	2,428	(9,987)
Balance at September 30, 2018	1,762	26,229	29,974	10,239	5,803	-	19,279	8,235
Cost	1,762	32,435	37,423	17,754	7,774	-	30,893	8,235
Accumulated depreciation	-	(6,206)	(7,449)	(7,515)	(1,971)	-	(11,614)	-
Balance at September 30, 2018	1,762	26,229	29,974	10,239	5,803	-	19,279	8,235

(i) Includes capitalized borrowing costs.

(ii) Refers to the recognition of the leases in accordance with IFRS 16/CPC 06 (R2) (note 2c).

e) Loans and borrowings

	Parent company			
	Current liabilities		Non-current liabilities	
	September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
Principal in:				
US\$	1,199	557	9,078	9,004
EUR	-	-	3,406	3,329
R\$	2,868	1,581	8,417	10,749
Accrued charges	308	385	-	-
Total	4,375	2,523	20,901	23,082

The future flows of debt payments (principal) are as follows:

	Parent company
	Debt principal
2019	439
2020	4,043
2021	3,101
2022	3,462
Between 2023 and 2027	11,345
2028 onwards	2,578
	24,968

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f) Provisions

	Current liabilities		Non-current liabilities	
	September 30, 2019	December 31, 2018	September 30, 2019	December 31, 2018
Payroll, related charges and other remunerations	2,083	2,808	-	-
Environmental obligations	293	277	489	514
Asset retirement obligations	103	158	3,390	3,217
Provisions for litigation	-	-	5,164	4,483
Employee postretirement obligations	128	88	1,547	1,544
Provisions	2,607	3,331	10,590	9,758

g) Provisions for litigation

	Parent company			
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation
Balance at December 31, 2018	2,240	467	1,767	9
Additions and reversals, net	51	529	314	18
Payments	(22)	(100)	(290)	-
Indexation and interest	19	107	49	6
Balance at September 30, 2019	2,288	1,003	1,840	33

	Parent company			
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation
Balance at December 31, 2017	2,117	308	1,770	24
Additions and reversals, net	12	42	297	(13)
Payments	(8)	(12)	(240)	-
Indexation and interest	63	19	(15)	(3)
Additions - discontinued operations	56	3	59	1
Balance at September 30, 2018	2,240	360	1,871	9

h) Contingent liabilities

	Parent company	
	September 30, 2019	December 31, 2018
Tax litigation	25,946	30,808
Civil litigation	5,240	5,371
Labor litigation	4,049	5,398
Environmental litigation	4,439	3,897
Total	39,674	45,474

i) Income taxes

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

	Parent company	
	Nine-month period ended September 30,	
	2019	2018
Income (loss) before income taxes	(177)	10,826
Income taxes at statutory rates - 34%	60	(3,681)
Adjustments that affect the basis of taxes:		
Income tax benefit from interest on stockholders' equity	-	2,382
Tax incentives	535	855
Equity results	1,724	1,591
Others (i)	(2,406)	(492)
Income taxes	(87)	655

(i) Refers to the impact on the parent company of the profit of the subsidiaries abroad taxed in Brazil.

27. 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, 2019, with the following information: notional amount, fair value including credit risk, gains or losses in the period, value at risk and the fair value breakdown by year of maturity.

a) Foreign exchange and interest rates derivative positions

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

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

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

	Notional				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
Flow	September 30, 2019	December 31, 2018	Index	Average rate	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2019	2019	2020	2021+
CDI vs. US\$ fixed rate swap					(252)	(178)	(74)	32	3	(133)	(122)
Receivable	R\$ 2,160	R\$ 1,581	CDI	100.62%							
Payable	US\$ 569	US\$ 456	Fix	3.31%							
TJLP vs. US\$ fixed rate swap					(723)	(1,433)	(951)	42	(323)	(67)	(333)
Receivable	R\$ 2,808	R\$ 2,303	TJLP +	1.19%							
Payable	US\$ 866	US\$ 994	Fix	2.16%							
TJLP vs. US\$ floating rate swap					(229)	(215)	(17)	5	(229)	-	-
Receivable	R\$ 164	R\$ 181	TJLP +	0.80%							
Payable	US\$ 97	US\$ 107	Libor +	-1.25%							
R\$ fixed rate vs. US\$ fixed rate swap					(195)	(36)	46	34	(11)	23	(207)
Receivable	R\$ 2,162	R\$ 1,078	Fix	6.29%							
Payable	US\$ 605	US\$ 351	Fix	0.71%							
IPCA vs. US\$ fixed rate swap					32	(310)	(95)	48	10	3	19
Receivable	R\$ 2,875	R\$ 1,315	IPCA +	5.16%							
Payable	US\$ 772	US\$ 434	Fix	4.01%							
IPCA vs. CDI swap					406	344	22	10	-	226	180
Receivable	R\$ 1,625	R\$ 1,350	IPCA +	6.62%							
Payable	R\$ 1.350	R\$ 1.350	CDI	98.58%							

