



Interim Financial Statements

March 31, 2020

BRGAAP in R\$ (English)

Vale S.A. Interim Financial Statements
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(A free translation of the original in Portuguese)

Vale S.A.

Report on review of quarterly information

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

Introduction

We have reviewed the accompanying consolidated and parent company interim accounting information of Vale S.A. ("Company"), included in the Quarterly Information Form (ITR) for the quarter ended March 31, 2020, comprising the statement of financial position at that date and the income statement and the statements of comprehensive income, changes in equity and cash flows for the three-month period 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.



(A free translation of the original in Portuguese)

Vale S.A.

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

We have also reviewed the consolidated and parent company value added statements for the three-month period ended March 31, 2020. These statements are the responsibility of the Company's management, and are required to be presented in accordance with standards issued by the CVM applicable to the preparation of Quarterly Information (ITR) and are considered supplementary information under IFRS, which do not require the presentation of the value added statement. These statements have been submitted to the same review procedures described above and, based on our review, nothing has come to our attention that causes us to believe that they have not been prepared, in all material respects, in a manner consistent with the consolidated and parent company interim accounting information taken as a whole.

Rio de Janeiro, April 28, 2020

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

	Notes	Consolidated		Parent company	
		Three-month period ended March 31,			
		2020	2019	2020	2019
Net operating revenue	4(c)	31,251	30,952	18,793	16,785
Cost of goods sold and services rendered	5(a)	(19,215)	(17,750)	(8,617)	(9,201)
Gross profit		12,036	13,202	10,176	7,584
Operating revenues (expenses)					
Selling and administrative expenses	5(b)	(516)	(418)	(260)	(201)
Research and evaluation expenses		(429)	(269)	(178)	(159)
Pre-operating and operational stoppage		(1,192)	(815)	(1,160)	(776)
Equity results from subsidiaries		-	-	(1,687)	4,075
Brumadinho event	3	(708)	(17,315)	(708)	(17,315)
Other operating expenses, net	5(c)	(267)	(318)	(586)	(313)
		(3,112)	(19,135)	(4,579)	(14,689)
Impairment and disposals of non-current assets	3	(136)	(781)	42	(631)
Operating income (loss)		8,788	(6,714)	5,639	(7,736)
Financial income	6	492	364	173	110
Financial expenses	6	(2,290)	(2,961)	(2,327)	(3,148)
Other financial items, net	6	(8,688)	7	(5,832)	155
Equity results and other results in associates and joint ventures	12 and 16	(767)	314	(767)	314
Loss before income taxes		(2,465)	(8,990)	(3,114)	(10,305)
Income taxes					
	7				
Current tax		(1,593)	(961)	(1,065)	(492)
Deferred tax		4,695	3,405	5,163	4,375
		3,102	2,444	4,098	3,883
Net income (loss)		637	(6,546)	984	(6,422)
Loss attributable to noncontrolling interests		(347)	(124)	-	-
Net income (loss) attributable to Vale's stockholders		984	(6,422)	984	(6,422)
Earnings (loss) per share attributable to Vale's stockholders:					
Basic and diluted earnings (loss) per share:					
Common share (R\$)	8	0.19	(1.24)	0.19	(1.24)

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

Statement of Comprehensive Income

In millions of Brazilian reais

	Consolidated		Parent company	
	Three-month period ended March 31,			
	2020	2019	2020	2019
Net income (loss)	637	(6,546)	984	(6,422)
Other comprehensive income (loss):				
Items that will not be subsequently reclassified to income statement				
Retirement benefit obligations	47	35	(9)	(14)
Fair value adjustment to investment in equity securities	(1,209)	(147)	(1,002)	(114)
Equity results	-	-	(151)	16
Total items that will not be subsequently reclassified to income statement, net of tax	(1,162)	(112)	(1,162)	(112)
Items that may be subsequently reclassified to income statement				
Translation adjustments	18,305	1,179	19,601	1,183
Net investments hedge (note 19c)	(2,394)	(44)	(2,394)	(44)
Cash flow hedge	277	-	277	-
Total of items that may be subsequently reclassified to income statement, net of tax	16,188	1,135	17,484	1,139
Total comprehensive income (loss)	15,663	(5,523)	17,306	(5,395)
Comprehensive income (loss) attributable to noncontrolling interests	(1,643)	(128)		
Comprehensive income (loss) attributable to Vale's stockholders	17,306	(5,395)		

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		Parent company	
	Three-month period ended March 31,			
	2020	2019	2020	2019
Cash flow from operations (a)	9,006	11,466	6,405	12,462
Interest on loans and borrowings paid (note 15)	(1,077)	(927)	(1,589)	(1,283)
Derivatives received (paid), net	1,332	(440)	(178)	(321)
Income taxes (including settlement program)	(1,527)	(1,838)	(1,352)	(1,010)
Net cash provided by operating activities	7,734	8,261	3,286	9,848
Cash flow from investing activities:				
Capital expenditures	(4,999)	(2,305)	(2,678)	(1,300)
Additions to investments	(364)	(1)	(628)	(208)
Acquisition of subsidiary, net of cash (note 12)	-	(1,884)	-	(1,884)
Proceeds from disposal of assets and investments	3	347	119	13
Dividends and interest on capital received	-	-	6	342
Judicial deposits and restricted cash related to Brumadinho event (note 3)	-	(13,042)	-	(13,042)
Short-term investment (LFTs)	884	50	870	(2)
Other investments activities, net	(247)	48	1,407	(498)
Net cash used in investing activities	(4,723)	(16,787)	(904)	(16,579)
Cash flow from financing activities:				
Loans and borrowings from third-parties (note 15)	24,419	6,933	-	2,894
Payments of loans and borrowings from third-parties (note 15)	(1,678)	(789)	(1,226)	(660)
Payments of leasing	(218)	(288)	(26)	(19)
Dividends and interest on capital paid to noncontrolling interest	(12)	(237)	-	-
Net cash provided by (used in) financing activities	22,511	5,619	(1,252)	2,215
Increase (decrease) in cash and cash equivalents	25,522	(2,907)	1,130	(4,516)
Cash and cash equivalents in the beginning of the period	29,627	22,413	9,597	4,835
Effect of exchange rate changes on cash and cash equivalents	6,135	7	-	-
Cash and cash equivalents at end of the period	61,284	19,513	10,727	319
Non-cash transactions:				
Additions to property, plant and equipment - capitalized loans and borrowing costs	138	141	138	140
Cash flow from operating activities:				
Loss before income taxes	(2,465)	(8,990)	(3,114)	(10,305)
Adjusted for:				
Provisions related to Brumadinho event (note 3)	-	16,454	-	16,454
Equity results from subsidiaries	-	-	1,687	(4,075)
Equity results and other results in associates and joint ventures	767	(314)	767	(314)
Impairment and disposal of non-current assets	136	781	(42)	631
Depreciation, amortization and depletion	3,676	3,029	1,932	1,744
Financial results, net	10,486	2,590	7,986	2,883
Changes in assets and liabilities:				
Accounts receivable	2,553	2,121	430	6,497
Inventories	(865)	(1,706)	(591)	(456)
Suppliers and contractors (i)	(2,846)	(362)	(2,820)	314
Provision - Payroll, related charges and other remunerations	(885)	(1,758)	(496)	(1,157)
Payments related to Brumadinho event (note 3) (ii)	(970)	-	(970)	-
Other assets and liabilities, net	(581)	(379)	1,636	246
Cash flow from operations (a)	9,006	11,466	6,405	12,462

(i) Includes variable lease payments.

(ii) Additionally, for the three-month periods ended March 31, 2020 and 2019, the Company incurred in expenses in the amount of R\$708 and R\$392, respectively, which did not qualify for provision and, as such were recognized in the income statement.

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

Statement of Financial Position

In millions of Brazilian reais

	Notes	Consolidated		Parent company	
		March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Assets					
Current assets					
Cash and cash equivalents		61,284	29,627	10,727	9,597
Short-term investments	15	2,488	3,329	2,435	3,309
Accounts receivable	9	10,896	10,195	19,402	16,599
Other financial assets	11	2,650	3,062	619	1,140
Inventories	10	21,263	17,228	5,901	5,310
Prepaid income taxes		916	1,492	516	648
Recoverable taxes		2,053	2,227	936	929
Others		2,132	1,538	1,879	1,569
		103,682	68,698	42,415	39,101
Non-current assets					
Judicial deposits	21(c)	12,664	12,629	12,287	12,242
Other financial assets	11	11,684	11,074	2,756	3,972
Prepaid income taxes		2,894	2,407	-	-
Recoverable taxes		2,795	2,446	1,673	1,471
Deferred income taxes	7(a)	52,301	37,151	41,285	28,770
Others		2,893	1,998	1,092	937
		85,231	67,705	59,093	47,392
Investments	12	11,299	11,278	172,436	144,594
Intangibles	13	35,852	34,257	16,151	16,271
Property, plant and equipment	14	203,641	187,733	105,791	105,875
		336,023	300,973	353,471	314,132
Total assets		439,705	369,671	395,886	353,233
Liabilities					
Current liabilities					
Suppliers and contractors		15,642	16,556	8,083	10,765
Loans and borrowings	15	4,887	4,895	3,795	3,986
Leases		1,173	910	396	337
Other financial liabilities	11	8,139	4,328	7,721	6,672
Taxes payable		2,004	2,065	1,327	1,062
Settlement program ("REFIS")	7(d)	1,748	1,737	1,713	1,702
Liabilities related to associates and joint ventures	16	2,356	2,079	2,356	2,079
Provisions	20	4,092	4,956	2,485	3,210
Liabilities related to Brumadinho	3	5,145	6,319	5,145	6,319
De-characterization of dams	3	1,426	1,247	1,426	1,247
Interest on capital		6,333	6,333	6,333	6,333
Others		7,241	4,381	4,520	3,187
		60,186	55,806	45,300	46,899
Non-current liabilities					
Loans and borrowings	15	83,882	47,730	21,119	18,713
Leases		7,631	6,308	1,891	1,833
Other financial liabilities	11	22,682	17,622	101,436	76,365
Settlement program ("REFIS")	7(d)	13,664	14,012	13,392	13,733
Deferred income taxes	7(a)	9,050	7,585	-	-
Provisions	20	38,876	34,233	11,103	11,368
Liabilities related to Brumadinho	3	6,100	5,703	6,100	5,703
De-characterization of dams	3	7,995	8,787	7,995	8,787
Liabilities related to associates and joint ventures	16	4,270	4,774	4,270	4,774
Streaming transactions		10,638	8,313	-	-
Others		1,835	1,649	4,426	3,578
		206,623	156,716	171,732	144,854
Total liabilities		266,809	212,522	217,032	191,753
Stockholders' equity					
	23				
Equity attributable to Vale's stockholders		178,854	161,480	178,854	161,480
Equity attributable to noncontrolling interests		(5,958)	(4,331)	-	-
Total stockholders' equity		172,896	157,149	178,854	161,480
Total liabilities and stockholders' equity		439,705	369,671	395,886	353,233

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

Statement of Changes in Equity

In millions of Brazilian reais

	Share capital	Capital reserve	Profit reserves	Treasury stocks	Other reserves	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale's stockholders	Equity attributable to noncontrolling interests	Total stockholders' equity
Balance at December 31, 2019	77,300	3,634	28,577	(6,520)	(5,673)	64,162	-	161,480	(4,331)	157,149
Net income (loss)	-	-	-	-	-	-	984	984	(347)	637
Other comprehensive income	-	-	-	-	(1,162)	17,484	-	16,322	(1,296)	15,026
Dividends of noncontrolling interest	-	-	-	-	-	-	-	-	(9)	(9)
Capitalization of noncontrolling interest advances	-	-	-	-	-	-	-	-	25	25
Assignment and transfer of shares (note 23)	-	-	-	68	-	-	-	68	-	68
Balance at March 31, 2020	77,300	3,634	28,577	(6,452)	(6,835)	81,646	984	178,854	(5,958)	172,896
	Share capital	Capital reserve	Profit reserves	Treasury stocks	Other reserves	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale's stockholders	Equity attributable to noncontrolling interests	Total stockholders' equity
Balance at December 31, 2018	77,300	3,634	42,502	(6,604)	(5,912)	59,483	-	170,403	3,280	173,683
Loss	-	-	-	-	-	-	(6,422)	(6,422)	(124)	(6,546)
Other comprehensive income	-	-	-	-	(112)	1,139	-	1,027	(4)	1,023
Dividends of noncontrolling interest	-	-	-	-	-	-	-	-	(6)	(6)
Capitalization of noncontrolling interest advances	-	-	-	-	-	-	-	-	22	22
Assignment and transfer of shares (note 23)	-	-	-	84	-	-	-	84	-	84
Balance at March 31, 2019	77,300	3,634	42,502	(6,520)	(6,024)	60,622	(6,422)	165,092	3,168	168,260

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

Value Added Statement

In millions of Brazilian Reals

	Consolidated		Parent company	
	Three-month period ended March 31,			
	2020	2019	2020	2019
Generation of value added				
Gross revenue				
Revenue from products and services	31,648	31,285	19,146	17,066
Revenue from the construction of own assets	1,196	2,680	589	1,497
Other revenues	343	616	130	195
Less:				
Cost of products, goods and services sold	(5,174)	(5,330)	(2,503)	(2,534)
Material, energy, third-party services and other	(7,925)	(8,239)	(2,967)	(3,189)
Impairment of non-current assets and others results	(136)	(781)	42	(631)
Brumadinho event	(708)	(17,315)	(708)	(17,315)
Other costs and expenses	(2,910)	(2,443)	(1,609)	(1,618)
Gross value added	16,334	473	12,120	(6,529)
Depreciation, amortization and depletion	(3,676)	(3,029)	(1,932)	(1,744)
Net value added	12,658	(2,556)	10,188	(8,273)
Received from third parties				
Equity results from entities	(767)	314	(2,454)	4,389
Financial income	4,769	548	5,083	302
Total value added to be distributed	16,660	(1,694)	12,817	(3,582)
Direct compensation	1,928	1,915	959	952
Benefits	37	16	23	13
F.G.T.S.	7	5	6	5
Federal taxes	(1,395)	(1,056)	(2,559)	(3,305)
State taxes	83	145	19	745
Municipal taxes	3	9	1	3
Interest (net derivatives and monetary and exchange rate variation)	15,165	3,050	13,014	3,131
Other remunerations of third party funds	195	768	370	1,296
Reinvested net income (absorbed loss)	984	(6,422)	984	(6,422)
Loss attributable to noncontrolling interest	(347)	(124)	-	-
Distributed value added	16,660	(1,694)	12,817	(3,582)

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) 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 25.

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, 2019. 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.

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		Average rate	
	March 31, 2020	December 31, 2019	Three-month period ended March 31, 2020	March 31, 2019
US Dollar (“US\$”)	5.1987	4.0307	4.4656	3.7684
Canadian dollar (“CAD”)	3.6808	3.1034	3.3148	2.8346
Euro (“EUR” or “€”)	5.7264	4.5305	4.9224	4.2802

These interim financial statements were authorized for issue on April 28, 2020.

c) Coronavirus outbreak

The coronavirus outbreak (“COVID-19”) was first reported on December 30, 2019 and has since spread through various countries, with reports of multiple fatalities from the virus, including locations where the Company has its main operations.

On March 11, 2020, the World Health Organization declared COVID-19 outbreak pandemic. During the month of March 2020, governmental authorities in various jurisdictions imposed lockdowns or other restrictions to contain the virus, and various businesses suspended or reduced operations. The final impact on the global economy and financial markets is still uncertain, but is expected to be significant.

As the outbreak develops over the regions where Vale’s operations are concentrated, the Company may face workforce related operational difficulties and may need to adopt contingency measures or eventually suspend operations. A significant portion of the Company’s revenue is originated from sales made to customers in Asia and Europe, and Vale as well rely on an extensive logistics and supply chain, including several ports, distribution centers and suppliers that have operations in affected regions. The Company is closely evaluating the impact of the COVID-19 on its business. Below is a summary of the key impacts on the Company’s business as at March 31, 2020:

Impairment and onerous contracts – The Company assessed whether there have been any trigger events that would require an impairment assessment of its non-financial assets and concluded there have been no changes in the circumstances that would indicate an impairment loss. As the pandemic is still progressing, the financial impact arising from the COVID-19 on the Company’s cash generating units (“CGU”), if any, cannot be reliably estimated at this time. Therefore, the major long-term assumptions applied on the preparation of the cash flow models, such as commodities prices and production levels, remain unchanged for the impairment trigger assessment.

Mozambique, Coal – In 2019, the Company fully impaired the assets related to this CGU because the expected yield of metallurgical coal and thermal coal will not be achieved, mostly due to technical issues on the project and operation of the assets related to this CGU. As a result, the Company has decided to implement a new mining plan and a new plant strategy to achieve the ramp-up of this asset, which includes shortening the life of mine and completing a plant overhaul. However, due to travel and equipment transportation restrictions resulting from the COVID-19 outbreak, the Company is revisiting plans for the Mozambique coal processing plant stoppage.

The halting of the processing plants’ operations was previously expected to start in the second quarter of 2020 and a new date is under evaluation. Other than this, the plan for this CGU has not changed and, therefore, no further impact was recognized in the period ended March 31, 2020.

New Caledonia, Nickel – The New Caledonian operation experienced issues throughout 2019, mainly in relation to production and processing of the refined nickel, associated with the challenges of the unique remoteness of the area. Thus, the Company has started studying alternatives for the operations in New Caledonia, while also considering operational and commercial alternatives to improve the short-term cash flows of Vale New Caledonia. Based on the revision of the business plan taken in 2019, the Company has reduced the expected production levels of refined nickel product for remaining useful life of the mine, leading to an impairment charge of R\$10,319 recorded as at December 31, 2019. After the impairment charge, the CGU’s carrying value was R\$1,628 at the year ended December 31, 2019.

Following the recent developments on the COVID-19 outbreak, the disruption in the global markets could increase the challenges that have been already faced by the Company to operate this asset in New Caledonia. Management is currently reviewing the business model in place and studying all options available, including exit alternatives or changes on the production profile. As at March 31, 2020, the Company believes the impairment model prepared for the year ended December 31, 2019 is still the most reasonable scenario as the impacts on the long-term assumptions due to the pandemic are still very uncertain and, accordingly, no additional impairment loss was identified. However, the conclusion of the review and studies referred above may significantly change the approach applied to build the discounted cash flows and as a more detailed analysis of the Company’s business plan and alternatives progresses, an additional impairment loss may be required in future reporting periods.

Voisey’s Bay, Nickel - On March 16, 2020, the Company ramped down the Voisey’s Bay mining operation and placed it on care and maintenance, as a precaution to avoid exposure to travel helping to protect the health and well-being of Nunatsiavut and Innu indigenous communities in Labrador in face of the COVID-19 pandemic. The Company did not change its plan for this asset and expects to resume the operation in 2020 and, therefore, impairment losses were not identified in relation to this asset.

Teluk Rubiah Maritime Terminal ("TRMT"), Iron Ore - On March 24, 2020, the Company temporarily halted its operations in the TRMT in Malaysia, as the Company is temporarily unable to secure the minimum resources to safely operate the terminal. During suspension of the operations, vessels heading to TRMT will be redirected and redistributed to blending facilities in China with no expected impact on production and sales volume in 2020. The Company did not change its plan for this asset and expects to resume the operation in 2020 and, therefore, impairment losses were not identified in relation to this asset.

Other assets - The Company did not identify any changes in the circumstances that would indicate an impairment trigger of other assets. At this time, the outbreak has not caused a significant impact to the Company's operations, but if it continues for an extended period of time, the Company's financial conditions or results of operations in 2020 may be adversely impacted.

Liquidity - In March 2020, the Company took precautionary measures in order to increase its cash position and preserve financial flexibility in light of current uncertainty in the global markets resulting from the COVID-19 outbreak. The Company drew down R\$25,994 (US\$5 billion) under its revolving credit lines maturing June 2022 R\$10,397 (US\$2 billion) and December 2024 R\$15,597 (US\$3 billion) and has discontinued the nickel hedge accounting program by selling the contract options for a total consideration of R\$1,123 (US\$230 million), of which R\$1,074 (US\$220 million) was settled during the period ended March 31, 2020.