(ii) Protection program for EUR denominated debt instruments

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, 2019	December 31, 2018	Index	Average rate	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2019	2019	2020 2021+
EUR fixed rate vs. US\$ fixed rate swap					(205)	(2)	(19)	20	-	(25) (180)
Receivable	€ 500	€ 500	Fix	3.75%						
Payable	US\$ 613	US\$ 613	Fix	4.29%						

(iii) Protection for treasury volatility related to tender offer transaction

To reduce the volatility of the premium to be paid to investors for the tender offer transaction issued on September 2019, treasury lock transactions were implemented and already settled.

Flow	Notional			Fair value		Financial Settlement Inflows (Outflows)	Fair value by year
	September 30, 2019	December 31, 2018	Bought / Sold	September 30, 2019	December 31, 2018	September 30, 2019	2019
Forwards	-	-	B	-	-	66	-

b) Commodities derivative positions

(i) Bunker Oil purchase cash flows protection program

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 on bunker oil and on Brent Crude Oil for different portions of the exposure.

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

Bunker Oil Contracts

Flow	Notional (ton)			Fair value		Financial settlement Inflows (Outflows)	Fair value by year
	September 30, 2019	December 31, 2018	Bought / Sold	September 30, 2019	December 31, 2018	September 30, 2019	2019
Call options	-	2,100,000	B	-	4	13	-
Put options	-	2,100,000	S	-	(115)	-	-
Total				-	(111)	13	-

As at September 30, 2019, includes R\$13, of transactions in which the financial settlement occurs subsequently of the closing month.

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Brent Crude Oil Contracts

Flow	Notional (bbl.)		Bought / Sold	Average strike (US\$/bbl.)	Fair value		Financial settlement Inflows (Outflows) September 30, 2019	Value at Risk September 30, 2019	Fair value by year 2019
	September 30, 2019	December 31, 2018			September 30, 2019	December 31, 2018			
Call options	6,286,500	-	B	79	2	-	-	2	2
Put options	6,286,500	-	S	43	-	-	-	1	-
Total					2	-	-	3	2

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

Operational Hedging Programs

In the operational hedging program for nickel sales at fixed prices, derivatives transactions were implemented, usually through the purchase of nickel forwards, to convert into floating prices the contracts with clients that required a fixed price. During this quarter, the volumes were substantially unwound in accordance with our current strategy of reducing the cash flow exposure to nickel price fluctuations.

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.

							Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	Notional (ton)				Fair value				
Flow	September 30, 2019	December 31, 2018	Bought / Sold	Average strike (US\$/ton)	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2019	2019
Fixed price sales protection									
Nickel forwards	47	7,244	S	15,935	-	(39)	197	-	-
Raw material purchase protection									
Nickel forwards	94	120	S	13,432	(2)	1	(2)	-	(2)
Copper forwards	30	81	S	5,964	-	-	-	-	-
Total					(2)	(38)	195	-	(2)

Nickel Revenue Hedging Program

To reduce the volatility of its future cash flows arising from changes in nickel prices, the company implemented a Nickel Revenue Hedging Program. Under this program, hedge operations were executed using option contracts to protect a portion of the company highly probable forecast sales at floating prices, thus establishing a cushion to guarantee prices above our Nickel Average Unit Cash Cost and investments for the hedged volumes. A hedge accounting treatment is given to this program.

The derivative transactions under the program are negotiated over-the-counter and the financial settlement inflows/outflows are offset by the protected items' losses/gains due to nickel prices changes.