On April 1, 2020 (subsequent event), R\$500 of the Company's bank accounts, which were restricted due to the Brumadinho event (note 3), were released for humanitarian and social actions against COVID-19 outbreak.

Deferred taxes - On March 31, 2020, the Indonesian Government issued Government Regulation ("PERPPU-1") to manage the economic impact of the COVID-19 global pandemic, which impacts the Indonesian tax policies. The current income tax rate of 25% will be decreased to 22% for fiscal years 2020 and 2021 and further decreased to 20% starting from fiscal year 2022. Therefore, the Company has remeasured its deferred taxes arising from PT Vale Indonesia Tbk ("PTVI") considering the substantive enactment of the new tax rate. As a result, the Company recognized an income tax gain of R\$357 (US\$80 million) as at March 31, 2020.

Fair value of other assets and liabilities - At this time, the outbreak has not caused any significant impact on the fair value of the Company's assets and liabilities. However, abnormally large changes have occurred in the valuation of financial assets across many markets since the outbreak. The outbreak continues to be uncertain, making it impossible to forecast the final impact it could have on the economy, and in turn, on the Company's business, liquidity, and financial position meaning that the fair values of the Company's assets and liabilities may change in later periods.

Supply chain - The Company's supply chain might be significantly impacted by the COVID-19, which would result in suspension of operations, operation difficulties, and increases in costs and expenses. In addition, the Company has suspended all non-essential construction works, which could delay the achievement of the expansion plans, revision of operations or resumption of production capacity. There will be no impact on constructions related to dam safety.

Other impacts - In 2019, the Company entered into agreements to sell its 25% interest in Henan Longyu and to divest 20% of its interest in PTVI (note 12). The closing of both transactions was expected in the first quarter of 2020. However, due to the recent developments of the COVID-19 outbreak, the closing of these transactions has been pushed back to later dates in 2020.

3. Brumadinho dam failure

On January 25, 2019, a tailings dam (“Dam I”) failed at the Córrego do Feijão mine, in the city of Brumadinho, state of Minas Gerais. The failure released a flow of tailings debris, destroying some of Vale’s facilities, affecting local communities and disturbing the environment. The tailings released have caused an impact of around 315 km in extension, reaching the nearby Paraopeba River. The dam failure in Brumadinho (“event”) resulted in 270 fatalities or presumed fatalities.

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 event. For the three-month period ended March 31, 2020 and 2019, the Company recognized in the income statement R\$708 and R\$17,315, respectively, to meet its assumed obligations, including de-characterization of the dams, indemnification and donations to those affected by the event, remediation of the affected areas and compensation to the society.

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. Vale has developed engineering projects for de-characterization these structures and recognized a provision of the total expected costs to carry out all projects, including upstream structures, certain “centerline structures” and dikes.

The changes in the provision for the period ended March 31, 2020 and 2019 are as follows:

	Consolidated	
	2020	2019
Balance at January 1,	10,034	-
Provision recognized	-	7,137
Payments	(291)	-
Present value valuation	(322)	-
Balance at March 31,	9,421	7,137

	March 31, 2020	December 31, 2019
Current liabilities	1,426	1,247
Non-current liabilities	7,995	8,787
Liabilities	9,421	10,034

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 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.

The changes in the provision for the period ended March 31, 2020 and 2019 are as follows:

	Consolidated	
	2020	2019
Balance at January 1,	12,022	-
Provision for social and economic compensation	-	9,317
Payments	(679)	-
Present value valuation	(98)	-
Balance at March 31,	11,245	9,317

	March 31, 2020	December 31, 2019
Current liabilities	5,145	6,319
Non-current liabilities	6,100	5,703
Liabilities	11,245	12,022

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.

On April 22, 2020 (subsequent event), was ratified an agreement between Vale and the union to indemnify survivors and workers that were at the Feijão and Jangada mines on the date of the event. The agreement establishes the payment terms for material and moral damages, as well as psychological and psychiatric assistance to survivors until January 2022. The provision for social compensation already considers the estimated amount to comply with this obligation and, therefore, this agreement is part of the provision as at March 31, 2020.

In addition, the Company is under negotiations with the Government of the State of Minas Gerais (“GEMG”) and other relevant authorities for an additional agreement for collective damages indemnification and further compensation for the society and environment. The goal of Vale with a potential agreement would be to provide a stable legal framework for the execution of reparation and compensation, with the suspension of the existing civil lawsuits.

The potential agreement is still very uncertain as it is subject to conclusion of the ongoing negotiations and approval by the Company, the Government of the State of Minas Gerais, Public Prosecutors and other Authorities and Intervent parties.

Therefore, the provisions recorded in these interim financial statements do not include the potential outcome of the current negotiation as it is not yet possible to reliably estimate an amount or whether the current negotiations will be successful.

The estimate of the economic impact of a potential agreement will depend on (i) final agreement on the list of reparation and compensation projects, (ii) a detailed assessment of the estimates of the amounts to be spent on the reparation and compensation projects being discussed, (iii) an analysis of the detailed scope of such projects to determine their overlap with the initiatives and amounts already provisioned; and (iv) the timing of the execution of projects and disbursements, which will impact the present value of the obligations.

Based on the current terms under discussion, and preliminary estimates subject to the uncertainties listed above, such possible agreement might result in an additional provision ranging from R\$4 billion to R\$8 billion. All accounting impacts, if any, will be recorded in the period an agreement is reached.

c) Incurred expenses

The Company has incurred expenses, which do not qualify for provision and have been recognized in the income statement, in the amount of R\$708 and R\$392 for the three-month period ended March 31, 2020 and 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 suspended some operations due to judicial decisions or technical analysis performed by Vale on its upstream dam structures. The Company recorded a loss in the income statement of R\$722 and R\$605 for the three-month period ended March 31, 2020 and 2019, respectively, related to the operational stoppage and idle capacity of the ferrous mineral segment. The Company is working on legal and technical measures to resume all operations at full capacity.

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\$585 as “Impairment and disposal of non-current assets” for the three-month period ended March 31, 2019 in relation to the assets write-off of the Córrego do Feijão mine and those related to the other upstream dams in Brazil. In 2020, the Company did not write-off any asset related to the Brumadinho event.

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 investigation. 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\$6,572 of the Company's assets are restricted as at March 31, 2020, of which approximately R\$508 of the Company's bank accounts are restricted and R\$6,064 were converted into judicial deposits.

On April 1, 2020 (subsequent event), the judge of the 2nd Public Finance Court of Belo Horizonte released R\$500 from the Company's restricted bank accounts to be used on actions against COVID-19 outbreak.

For the Brumadinho event, the Company has additional guarantees in the amount of R\$5,677 as at March 31, 2020. The expenses related to these additional guarantees in the amount of R\$10 was recorded as financial expense in the Company's income statement for the three-month period ended March 31, 2020.

(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\$108. Both amounts are also recorded as at March 31, 2020.

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

Vale and certain of its officers and former officers have been named defendants in civil putative class action suits, under U.S. federal securities laws, brought before federal courts in New York by holders of our securities. These complaints were consolidated through an amended complaint brought by the Lead Plaintiff on October 25, 2019 before the United States District Court for the Eastern District of New York.

The Lead Plaintiff alleges that we made false and misleading statements or omitted to make disclosures concerning the risks of the operations of Dam I in the Córrego do Feijão mine and the adequacy of the related programs and procedures. The Lead Plaintiff has not specified an amount of alleged damages in these actions. On December 13, 2019, the Company made a motion to dismiss the amended complaint. In January 2020, the lead plaintiff filed an opposition to this motion to dismiss. On February 21, 2020, Vale filed a reply to the opposition. In March 2020, the lead plaintiff has requested to start the partial discovery, for which the Company filed an opposition on March 20, 2020. The judge has not issued a decision to date.

Vale intends to defend against this action and mount a full defense against these claims. Based on the assessment of the Company's legal consultants and given its preliminary status, the expectation of loss of this proceeding is classified as possible. However, given the preliminary status of the action, it is not possible at this time to determine a reliable estimate of the potential exposure.

g) Insurance

The Company is negotiating with insurers under its operational risk and civil liability, 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 provision requires the use of significant judgements, estimates and assumptions. The provision reflects the estimated costs to comply with Vale's obligation in relation to the event.

The main critical assumptions and estimates applied in measuring the provision for de-characterization of the dams 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; (iii) acceptance by the authorities of the proposed engineering methods and solution; and (iv) updates in the discount rate.

The provision for Framework Agreements and donations may be affected by factors including, but not limited to: (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 is responsible to 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)

The definition of Adjusted LAJIDA (EBITDA) for the Company is the 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 March 31, 2020						
	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	19,375	(7,548)	(87)	(108)	(749)	-	10,883
Iron ore pellets	3,824	(1,848)	48	(4)	(112)	-	1,908
Ferroalloys and manganese	211	(223)	-	-	(5)	-	(17)
Other ferrous products and services	383	(317)	5	(3)	-	-	68
	23,793	(9,936)	(34)	(115)	(866)	-	12,842
Base metals							
Nickel and other products	4,653	(2,981)	(86)	(61)	-	-	1,525
Copper	1,709	(924)	4	(77)	-	-	712
	6,362	(3,905)	(82)	(138)	-	-	2,237
Coal	673	(1,684)	6	(40)	-	324	(721)
Brumadinho event	-	-	(708)	-	-	-	(708)
Others	423	(405)	(591)	(136)	(17)	-	(726)
Total	31,251	(15,930)	(1,409)	(429)	(883)	324	12,924

	Consolidated						
	Three-month period ended March 31, 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	16,888	(6,204)	(49)	(71)	(601)	-	9,963
Iron ore pellets	6,320	(2,845)	(14)	(17)	(37)	-	3,407
Ferroalloys and manganese	324	(218)	(3)	(1)	-	-	102
Other ferrous products and services	401	(287)	(3)	-	-	-	111
	23,933	(9,554)	(69)	(89)	(638)	-	13,583
Base metals							
Nickel and other products	3,701	(2,599)	(46)	(26)	(30)	-	1,000
Copper	1,776	(853)	(1)	(20)	-	-	902
	5,477	(3,452)	(47)	(46)	(30)	-	1,902
Coal	1,258	(1,601)	(4)	(22)	-	106	(263)
Brumadinho event	-	-	(17,315)	-	-	-	(17,315)
Others	284	(318)	(559)	(112)	-	-	(705)
Total	30,952	(14,925)	(17,994)	(269)	(668)	106	(2,798)

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

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Net income (loss) attributable to Vale's stockholders	984	(6,422)
Loss attributable to noncontrolling interests	(347)	(124)
Net income (loss)	637	(6,546)
Depreciation, depletion and amortization	3,676	3,029
Income taxes	(3,102)	(2,444)
Financial results	10,486	2,590
LAJIDA (EBITDA)	11,697	(3,371)
Items to reconciled adjusted LAJIDA (EBITDA)		
Equity results and other results in associates and joint ventures	767	(314)
Dividends received and interest from associates and joint ventures (i)	324	106
Impairment and disposal of non-current assets	136	781
Adjusted LAJIDA (EBITDA)	12,924	(2,798)

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

b) Assets by segment

	March 31, 2020			Consolidated December 31, 2019		
	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	10,047	6,860	138,483	7,880	6,970	135,143
Base metals	6,903	51	94,558	5,457	56	80,181
Coal	270	-	-	243	-	-
Others	68	4,388	6,452	7	4,252	6,666
Total	17,288	11,299	239,493	13,587	11,278	221,990

	2020			Consolidated Three-month period ended March 31, 2019		
	Capital expenditures (ii) Sustaining capital	Project execution	Depreciation, depletion and amortization	Capital expenditures (ii) Sustaining capital	Project execution	Depreciation, depletion and amortization
Ferrous minerals	2,381	406	1,892	1,052	324	1,616
Base metals	1,615	235	1,633	688	41	1,158
Coal	345	-	83	190	-	185
Others	6	11	68	2	8	70
Total	4,347	652	3,676	1,932	373	3,029

(i) Goodwill is allocated mainly to ferrous minerals and base metals segments in the amount of R\$7,133 and R\$9,111 in March 31, 2020 and R\$7,133 and R\$7,495 in December 31, 2019, respectively.

(ii) Cash outflows.

c) Net operating revenue by geographic area

	Consolidated Three-month period ended March 31, 2020				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	458	878	-	-	1,336
United States of America	201	1,092	-	-	1,293
Germany	826	865	-	-	1,691
Europe, except Germany	1,276	1,689	219	-	3,184
Middle East, Africa and Oceania	1,075	36	126	-	1,237
Japan	1,692	424	55	-	2,171
China	13,789	505	75	-	14,369
Asia, except Japan and China	1,850	707	198	-	2,755
Brazil	2,626	166	-	423	3,215
Net operating revenue	23,793	6,362	673	423	31,251

	Consolidated Three-month period ended March 31, 2019				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	608	834	-	-	1,442
United States of America	370	787	-	-	1,157
Germany	987	439	-	-	1,426
Europe, except Germany	1,554	1,497	400	-	3,451
Middle East, Africa and Oceania	2,373	22	102	-	2,497
Japan	1,802	333	246	-	2,381
China	12,243	539	-	-	12,782
Asia, except Japan and China	1,636	845	451	-	2,932
Brazil	2,360	181	59	284	2,884
Net operating revenue	23,933	5,477	1,258	284	30,952

Provisionally priced commodities sales – The commodity price risk arises from volatility of iron ore, nickel, copper and coal prices. The Company is mostly exposed to the fluctuations in the iron ore and copper price. The selling price of these products can be measured reliably at each period, since the price is quoted in an active market. The final price of these sales will be determined during the second quarter of 2020.

The sensitivity of the Company's risk on final settlement of its provisionally priced accounts receivables are presented below:

	March 31, 2020			
	Thousand metric tons	Provisional price (US\$/tonne)	Change	Effect on Revenue (R\$ million)
Iron ore	9,595	82.6	+/-10%	354
Iron ore pellets	499	79.5	+/-10%	18
Copper	84	6,577.0	+/-10%	246

5. Costs and expenses by nature

a) Cost of goods sold and services rendered

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Personnel	1,855	1,739
Materials and services	3,631	3,601
Fuel oil and gas	1,257	1,314
Maintenance	3,003	2,372
Energy	843	797
Acquisition of products	266	402
Depreciation and depletion	3,285	2,825
Freight	3,117	2,874
Others	1,958	1,826
Total	19,215	17,750
Cost of goods sold	18,499	17,142
Cost of services rendered	716	608
Total	19,215	17,750

b) Selling and administrative expenses

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Selling	71	79
Personnel	211	174
Services	79	53
Depreciation and amortization	82	56
Others	73	56
Total	516	418

c) Other operating expenses (income), net

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Provision for litigations	89	299
Profit sharing program	150	132
Others	28	(113)
Total	267	318

6. Financial result

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Financial income		
Short-term investments	231	173
Others	261	191
	492	364
Financial expenses		
Loans and borrowings gross interest	(954)	(947)
Capitalized loans and borrowing costs	138	141
Participative stockholders' debentures	(103)	(1,337)
Interest on REFIS	(109)	(160)
Interest on lease liabilities	(78)	(71)
Financial guarantees (note 12)	(703)	38
Others	(481)	(625)
	(2,290)	(2,961)
Other financial items, net		
Net foreign exchange gains (losses) - Loans and borrowings	(4,785)	(49)
Derivative financial instruments (note 19)	(6,394)	340
Other foreign exchange gains (losses), net	2,509	26
Indexation losses, net	(18)	(310)
	(8,688)	7
Total	(10,486)	(2,590)

7. Income taxes

a) Deferred income tax assets and liabilities

Changes in deferred tax are as follows:

	Consolidated		
	Assets	Liabilities	Deferred taxes, net
Balance at December 31, 2019	37,151	7,585	29,566
Effect in income statement	4,468	(227)	4,695
Transfers between asset and liabilities	186	186	-
Translation adjustment	2,132	1,462	670
Other comprehensive income	8,364	44	8,320
Balance at March 31, 2020	52,301	9,050	43,251

	Consolidated		
	Assets	Liabilities	Deferred taxes, net
Balance at December 31, 2018	26,767	5,936	20,831
Effect in income statement	3,283	(122)	3,405
Translation adjustment	30	108	(78)
Other comprehensive income	(31)	16	(47)
Balance at March 31, 2019	30,049	5,938	24,111

b) Income tax reconciliation – Income statement

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

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Loss before income taxes	(2,465)	(8,990)
Income taxes at statutory rate - 34%	838	3,057
Adjustments that affect the basis of taxes:		
Tax incentives	1,379	121
Equity results	(177)	135
Addition (reversal) of tax loss carryforward (i)	1,015	(863)
Others	47	(6)
Income taxes	3,102	2,444

(i) In the three-month period ended March 31, 2020, the positive change refers to the impact of the exchange variation on the foreign tax loss carryforward.

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 March 31, 2020, the balance of R\$15,412 (R\$1,748 classified as current liabilities and R\$13,664 classified as non-current liabilities) is due in 103 remaining monthly installments, bearing the SELIC interest rate (Special System for Settlement and Custody), which is the Brazilian federal funds rate. As at March 31, 2020, the SELIC rate was 3.75% per annum.

8. Basic and diluted earnings (loss) per share

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

	Three-month period ended March 31,	
	2020	2019
Net income (loss) attributable to Vale's stockholders:		
Net income (loss)	984	(6,422)
Thousands of shares		
Weighted average number of shares outstanding - common shares	5,128,598	5,183,120
Basic and diluted earnings (loss) per share:		
Common share (R\$)	0.19	(1.24)

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

9. Accounts receivable

	Consolidated	
	March 31, 2020	December 31, 2019
Accounts receivable	11,142	10,448
Expected credit loss	(246)	(253)
	10,896	10,195
Revenue related to the steel sector - %	83.81%	87.33%

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Impairment of accounts receivable recorded in the income statement	55	-

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

10. Inventories

	Consolidated	
	March 31, 2020	December 31, 2019
Finished products	13,354	10,505
Work in progress	3,934	3,082
Consumable inventory	3,975	3,641
Total	21,263	17,228

	Consolidated	
	Three-month period ended March 31,	
	2020	2019
Provision for net realizable value	314	69

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	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Other financial assets				
Assets held for sale (note 12)	790	613	-	-
Restricted cash	-	-	768	609
Loans	-	-	398	350
Derivative financial instruments (note 19)	442	1,160	315	742
Investments in equity securities	-	-	1,922	2,925
Related parties - Loans (note 24)	1,418	1,289	8,281	6,448
	2,650	3,062	11,684	11,074
Other financial liabilities				
Derivative financial instruments (note 19)	3,689	377	4,203	1,237
Related parties - Loans (note 24)	4,450	3,951	5,152	3,853
Financial guarantees	-	-	2,808	2,116
Participative stockholders' debentures	-	-	10,519	10,416
	8,139	4,328	22,682	17,622

Participative stockholders' debentures

On April 1, 2020 (subsequent event), the Company made available for withdrawal as remuneration the amount of R\$506.

12. Investments in associates and joint ventures

a) Changes during the period

Changes in investments in associates and joint ventures as follows:

	Consolidated	
	2020	Total 2019
Balance at January 1,	11,278	12,495
Additions (i)	364	1
Translation adjustment	311	66
Equity results in income statement	(521)	397
Equity results in statement of comprehensive income	(6)	(13)
Dividends declared	(182)	(207)
Others	55	12
Balance at March 31,	11,299	12,751

(i) Refers to CSP's capital increase.

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

b) Guarantees provided

As of March 31, 2020, corporate financial guarantees provided by Vale (within the limit of its direct or indirect interest) for certain associates and joint ventures were R\$8,058 (December 31, 2019 R\$6,671).

c) Acquisitions and divestitures

New Steel - On January 24, 2019 the Company acquired 100% of the share capital of New Steel Global N.V. ("New Steel") and gained its control for the total cash consideration of R\$1,884. 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 the research and development project for processing and beneficiating iron ore, which is expected to be used on the Company's pelletizing operation.

Henan Longyu – On December 27, 2019 the Company entered into an agreement to sell its 25% interest in Henan Longyu Energy Resources Co., Ltd, a company that operates two coal mines in the province of Henan, China, for the total consideration of R\$613 (US\$152 million). The closing is expected for the end of 2020 upon completion of conditions precedent. The investment is classified as held for sale as "other financial assets" on current assets.