Flow	Notional (ton)		Bought / Sold	Average strike (US\$/ton)	Fair value		Financial settlement Inflows (Outflows) September 30, 2019	Value at Risk September 30, 2019	Fair value by year	
	September 30, 2019	December 31, 2018			September 30, 2019	December 31, 2018			2019	2020+
Call options	87,854	-	S	18,681	(347)	-	(7)	63	(27)	(320)
Put options	87,854	-	B	15,677	339	-	-	51	15	324
Total					(8)	-	(7)	114	(12)	4

c) Freight derivative positions

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 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)				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2019	December 31, 2018	Bought / Sold	Average strike (US\$/day)	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2019	2019
Freight forwards	535	480	B	18,086	5	3	(8)	2	5

d) Wheaton Precious Metals Corp. warrants

The Company owns warrants issued by Wheaton Precious Metals Corp. (WPM), a Canadian company with stocks negotiated in Toronto Stock Exchange and New York Stock Exchange. Such warrants have payoff similar to that of an American call option 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 of warranties)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2019	December 31, 2018	Bought / Sold	Average strike (US\$/share)	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2019	2023
Call options	10,000,000	10,000,000	B	44	66	32	-	8	66

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

The Company has debentures which lenders have the option to convert the outstanding debt into a specified quantity of VLI's shares, owned by the Company. This option may be fully, or part exercised, upon payment to the Company of the strike price, considering the terms, conditions and other limitations existing in the agreement, at any time and at the discretion of the creditor, as of December 2017 until the maturity date of the debentures, December 2027.

Flow	Notional (quantity)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2019	December 31, 2018	Bought / Sold	Average strike (R\$/share)	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2019	2027
Conversion options	140,239	140,239	S	7,690	(213)	(228)	-	13	(213)

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

In 2015, the Company entered into an agreement to sell a stake of its interest in MBR and under the terms agreed, the Company has a call option in place giving right to buy back this non-controlling interest at any time until 2025 for a consideration calculated based on terms set under the agreement. Moreover, under certain restrict and contingent conditions, which are beyond both acquirer's and seller's control, the contract gives the acquirer the right to sell back its stake to the Company.

Flow	Notional (quantity, in millions)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	September 30, 2019	December 31, 2018	Bought / Sold	Average strike (R\$/share)	September 30, 2019	December 31, 2018	September 30, 2019	September 30, 2019	2019+
Options	2,139	2,139	B/S	1.5	1,102	1,082	-	53	1,102

g) Option related to SPCs Casa dos Ventos

The Company acquired in January 2019 a call option related to shares of the special purpose companies Ventos de São Bento Energias Renováveis, Ventos São Galvão Energias Renováveis and Ventos de Santo Eloy Energias Renováveis (SPCs Casa dos Ventos), which are part of the wind farm of Folha Larga Sul project, in Campo Formoso, Bahia, with commercial operation scheduled for the first half of 2020. This option was acquired in the context of the Company's signing of electric power purchase and sale agreements with Casa dos Ventos, supplied by this wind farm.

Flow	Notional (quantity)		Bought / Sold	Average strike (R\$/share)	Fair value		Financial settlement Inflows (Outflows) September 30, 2019	Value at Risk September 30, 2019	Fair value by year 2022
	September 30, 2019	December 31, 2018			September 30, 2019	December 31, 2018			
Call option	137,751,623	-	B	2.77	51	-	-	5	51

h) Embedded derivatives in contracts

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 until August 2020. 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		Financial settlement Inflows (Outflows) September 30, 2019	Value at Risk September 30, 2019	Fair value by year 2019+
	September 30, 2019	December 31, 2018			September 30, 2019	December 31, 2018			
Put option	1,105,070,863	1,105,070,863	S	3.88	(206)	(400)	-	32	(206)

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		Financial settlement Inflows (Outflows) September 30, 2019	Value at Risk September 30, 2019	Fair value by year 2019
	September 30, 2019	December 31, 2018			September 30, 2019	December 31, 2018			
Nickel forwards	1,220	3,763	S	15,709	(10)	6	-	2.7	(10)
Copper forwards	945	2,035	S	5,801	-	1	-	0.5	-
Total					(10)	7	-	3	(10)