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 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.

The existing major shareholders, Vale and Sumitomo Metal Mining, Co., Ltd. ("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. The Company expects to set and sign the final terms and conditions in 2020 and complete its divestment during 2021.

Selected Notes to the Interim Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



Investments in associates and joint ventures (continued)

Associates and joint ventures	% ownership	% voting capital	Investments in associates and joint ventures		Equity results in the income statement		Consolidated Dividends received	
			March 31, 2020	December 31, 2019	Three-month period ended March 31,		Three-month period ended March 31,	
					2020	2019	2020	2019
Ferrous minerals								
Baovale Mineração S.A.	50.00	50.00	107	102	5	6	-	-
Companhia Coreano-Brasileira de Pelotização	50.00	50.00	371	354	15	67	-	-
Companhia Hispano-Brasileira de Pelotização (i)	50.89	50.89	296	284	12	47	-	-
Companhia Ítalo-Brasileira de Pelotização (i)	50.90	51.00	286	262	24	31	-	-
Companhia Nipo-Brasileira de Pelotização (i)	51.00	51.11	615	605	10	114	-	-
MRS Logística S.A.	48.16	46.75	1,932	1,999	(9)	44	-	-
VLI S.A.	37.60	37.60	3,139	3,273	(131)	3	-	-
Zhuhai YPM Pellet Co.	25.00	25.00	114	91	-	-	-	-
			6,860	6,970	(74)	312	-	-
Coal								
Henan Longyu Energy Resources Co., Ltd.	25.00	25.00	-	-	-	(21)	-	-
			-	-	-	(21)	-	-
Base metals								
Korea Nickel Corp.	25.00	25.00	51	56	2	(2)	-	-
			51	56	2	(2)	-	-
Others								
Aliança Geração de Energia S.A. (i)	55.00	55.00	1,814	1,894	46	54	-	-
Aliança Norte Energia Participações S.A. (i)	51.00	51.00	642	646	(4)	7	-	-
California Steel Industries, Inc.	50.00	50.00	1,223	975	(28)	62	-	-
Companhia Siderúrgica do Pecém (ii)	50.00	50.00	-	-	(364)	-	-	-
Mineração Rio do Norte S.A.	40.00	40.00	347	393	(46)	(4)	-	-
Others			362	344	(53)	(11)	-	-
			4,388	4,252	(449)	108	-	-
Total			11,299	11,278	(521)	397	-	-

(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.

13. Intangibles

Changes in intangibles are as follows:

	Consolidated					
	Goodwill	Concessions	Contract right	Software	Research and development project and patents (i)	Total
Balance at December 31, 2019	14,628	16,005	563	304	2,757	34,257
Additions	-	87	-	30	-	117
Disposals	-	(5)	-	-	-	(5)
Amortization	-	(215)	(1)	(30)	-	(246)
Translation adjustment	1,616	-	86	25	2	1,729
Balance at March 31, 2020	16,244	15,872	648	329	2,759	35,852
Cost	16,244	20,578	1,135	3,809	2,759	44,525
Accumulated amortization	-	(4,706)	(487)	(3,480)	-	(8,673)
Balance at March 31, 2020	16,244	15,872	648	329	2,759	35,852

	Consolidated					
	Goodwill	Concessions	Contract right	Software	Research and development project and patents (i)	Total
Balance at December 31, 2018	14,155	15,737	530	428	-	30,850
Additions	-	816	-	61	1,888	2,765
Disposals	-	(38)	-	-	-	(38)
Amortization	-	(419)	(2)	(75)	-	(496)
Translation adjustment	165	16	12	5	-	198
Balance at March 31, 2019	14,320	16,112	540	419	1,888	33,279
Cost	14,320	20,144	804	3,751	1,888	40,907
Accumulated amortization	-	(4,032)	(264)	(3,332)	-	(7,628)
Balance at March 31, 2019	14,320	16,112	540	419	1,888	33,279

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

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.

14. Property, plant and equipment

Changes in property, plant and equipment are as follows:

	Consolidated								
	Land	Building	Facilities	Equipment	Mineral properties	Right of use assets	Others	Constructions in progress	Total
Balance at December 31, 2019	2,881	40,256	38,713	22,921	33,302	6,819	25,201	17,640	187,733
Additions (i)	-	-	-	-	-	118	-	3,992	4,110
Disposals	-	(1)	(13)	(22)	(19)	-	(4)	(187)	(246)
Assets retirement obligation	-	-	-	-	218	-	-	-	218
Depreciation, amortization and depletion	-	(540)	(619)	(922)	(642)	(179)	(631)	-	(3,533)
Translation adjustment	155	2,616	1,465	3,407	4,336	1,444	1,331	605	15,359
Transfers	83	(80)	355	275	1,383	-	304	(2,320)	-
Balance at March 31, 2020	3,119	42,251	39,901	25,659	38,578	8,202	26,201	19,730	203,641
Cost	3,119	81,343	76,067	54,363	84,602	9,221	50,108	19,730	378,553
Accumulated depreciation	-	(39,092)	(36,166)	(28,704)	(46,024)	(1,019)	(23,907)	-	(174,912)
Balance at March 31, 2020	3,119	42,251	39,901	25,659	38,578	8,202	26,201	19,730	203,641

	Consolidated								
	Land	Building	Facilities	Equipment	Mineral properties	Right of use assets	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/CPC 06 (R2) adoption	-	-	-	-	-	6,978	-	-	6,978
Additions (i)	-	-	-	-	-	-	-	3,032	3,032
Disposals	(79)	(235)	(1)	(8)	(486)	-	(4)	(278)	(1,091)
Assets retirement obligation	-	-	-	-	472	-	-	-	472
Depreciation, amortization and depletion	-	(501)	(610)	(798)	(603)	(180)	(847)	-	(3,539)
Translation adjustment	6	157	162	114	473	32	67	111	1,122
Transfers	1	161	12	1,359	947	-	237	(2,717)	-
Balance at March 31, 2019	2,387	42,016	43,099	25,493	33,734	6,830	27,628	13,268	194,455
Cost	2,387	71,456	68,213	48,838	66,824	7,018	46,183	13,268	324,187
Accumulated depreciation	-	(29,440)	(25,114)	(23,345)	(33,090)	(188)	(18,555)	-	(129,732)
Balance at March 31, 2019	2,387	42,016	43,099	25,493	33,734	6,830	27,628	13,268	194,455

(i) Includes capitalized borrowing costs.

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 15) compared to those disclosed in the financial statements as at December 31, 2019.

Leases

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

	Assets				
	December 31, 2019	Additions and contract modifications	Depreciation	Translation adjustment	March 31, 2020
Ports	2,958	3	(46)	723	3,638
Vessels	2,341	-	(58)	669	2,952
Pellets plants	676	115	(43)	-	748
Properties	521	-	(21)	9	509
Energy plants	250	-	(1)	-	249
Mining equipment	73	-	(10)	43	106
Total	6,819	118	(179)	1,444	8,202

	December 31, 2019	Additions and contract modifications	Payments	Interest	Translation adjustment	Liabilities March 31, 2020
Ports	3,023	3	(85)	25	752	3,718
Vessels	2,343	-	(86)	28	743	3,028
Pellets plants	705	115	(5)	8	-	823
Properties	614	-	(21)	5	35	633
Energy plants	282	-	(1)	4	-	285
Locomotives	154	-	(4)	4	35	189
Mining equipment	97	-	(16)	4	43	128
Total	7,218	118	(218)	78	1,608	8,804

The annual minimum payments are presented as follows:

	2020	2021	2022	2023	2024 onwards	Total
Ports	213	281	281	281	4,357	5,413
Vessels	260	338	328	322	2,417	3,665
Pellets plants	172	146	146	52	494	1,010
Properties	140	156	94	73	250	713
Energy plants	26	31	31	31	307	426
Locomotives	31	42	42	42	120	277
Mining equipment	36	36	26	5	-	103
Total	878	1,030	948	806	7,945	11,607

The amounts in the table above presents the undiscounted lease obligation by maturity date. The lease liability disclosed as “leases” in the balance sheet is measured at the present value of such obligations.

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-month period ended March 31, 2020 and 2019 was R\$147 and R\$710, respectively. The interest accretion recognized in the income statement is disclosed in note 6.

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

a) Net debt

The Company evaluates the net debt with the objective of ensuring the continuity of its business in the long term.

	March 31, 2020	Consolidated December 31, 2019
Debt contracts in the international markets	79,327	42,298
Debt contracts in Brazil	9,442	10,327
Total of loans and borrowings	88,769	52,625
(-) Cash and cash equivalents	61,284	29,627
(-) Short-term investments	2,488	3,329
Net debt	24,997	19,669

b) Cash and cash equivalents

Cash and cash equivalents includes cash, immediately redeemable deposits and short-term investments with an insignificant risk of change in value. They are readily convertible to cash, being R\$12,981 denominated in R\$, indexed to the Brazilian Interbank Interest rate (“DI Rate” or “CDI”), R\$47,092 denominated in US\$, mainly time deposits and R\$1,211 denominated in other currencies.

c) Short-term investments

At March 31, 2020 and December 31, 2019, the balance of R\$2,488 and R\$ 3,329, respectively, 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.

d) Loans and borrowings

i) Total debt

	Consolidated			
	Current liabilities		Non-current liabilities	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Debt contracts in the international markets				
Floating rates in:				
US\$	884	456	40,113	11,294
EUR	-	-	1,144	907
Fixed rates in:				
US\$	73	593	31,551	24,506
EUR	-	-	4,294	3,398
Other currencies	66	56	505	427
Accrued charges	697	645	-	16
	1,720	1,750	77,607	40,548
Debt contracts in Brazil				
Floating rates in:				
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	2,667	2,620	5,890	6,759
Basket of currencies and US\$ indexed to LIBOR	229	177	234	226
Fixed rates in:				
R\$	151	174	151	181
Accrued charges	120	174	-	16
	3,167	3,145	6,275	7,182
Total	4,887	4,895	83,882	47,730

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

	Consolidated	
	Principal	Estimated future interest payments (i)
2020	2,546	2,714
2021	3,491	3,618
2022	15,220	3,332
2023	5,945	3,089
Between 2024 and 2028	38,184	10,664
2029 onwards	22,566	14,064
Total	87,952	37,481

(i) Based on interest rate curves and foreign exchange rates applicable as at March 31, 2020 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.

At March 31, 2020, the average annual interest rates by currency are as follows:

	Consolidated	
	Average interest rate (i)	Total debt
Loans and borrowings		
US\$	4.32%	73,724
R\$ (ii)	8.98%	8,973
EUR (iii)	3.76%	5,490
Other currencies	3.59%	582
		88,769

(i) In order to determine the average interest rate for debt contracts with floating rates, the Company used the rate applicable at March 31, 2020.

(ii) R\$ denominated debt that bears interest at IPCA, CDI, TR or TJLP, plus spread. For a total of R\$8,796 the Company entered into derivative transactions to mitigate the exposure to the cash flow variations of the floating rate debt denominated in R\$, resulting in an average cost of 3.01% per year in US\$.

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

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

	Consolidated
	Loans and borrowings
December 31, 2019	52,625
Additions	24,419
Repayments	(1,678)
Interest paid	(1,077)
Cash flow from financing activities	21,664
Effect of exchange rate	13,608
Interest accretion	872
Non-cash changes	14,480
March 31, 2020	88,769

iii) Credit and financing lines

To mitigate liquidity risk, Vale has two revolving credit facilities, in the amount of R\$15,597 (US\$3 billion) and R\$10,397 (US\$2 billion), which will mature in 2022 and 2024, respectively. In March 2020, the Company drew down all of its revolving credit facilities in the total amount of R\$25,994 (US\$5 billion) as a precautionary measure in order to increase its cash position and preserve financial flexibility in light of current uncertainty in the global markets resulting from the COVID-19 outbreak.

iv) Guarantees

As at March 31, 2020 and December 31, 2019, loans and borrowings are secured by property, plant and equipment in the amount of R\$936 and R\$887, respectively.

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

v) 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 March 31, 2020.

16. Liabilities related to associates and joint ventures

On November 5, 2015, a rupture occurred in the Fundão tailings dam, in Mariana (State of Minas Gerais), 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, the Company has recorded a provision for the de-characterization of the Germano dam during the second quarter of 2019, which was also built under the upstream method.

On October 25, 2019, Samarco obtained the Corrective Operation License for its operating activities in the Germano Complex. Following this authorization, Samarco has obtained all environmental licenses required to restart its operations. Samarco currently expects to restart its operations by the end of 2020.

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 period ended March 31, 2020 and 2019 are as follows:

	Consolidated	
	2020	2019
Balance at January 1,	6,853	4,346
Payments	(300)	(200)
Present value valuation	73	(73)
Balance at March 31,	6,626	4,073
	March 31, 2020	December 31, 2019
Current liabilities	2,356	2,079
Non-current liabilities	4,270	4,774
Liabilities	6,626	6,853

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 21.

Samarco's working capital

In addition to the provision, Vale S.A. made available in the three-month period ended March 31, 2020 and 2019, the amount of R\$246 (US\$56 million) and R\$115 (US\$30 million), respectively, 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”.

During 2020, Vale S.A. may provide a short-term credit facility up to R\$1,388 (US\$267 million) to support 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.

Critical accounting estimates and judgments

The provision related to Fundação Renova 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.

Moreover, the main critical assumptions and estimates applied in the Germano dam provision 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.

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.

17. Financial instruments classification

	March 31, 2020				Consolidated December 31, 2019			
	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	61,284	-	-	61,284	29,627	-	-	29,627
Short-term investments	-	-	2,488	2,488	-	-	3,329	3,329
Derivative financial instruments	-	-	442	442	-	-	1,160	1,160
Accounts receivable	10,761	-	135	10,896	9,885	-	310	10,195
Related parties	1,418	-	-	1,418	1,289	-	-	1,289
	73,463	-	3,065	76,528	40,801	-	4,799	45,600
Non-current								
Judicial deposits	12,664	-	-	12,664	12,629	-	-	12,629
Restricted cash	768	-	-	768	609	-	-	609
Derivative financial instruments	-	-	315	315	-	-	742	742
Investments in equity securities	-	1,922	-	1,922	-	2,925	-	2,925
Loans	398	-	-	398	350	-	-	350
Related parties	8,281	-	-	8,281	6,448	-	-	6,448
	22,111	1,922	315	24,348	20,036	2,925	742	23,703
Total of financial assets	95,574	1,922	3,380	100,876	60,837	2,925	5,541	69,303
Financial liabilities								
Current								
Suppliers and contractors	15,642	-	-	15,642	16,556	-	-	16,556
Leases	1,173	-	-	1,173	910	-	-	910
Derivative financial instruments	-	-	3,689	3,689	-	-	377	377
Loans and borrowings	4,887	-	-	4,887	4,895	-	-	4,895
Interest on capital	6,333	-	-	6,333	6,333	-	-	6,333
Related parties	4,450	-	-	4,450	3,951	-	-	3,951
	32,485	-	3,689	36,174	32,645	-	377	33,022
Non-current								
Leases	7,631	-	-	7,631	6,308	-	-	6,308
Derivative financial instruments	-	-	4,203	4,203	-	-	1,237	1,237
Loans and borrowings	83,882	-	-	83,882	47,730	-	-	47,730
Related parties	5,152	-	-	5,152	3,853	-	-	3,853
Participative stockholders' debentures	-	-	10,519	10,519	-	-	10,416	10,416
Financial guarantees	-	-	2,808	2,808	-	-	2,116	2,116
	96,665	-	17,530	114,195	57,891	-	13,769	71,660
Total of financial liabilities	129,150	-	21,219	150,369	90,536	-	14,146	104,682

18. Fair value estimate

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

	March 31, 2020				Consolidated December 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets								
Short-term investments	2,488	-	-	2,488	3,329	-	-	3,329
Derivative financial instruments	-	632	125	757	-	1,806	96	1,902
Accounts receivable	-	135	-	135	-	310	-	310
Investments in equity securities	1,922	-	-	1,922	2,925	-	-	2,925
Total	4,410	767	125	5,302	6,254	2,116	96	8,466
Financial liabilities								
Derivative financial instruments	-	7,364	528	7,892	-	1,130	484	1,614
Participative stockholders' debentures	-	10,519	-	10,519	-	10,416	-	10,416
Financial guarantees	-	2,808	-	2,808	-	2,116	-	2,116
Total	-	20,691	528	21,219	-	13,662	484	14,146

There were no transfers between Level 1 and Level 2, or between Level 2 and Level 3 for the three-month period ended in March 31, 2020.

The following table presents the changes in Level 3 assets and liabilities for the three-month period ended in March 31, 2020:

	Consolidated Derivative financial instruments	
	Financial assets	Financial liabilities
Balance at December 31, 2019	96	484
Gain and losses recognized in income statement	29	44
Balance at March 31, 2020	125	528

Methods and techniques of evaluation

i) 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 26).

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
March 31, 2020				
Debt principal	87,952	90,131	41,065	49,066
December 31, 2019				
Debt principal	51,774	58,784	36,208	22,576

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

Coronavirus outbreak - At this time, the outbreak has not caused any significant impact on the fair value of the Company's assets and liabilities. However, abnormally large changes have occurred in the valuation of financial assets across many markets since the outbreak. The outbreak continues to be uncertain, making it impossible to forecast the final impact it could have on the economy, and in turn, on the Company's business, liquidity, and financial position meaning that the fair values of the Company's assets and liabilities may change in later periods.

19. Derivative financial instruments

a) Derivatives effects on statement of financial position

	Consolidated			
	March 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Foreign exchange and interest rate risk				
CDI & TJLP vs. US\$ fixed and floating rate swap	-	-	53	-
IPCA swap	238	180	337	474
Pre-dollar swap	74	-	84	31
	312	180	474	505
Commodities price risk				
Nickel (i)	53	-	606	36
Bunker oil, Gasoil and Brent	16	-	76	-
	69	-	682	36
Others	61	135	4	201
	61	135	4	201
Total	442	315	1,160	742

(i) The nickel hedge accounting program was fully settled on April 1, 2020.

	Consolidated			
	March 31, 2020		December 31, 2019	
	Current	Non-current	Current	Non-current
Foreign exchange and interest rate risk				
CDI & TJLP vs. US\$ fixed and floating rate swap	876	2,715	196	322
IPCA swap	455	462	52	150
Eurobonds swap	31	294	24	117
Pre-dollar swap	191	514	32	148
	1,553	3,985	304	737
Commodities price risk				
Nickel	11	-	13	16
Bunker oil, Gasoil and Brent	1,746	-	29	-
	1,757	-	42	16
Conversion options - VLI	360	168	-	484
Others	19	50	31	-
	379	218	31	484
Total	3,689	4,203	377	1,237

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

	Gain (loss) recognized in the income statement		Financial settlement inflows (outflows)		Consolidated Gain recognized in other comprehensive income	
	Three-month period ended March 31,					
	2020	2019	2020	2019	2020	2019
Foreign exchange and interest rate risk						
CDI & TJLP vs. US\$ fixed and floating rate swap	(3,126)	(28)	(80)	(324)	-	-
IPCA swap	(1,089)	46	1	(101)	-	-
Eurobonds swap	(145)	(72)	(24)	(19)	-	-
Pre-dollar swap	(661)	8	(100)	(8)	-	-
	(5,021)	(46)	(203)	(452)	-	-
Commodities price risk						
Nickel	-	74	1,243	13	277	-
Bunker oil, Gasoil and Brent	(1,638)	108	(4)	-	-	-
	(1,638)	182	1,239	13	277	-
Options - MBR	-	7	-	-	-	-
Conversion options - VLI	(44)	114	-	-	-	-
Others	309	83	296	(1)	-	-
	265	204	296	(1)	-	-
Total	(6,394)	340	1,332	(440)	277	-

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

	Last maturity dates
Currencies and interest rates	September 2029
Palladium	March 2021
Nickel	April 2020
Brent	December 2020
Gasoil	December 2020
VLI	December 2027
Others	December 2022

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 Holding BV. 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 March 31, 2020, the carrying value of the debts designated as instrument hedge of these investments are R\$11,930 (US\$2,295 million) and R\$4,295 (EUR750 million).