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		Financial settlement Inflows (Outflows) September 30, 2019	Value at Risk September 30, 2019	Fair value by year	
	September 30, 2019	December 31, 2018			September 30, 2019	December 31, 2018			2019	2020+
Call options	746,667	746,667	S	233	(6)	(4)	-	5	-	(6)

i) 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 defined as the fair value of the derivative instruments as at September 30, 2019
- *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
CDI vs. US\$ fixed rate swap	R\$ depreciation	(252)	(860)	(1,469)
	US\$ interest rate inside Brazil decrease	(252)	(266)	(282)
	Brazilian interest rate increase	(252)	(252)	(253)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
TJLP vs. US\$ fixed rate swap	R\$ depreciation	(723)	(1,437)	(2,151)
	US\$ interest rate inside Brazil decrease	(723)	(762)	(803)
	Brazilian interest rate increase	(723)	(812)	(893)
	TJLP interest rate decrease	(723)	(812)	(903)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
TJLP vs. US\$ floating rate swap	R\$ depreciation	(229)	(330)	(431)
	US\$ interest rate inside Brazil decrease	(229)	(230)	(231)
	Brazilian interest rate increase	(229)	(230)	(230)
	TJLP interest rate decrease	(229)	(230)	(230)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
R\$ fixed rate vs. US\$ fixed rate swap	R\$ depreciation	(195)	(807)	(1,418)
	US\$ interest rate inside Brazil decrease	(195)	(217)	(238)
	Brazilian interest rate increase	(195)	(234)	(271)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
IPCA vs. US\$ fixed rate swap	R\$ depreciation	32	(819)	(1,669)
	US\$ interest rate inside Brazil decrease	32	(28)	(92)
	Brazilian interest rate increase	32	(122)	(261)
	IPCA index decrease	32	(66)	(160)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
IPCA vs. CDI swap	Brazilian interest rate increase	406	369	333
	IPCA index decrease	406	381	355
Protected item: R\$ denominated debt linked to IPCA	IPCA index decrease	n.a.	(381)	(355)
EUR fixed rate vs. US\$ fixed rate swap	EUR depreciation	(205)	(866)	(1,527)
	Euribor increase	(205)	(202)	(199)
	US\$ Libor decrease	(205)	(239)	(273)
Protected item: EUR denominated debt	EUR depreciation	n.a.	866	1,527

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Instrument	Instrument's main risk events	Probable	Scenario I	Scenario II
Bunker Oil protection				
Options	Bunker Oil price decrease	(2)	(48)	(361)
Protected item: Part of costs linked to bunker oil prices	Bunker Oil price decrease	n.a.	48	361
Maritime Freight protection				
Forwards	Freight price decrease	6	(4)	(13)
Protected item: Part of costs linked to maritime freight prices	Freight price decrease	n.a.	4	13
Nickel Revenue Hedging Program				
Options	Nickel price increase	(8)	(1,134)	(2,523)
Protected item: Part of nickel future revenues	Nickel price increase	n.a.	1,134	2,523
Purchase protection program				
Nickel forwards	Nickel price increase	(1)	(3)	(5)
Protected item: Part of costs linked to nickel prices	Nickel price increase	n.a.	3	5
Copper forwards	Copper price increase	-	(0.1)	(0.3)
Protected item: Part of costs linked to copper prices	Copper price increase	n.a.	0.1	0.3
Wheaton Precious Metals Corp. warrants	WPM stock price decrease	66	18	1
Conversion options - VLI	VLI stock value increase	(213)	(350)	(550)
Options - MBR	Iron ore price decrease	1,102	978	888
Option - SPCs Casa dos Ventos	SPCs Casa dos Ventos stock value decrease	51	16	2

Instrument	Main risks	Probable	Scenario I	Scenario II
Embedded derivatives - Raw material purchase (nickel)	Nickel price increase	(10)	(32)	(21)
Embedded derivatives - Raw material purchase (copper)	Copper price increase	-	(6)	(11)
Embedded derivatives - Gas purchase	Pellet price increase	(6)	(16)	(32)
Embedded derivatives - Guaranteed minimum return (VLI)	VLI stock value decrease	(206)	(784)	(1,808)

j) Financial counterparties' ratings

The transactions of derivative instruments, cash and cash equivalents as well as short-term 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 hire derivative instruments, cash and cash equivalents transactions