	Loss recognized in the other comprehensive income	
	Consolidated	
	2020	2019
Hedge in foreign operation, net of tax	(2,394)	(44)

20. Provisions

	Consolidated			
	Current liabilities		Non-current liabilities	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Payroll, related charges and other remunerations	2,266	3,183	-	-
Onerous contracts	257	229	4,473	3,489
Environmental obligations	561	587	1,238	980
Asset retirement obligations	637	638	17,414	15,323
Provisions for litigation (note 21)	-	-	6,042	5,895
Employee postretirement obligations (note 22)	371	319	9,709	8,546
Provisions	4,092	4,956	38,876	34,233

21. 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, 2019	2,804	1,213	1,835	43	5,895
Additions and reversals, net	23	14	49	3	89
Payments	(3)	(48)	(89)	-	(140)
Indexation and interest	57	39	24	2	122
Translation adjustment	66	10	-	-	76
Balance at March 31, 2020	2,947	1,228	1,819	48	6,042

	Consolidated				
	Tax litigation (i)	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2018	2,816	644	1,785	13	5,258
Additions and reversals, net	27	174	79	19	299
Payments	(65)	(46)	(100)	-	(211)
Indexation and interest	(30)	63	30	5	68
Translation adjustment	-	(5)	-	-	(5)
Balance at March 31, 2019	2,748	830	1,794	37	5,409

(i) Includes amounts regarding to social security claims that were classified as labor claims.

b) Contingent liabilities

The Company has contingent liabilities where claims are debated in both administrative and judicial claims and whose expected loss is classified as possible, and for which the recognition of a provision is not considered necessary by the Company.

Based in the legal opinions, the presentation of the litigations classified with expected loss as possible are presented as follow:

	Consolidated	
	March 31, 2020	December 31, 2019
Tax litigations	37,876	33,839
Civil litigations	5,702	6,116
Labor litigations	2,747	3,116
Environmental litigations	4,433	4,410
Brumadinho event	698	635
Total	51,456	48,116

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 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 over the transportation of iron ore by Vale itself. The variation over the period is mainly due to the new proceedings related to CFEM, IPI, ICMS and penalty, the termination of the proceedings regarding PIS and fees, the changes in the amount involved in the ISSQN cases, as well as the imposition of the 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.

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	
	March 31, 2020	December 31, 2019
Tax litigations	5,132	5,152
Civil litigations (i)	330	346
Labor litigations	968	992
Environmental litigations	170	163
Brumadinho event (note 3)	6,064	5,976
Total	12,664	12,629

(i) Amounts of blocked financial investments reclassified to restricted cash in "other financial assets".

In addition to the above-mentioned tax, civil, labor and environmental judicial deposits, the Company contracted R\$9.5 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\$5.7 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. The agreement also establishes a possible renegotiation of Fundação Renova's repair programs after the conclusion of the specialist's studies hired to advise the Public Prosecutor's Office in this process. These negotiations are expected to occur during 2020.

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.

In January 2020, the Court issued an order for the Brazilian Mining Authority ("ANM") ratifying the revocation of the decision issued on the public civil actions filed by the Brazilian Federal Government and others, determine the immediate revocation of the restrictions on Vale's mining concessions.

In January 2020, the Court also determined the commencement of 10 specific proceedings to address the controverted and pendent topics of the settlement agreements signed by the parties (TTAC and TacGov), according to priority aspects of said agreements (the "Priority Topics"), namely: Topic 1 - Environmental Recovery Extra and Intra Channel; Topic 2 – Risks to Human Health and Ecologic Risks; Topic 3 - Resettlement of Affected Communities; Topic 4 - Infrastructure and Development; Topic 5 - Operational Return of HPP Risoleta Neves; Topic 6 - Performance Measurement and Monitoring; Topic 7 – Registration; Topic 8 – Reestablishment of economic activities; Topic 9 - Water Supply for Human Consumption; and Topic 10 - Technical Assistants to the affected communities. The Court has been establishing specific obligations in each of the Topics for the public authorities, Renova Foundation and the companies Vale, Samarco and BHP, with the purpose of overcoming the pending and controverted topics of each subject.

(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 did not make disclosures concerning the risks and dangers of the operations of Samarco's Fundão dam and the adequacy of related programs and procedures.

In June 2019, the Court issued a decision and order dismissing with prejudice the putative federal securities class action. In December 2019 the plaintiffs filed a Notice of Appeal to the Court of Appeals. On March 10, 2020, the plaintiff filed its opening appeal brief. A letter with the court requesting a deadline for our brief was filed on March 20, 2020. On the same day, the Court of Appeals for the Second Circuit accepted our request and has set June 8, 2020 as the deadline for the filing of our brief. Based on the assessment of the Company's legal consultants, Vale has good arguments to oppose the appeal.

(iii) Class action lawsuits related to Vale's American Depositary Receipts

With respect to litigation in the United States concerning Samarco's Fundão dam, Vale and certain of our officers have been named as defendants in securities class action suits in the Federal Court in New York brought by holders of Vale's American Depositary Receipts under U.S. federal securities laws. The suit was brought as a putative class action on behalf of holders of Vale's American Depositary Receipts ("ADRs"), alleging violations of the U.S. Federal Securities laws on the basis of alleged false and misleading statements or omissions concerning the risks of operations of Samarco's Fundão dam and the adequacy of the related programs and procedures.

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

Fact and Expert discovery was totally concluded in October 2019. On September 27, 2019, the Court denied class certification. On December 26, 2019, the Court issued an Order stating that the parties had informed the Court that the parties had reached a settlement in principle. The Court directed the parties to submit a motion to approve a proposed settlement no later than February 07, 2020. On February 07, 2020, the parties have filed to the Court an "Stipulation and Agreement of Settlement". On February 22, 2020, the court signed our proposed order preliminarily approving the settlement in the total amount of R\$130 (US\$25 million) and has also set a settlement conference for June 10, 2020 to discuss final approval of the settlement.

(iv) 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 judge withdrew the charges against Vale and BHP executives and the accusation withheld for trial for the two companies together with Samarco and its representatives. The accusation of crimes committed against the Environmental Public Administration by Vale and one of its executives also remained unaltered. Additionally, the judge determined precatory letters to be sent to collect the defense witnesses testimonies and opened a 60 day term for the defenses to present a list of questions to be put together with the international cooperation for the testimony of the accusation witnesses residing in Canada.

In March, 2020, the Lower Court at Ponte Nova scheduled hearings to take place in April and May, 2020, to take depositions of those defense witnesses who were able to attend it, but due to the new coronavirus pandemic, all hearings in the country which were previously scheduled to take place in April have been cancelled by an express determination from the National Justice Council. Vale are currently waiting a confirmation from the Courts whether hearings previously scheduled to take place in the next months will be maintained or not.

(v) Tax proceedings

In 2018, the Office of the Attorney General for the National Treasury (PGFN) requested a judicial order to secure the payment of alleged federal tax and social security debts regarding 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 2015, the Company requested for the enforcement of the judicial decision in the amount of R\$524 related to a favorable unappealable decision which partially recognized its right to refund the differences of monetary adjustments and interests due over to the third convertible bonds issued by Eletrobrás shares in the period within 1987 to 1993. In November 2019, the Company requested for the payment of the amount of R\$297 recognized by Eletrobrás as due and awaits judicial analysis of the surplus amount. Therefore, it has not possible yet to determine the amount to be refunded and, consequently, the asset has not been registered in the Company's interim financial statements.

(ii) ICMS included in PIS and COFINS tax base

Vale had been discussing the issue regarding the exclusion of ICMS in PIS and COFINS tax basis in two judicial proceedings, related to taxable events after December 2001. In one of the proceedings, the company has obtained a definitive favorable decision (res judicata). In the second proceeding the current decision is also favorable to the Company, but this proceeding did not reach the res judicata. Vale is waiting for a final decision on the leading that will be issued by Supreme Court in order to calculate the amount to be refunded arising from both proceedings. The Company did not record this asset in its interim financial statements.

(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\$6,238 (US\$1.2 billion) plus costs and interest (with interest and costs, the award exceeds R\$10,397 (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\$10,397 (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 challenged the award before the English High Court, and its challenge was dismissed on November 29, 2019. BSGR has also applied to the United States Bankruptcy Court to have its administration recognized in the United States.

On December 3, 2019, Vale and two of its affiliates filed new litigation proceedings in the English High Court, claiming damages of approximately R\$9,618 (US\$1.85 billion), against certain individuals and related parties to BSGR.

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") and the Canadian Department of Justice - Canada Revenue Agency signed an agreement regarding a tax litigation matter related to the appropriate tax treatment of certain receipts received and expenditures incurred by VCL in respect of merger and acquisition transactions in 2006. In 2019, the Company recognized a contingent asset in the amount of R\$813 (CAD221 million) for the agreed tax refund including interest and recognized in 2020 an additional amount of R\$77 (CAD21 million) related to interest. On the date of the issue of this interim financial statement the Company received the total amount due to this contingent asset.

22. Employee postretirement obligations

Reconciliation of net liabilities recognized in the statement of financial position

	March 31, 2020			December 31, 2019		
	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	(15,545)	(19,779)	(6,636)	(16,148)	(17,818)	(6,066)
Fair value of assets	18,882	16,335	-	21,380	15,019	-
Effect of the asset ceiling	(3,337)	-	-	(5,232)	-	-
Liabilities	-	(3,444)	(6,636)	-	(2,799)	(6,066)
Current liabilities	-	(38)	(333)	-	(50)	(306)
Non-current liabilities	-	(3,406)	(6,303)	-	(2,749)	(5,760)
Liabilities	-	(3,444)	(6,636)	-	(2,799)	(6,066)

23. Stockholders' equity

a) Share capital

As at March 31, 2020, the share capital was R\$77,300 corresponding to 5,284,474,782 shares issued and fully paid without par value.