Long term ratings by counterparty	Moody's	S&P	Long term ratings by counterparty	Moody's	S&P
Agricultural Bank of China	A1	A	Credit Suisse	Baa2	BBB+
ANZ Australia and New Zealand Banking	Aa3	AA-	Deutsche Bank	A3	BBB+
Banco ABC	Ba3	BB-	Goldman Sachs	A3	BBB+
Banco Bradesco	Ba3	BB-	HSBC	A2	A
Banco do Brasil	Ba3	BB-	Industrial and Commercial Bank of China	A1	A
Banco do Nordeste	Ba3	BB-	Intesa Sanpaolo Spa	Baa1	BBB
Banco Safra	Ba3	BB-	Itaú Unibanco	Ba3	BB-
Banco Santander	A2	A	JP Morgan Chase & Co	A2	A-
Banco Votorantim	Ba3	BB-	Macquarie Group Ltd	A3	BBB
Bank of America	A2	A-	Mega Int. Commercial Bank	A1	A
Bank of China	A1	A	Millenium BIM	A1	A-
Bank of Mandiri	Baa2	BBB-	Mitsui & Co	A1	A-
Bank of Montreal	Aa2	A+	Mizuho Financial	A1	A-
Bank of Nova Scotia	A2	A+	Morgan Stanley	A3	BBB+
Bank of Shanghai	Baa2	-	Muscat Bank	Ba2	BB
Bank of Tokyo Mitsubishi UFJ	A1	A-	National Australia Bank	Aa3	AA-
Bank Rakyat	Baa2	BBB-	National Bank of Canada	Aa3	A
Banpará	-	BB-	National Bank of Oman	Ba2	-
Barclays	Baa3	BBB	Natixis	A1	A+
BBVA Banco Bilbao Vizcaya Argentaria	A3	A-	Rabobank	Aa3	A+
BNP Paribas	Aa3	A+	Royal Bank of Canada	Aa2	AA-
BTG Pactual	Ba3	BB-	Societe Generale	A1	A
Caixa Econômica Federal	Ba3	BB-	Standard Bank Group	Ba1	-
Calyon	A1	A+	Standard Chartered	A2	BBB+
Canadian Imperial Bank	Aa2	A+	Sumitomo Mitsui Financial	A1	A-
China Construction Bank	A1	A	Toronto Dominion Bank	Aa3	AA-
CIMB Bank	Baa1	A-	UBS	Aa3	A-
Citigroup	A3	BBB+	Unicredit	Baa1	BBB

k) 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	17,219	MAR20	16,981	SEP20	16,952
OCT19	17,155	APR20	16,969	SEP21	17,008
NOV19	17,091	MAY20	16,966	SEP22	17,080
DEC19	17,054	JUN20	16,961	SEP23	17,229
JAN20	17,029	JUL20	16,956		
FEB20	17,009	AUG20	16,953		

Copper					
Maturity	Price (US\$/lb.)	Maturity	Price (US\$/lb.)	Maturity	Price (US\$/lb.)
SPOT	2.58	MAR20	2.60	SEP20	2.61
OCT19	2.59	APR20	2.60	SEP21	2.63
NOV19	2.59	MAY20	2.60	SEP22	2.66
DEC19	2.60	JUN20	2.61	SEP23	2.68
JAN20	2.60	JUL20	2.61		
FEB20	2.60	AUG20	2.61		

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



Bunker Oil

Maturity	Price (US\$/ton)	Maturity	Price (US\$/ton)	Maturity	Price (US\$/ton)
SPOT	351	MAR20	224	SEP20	240
OCT19	317	APR20	226	SEP21	202
NOV19	256	MAY20	229	SEP22	153
DEC19	227	JUN20	232	SEP23	116
JAN20	221	JUL20	234		
FEB20	221	AUG20	237		

Brent Crude

Maturity	Price (US\$/bbl.)	Maturity	Price (US\$/bbl.)	Maturity	Price (US\$/bbl.)
SPOT	61	MAR20	57	SEP20	56
OCT19	59	APR20	57	SEP21	53
NOV19	58	MAY20	57	SEP22	50
DEC19	58	JUN20	57	SEP23	47
JAN20	58	JUL20	56		
FEB20	57	AUG20	56		

Maritime Freight (Capesize 5TC)

Maturity	Price (US\$/day)	Maturity	Price (US\$/day)	Maturity	Price (US\$/day)
SPOT	24,402	MAR20	13,943	SEP20	17,225
OCT19	23,308	APR20	13,867	Cal 2020	16,389
NOV19	24,350	MAY20	13,867	Cal 2021	13,654
DEC19	24,246	JUN20	13,867	Cal 2022	13,692
JAN20	18,467	JUL20	17,225		
FEB20	16,304	AUG20	17,225		

(ii) Foreign exchange and interest rates

US\$-Brazil Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/19	3.08	09/01/20	2.45	01/02/23	2.32
12/02/19	2.85	10/01/20	2.43	04/03/23	2.33
01/02/20	2.86	01/04/21	2.41	07/03/23	2.34
02/03/20	2.78	04/01/21	2.40	10/02/23	2.38
03/02/20	2.71	07/01/21	2.36	01/02/24	2.39
04/01/20	2.64	10/01/21	2.36	04/01/24	2.43
05/04/20	2.61	01/03/22	2.32	07/01/24	2.49
06/01/20	2.57	04/01/22	2.33	01/02/25	2.55
07/01/20	2.52	07/01/22	2.32	07/01/25	2.59
08/03/20	2.48	10/03/22	2.34	01/02/26	2.67

US\$ Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	2.02	6M	1.92	11M	1.84
2M	2.06	7M	1.89	12M	1.83
3M	2.08	8M	1.88	2Y	1.65
4M	2.00	9M	1.86	3Y	1.58
5M	1.95	10M	1.85	4Y	1.55

TJLP

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/19	5.95	09/01/20	5.95	01/02/23	5.95
12/02/19	5.95	10/01/20	5.95	04/03/23	5.95
01/02/20	5.95	01/04/21	5.95	07/03/23	5.95
02/03/20	5.95	04/01/21	5.95	10/02/23	5.95
03/02/20	5.95	07/01/21	5.95	01/02/24	5.95
04/01/20	5.95	10/01/21	5.95	04/01/24	5.95
05/04/20	5.95	01/03/22	5.95	07/01/24	5.95
06/01/20	5.95	04/01/22	5.95	01/02/25	5.95
07/01/20	5.95	07/01/22	5.95	07/01/25	5.95
08/03/20	5.95	10/03/22	5.95	01/02/26	5.95

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



BRL Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/19	5.39	09/01/20	4.83	01/02/23	6.05
12/02/19	5.18	10/01/20	4.85	04/03/23	6.14
01/02/20	5.06	01/04/21	4.95	07/03/23	6.25
02/03/20	4.95	04/01/21	5.09	10/02/23	6.36
03/02/20	4.90	07/01/21	5.25	01/02/24	6.43
04/01/20	4.86	10/01/21	5.42	04/01/24	6.49
05/04/20	4.85	01/03/22	5.55	07/01/24	6.55
06/01/20	4.84	04/01/22	5.69	01/02/25	6.67
07/01/20	4.82	07/01/22	5.80	07/01/25	6.76
08/03/20	4.82	10/03/22	5.95	01/02/26	6.84

Implicit Inflation (IPCA)

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
11/01/19	3.94	09/01/20	3.39	01/02/23	3.83
12/02/19	3.74	10/01/20	3.41	04/03/23	3.84
01/02/20	3.62	01/04/21	3.54	07/03/23	3.86
02/03/20	3.51	04/01/21	3.70	10/02/23	3.90
03/02/20	3.46	07/01/21	3.73	01/02/24	3.90
04/01/20	3.43	10/01/21	3.79	04/01/24	3.91
05/04/20	3.41	01/03/22	3.78	07/01/24	3.90
06/01/20	3.40	04/01/22	3.80	01/02/25	3.92
07/01/20	3.39	07/01/22	3.79	07/01/25	3.93
08/03/20	3.38	10/03/22	3.83	01/02/26	3.93

EUR Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	(0.50)	6M	(0.43)	11M	(0.43)
2M	(0.45)	7M	(0.43)	12M	(0.42)
3M	(0.44)	8M	(0.43)	2Y	(0.45)
4M	(0.44)	9M	(0.43)	3Y	(0.45)
5M	(0.43)	10M	(0.43)	4Y	(0.43)

CAD Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	1.95	6M	2.00	11M	1.07
2M	1.96	7M	1.71	12M	0.97
3M	1.97	8M	1.50	2Y	1.88
4M	1.99	9M	1.32	3Y	1.84
5M	2.01	10M	1.18	4Y	1.80

Currencies - Ending rates

CAD/US\$	0.7550	US\$/BRL	4.1644	EUR/US\$	1.0889
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