Stockholders	March 31, 2020		
	Common shares	Golden shares	Total
Litel Participações S.A. and Litela Participações S.A.	594,565,564	-	594,565,564
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	1,114,014,119	-	1,114,014,119
Foreign institutional investors in local market	1,127,547,619	-	1,127,547,619
FMP - FGTS	45,331,663	-	45,331,663
PIBB - Fund	2,840,426	-	2,840,426
Institutional investors	1,017,710,153	-	1,017,710,153
Retail investors in Brazil	324,150,801	-	324,150,801
Brazilian Government (Golden Share)	-	12	12
Shares outstanding	5,129,910,942	12	5,129,910,954
Shares in treasury	154,563,828	-	154,563,828
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

In March 2020 and 2019, the Company used 1,628,485 and 2,024,059 treasury shares, respectively, to pay the Matching program of its eligible executives, in the amount of R\$68 and R\$84, respectively, recognized as "assignment and transfer of shares".

24. 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.

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 March 31,							
	2020				2019			
	Joint Ventures	Associates	Major stockholders	Total	Joint Ventures	Associates	Major stockholders	Total
Net operating revenue	308	274	142	724	243	255	165	663
Cost and operating expenses	(1,201)	(28)	-	(1,229)	(1,882)	(30)	-	(1,912)
Financial result	33	8	(106)	(65)	12	(1)	(116)	(105)

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 variable lease payments of the pelletizing plants and the logistical costs for using the Nacala Logistic Corridor.

b) Outstanding balances with related parties

	Consolidated							
	March 31, 2020				December 31, 2019			
	Joint Ventures	Associates	Major stockholders	Total	Joint Ventures	Associates	Major stockholders	Total
Assets								
Cash and cash equivalents	-	-	7,153	7,153	-	-	5,578	5,578
Accounts receivable	353	614	11	978	367	88	19	474
Dividends receivable	524	25	-	549	335	25	-	360
Loans (i)	9,699	-	-	9,699	7,737	-	-	7,737
Derivatives financial instruments	-	-	-	-	-	-	169	169
Other assets	416	-	-	416	262	-	-	262
Liabilities								
Supplier and contractors	478	49	124	651	1,218	113	149	1,480
Loans (ii)	-	7,136	5,739	12,875	-	5,511	6,804	12,315
Derivatives financial instruments	-	-	418	418	-	-	259	259
Other liabilities	2,466	384	-	2,850	2,293	-	-	2,293

(i) Refers to the loan with Nacala BV.

(ii) Mainly relates to the loan from Pangea Emirates Ltd.

Major stockholders

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

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

a) Other financial assets and liabilities

	Parent company			
	Current		Non-Current	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Other financial assets				
Restricted cash	-	-	527	530
Loans	-	-	18	18
Derivative financial instruments	312	450	305	593
Investments in equity securities	-	-	1,679	2,555
Related parties - Loans	307	690	227	276
	619	1,140	2,756	3,972
Other financial liabilities				
Derivative financial instruments	1,273	280	3,722	972
Related parties - Loans	6,448	6,392	84,387	62,861
Financial guarantees	-	-	2,808	2,116
Participative stockholders' debentures	-	-	10,519	10,416
	7,721	6,672	101,436	76,365

b) Investments

	Parent company	
	2020	2019
Balance at January 1st,	144,594	139,510
Additions and Capitalizations	1,104	2,092
Disposals	(118)	(84)
Translation adjustment	28,920	1,366
Equity results in income statement	(2,208)	4,472
Equity results in statement of comprehensive income	157	16
Dividends declared	(535)	(164)
Others	522	(18)
Balance at March 31,	172,436	147,190

c) Intangibles

	Parent company			
	Concessions	Right of use	Software	Total
Balance at December 31, 2019	15,993	99	179	16,271
Additions	87	-	28	115
Disposals	(5)	-	-	(5)
Amortization	(215)	(1)	(14)	(230)
Balance at March 31, 2020	15,860	98	193	16,151
Cost	20,566	223	2,533	23,322
Accumulated amortization	(4,706)	(125)	(2,340)	(7,171)
Balance at March 31, 2020	15,860	98	193	16,151

	Parent company			
	Concessions	Right of use	Software	Total
Balance at December 31, 2018	15,240	105	277	15,622
Additions	815	-	24	839
Disposals	(38)	-	-	(38)
Amortization	(360)	(1)	(62)	(423)
Balance at March 31, 2019	15,657	104	239	16,000
Cost	19,662	223	2,567	22,452
Accumulated amortization	(4,005)	(119)	(2,328)	(6,452)
Balance at March 31, 2019	15,657	104	239	16,000

d) Property, plant and equipment

	Parent company								
	Land	Building	Facilities	Equipment	Mineral properties	Leasing agreements	Others	Constructions in progress	Total
Balance at December 31, 2019	1,797	26,555	30,219	10,213	7,153	2,114	19,606	8,218	105,875
Additions (i)	-	-	-	-	-	117	-	1,980	2,097
Disposals	-	-	(9)	(2)	(19)	-	(3)	(7)	(40)
Assets retirement obligation	-	-	-	-	(383)	-	-	-	(383)
Depreciation, amortization and depletion	-	(271)	(395)	(354)	(159)	(87)	(492)	-	(1,758)
Transfers	84	(79)	368	273	935	-	424	(2,005)	-
Balance at March 31, 2020	1,881	26,205	30,183	10,130	7,527	2,144	19,535	8,186	105,791
Cost	1,881	34,377	39,725	18,827	10,148	2,539	33,400	8,186	149,083
Accumulated depreciation	-	(8,172)	(9,542)	(8,697)	(2,621)	(395)	(13,865)	-	(43,292)
Balance at March 31, 2020	1,881	26,205	30,183	10,130	7,527	2,144	19,535	8,186	105,791

	Parent company								
	Land	Building	Facilities	Equipment	Mineral properties	Leasing agreements	Others	Constructions in progress	Total
Balance at December 31, 2018	1,735	26,559	30,593	10,004	7,689	-	19,240	7,996	103,816
Effects of IFRS 16/CPC 06 (R2) adoption	-	-	-	-	-	2,058	-	-	2,058
Additions (i)	-	-	-	-	-	-	-	997	997
Disposals	(2)	(229)	-	(3)	(92)	-	(4)	(276)	(606)
Assets retirement obligation	-	-	-	-	208	-	-	-	208
Depreciation, amortization and depletion	-	(248)	(346)	(327)	(136)	(76)	(705)	-	(1,838)
Transfers	1	437	63	374	(11)	-	519	(1,383)	-
Balance at March 31, 2019	1,734	26,519	30,310	10,048	7,658	1,982	19,050	7,334	104,635
Cost	1,734	33,442	38,422	17,598	9,850	2,058	31,161	7,334	141,599
Accumulated depreciation	-	(6,923)	(8,112)	(7,550)	(2,192)	(76)	(12,111)	-	(36,964)
Balance at March 31, 2019	1,734	26,519	30,310	10,048	7,658	1,982	19,050	7,334	104,635

(i) Includes capitalized borrowing costs.

e) Loans and borrowings

	Parent company			
	Current liabilities		Non-current liabilities	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Debt contracts in the international markets				
Floating rates in:				
US\$	898	445	7,863	6,419
Fixed rates in:				
US\$	-	536	2,705	2,098
EUR	-	-	4,295	3,398
Accrued charges	121	238	-	-
	1,019	1,219	14,863	11,915
Debt contracts in Brazil				
Floating rates in:				
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	2,301	2,279	5,892	6,418
Basket of currencies and US\$ indexed to LIBOR	232	180	232	225
Fixed rates in:				
R\$	126	151	132	155
Accrued charges	117	157	-	-
	2,776	2,767	6,256	6,798
Total	3,795	3,986	21,119	18,713

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

	Parent company
	Debt principal
2020	2,465
2021	2,917
2022	3,386
2023	5,830
Between 2024 and 2028	7,287
2029 onwards	2,791
	24,676

f) Provisions

	Parent company			
	Current liabilities		Non-current liabilities	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Payroll, related charges and other remunerations	1,418	2,124	-	-
Environmental obligations	469	490	656	585
Asset retirement obligations	479	488	3,172	3,567
Provisions for litigation	-	-	5,158	5,102
Employee postretirement obligations	119	108	2,117	2,114
Provisions	2,485	3,210	11,103	11,368

g) Provisions for litigation

	Parent company				
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2019	2,325	1,004	1,734	39	5,102
Additions and reversals, net	14	14	55	3	86
Payments	(2)	(26)	(87)	-	(115)
Indexation and interest	25	33	25	2	85
Balance at March 31, 2020	2,362	1,025	1,727	44	5,158

	Parent company				
	Tax litigation (i)	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2018	2,347	467	1,660	9	4,483
Additions and reversals, net	26	76	60	19	181
Payments	(8)	(1)	(89)	5	(93)
Indexation and interest	(31)	38	26	-	33
Balance at March 31, 2019	2,334	580	1,657	33	4,604

(i) Includes amounts regarding to social security claims that were classified as labor claims.

h) Contingent liabilities

	Parent company	
	March 31, 2020	December 31, 2019
Tax litigation	34,698	30,905
Civil litigation	4,068	4,589
Labor litigation	2,667	3,025
Environmental litigation	3,604	4,239
Brumadinho event	698	635
Total	45,735	43,393

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	
	Three-month period ended March 31,	
	2020	2019
Loss before income taxes	(3,114)	(10,305)
Income taxes at statutory rates - 34%	1,059	3,504
Adjustments that affect the basis of taxes:		
Tax incentives	1,225	8
Equity results	(751)	1,521
Others (i)	2,565	(1,150)
Income taxes	4,098	3,883

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

26. Additional information about derivatives financial instruments

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

The following tables detail the derivatives positions for Vale and its controlled companies as of March 31, 2020, 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 and other liabilities

To reduce cash flow volatility, swap and forward transactions were implemented to convert into US\$ the cash flows from certain liabilities 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 liabilities.

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

Flow	Notional		Index	Average rate	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
	March 31, 2020	December 31, 2019			March 31, 2020	March 31, 2020	March 31, 2020	2020	2021	2022+	
CDI vs. US\$ fixed rate swap											
Receivable	R\$ 11,167	R\$ 2,115	CDI	100.08%	(2,626)	(155)	(21)	213	(568)	(293)	(1,765)
Payable	US\$ 2,652	US\$ 558	Fix	2.07%							
TJLP vs. US\$ fixed rate swap											
Receivable	R\$ 2,027	R\$ 2,111	TJLP +	1.15%	(964)	(304)	(16)	50	(183)	(250)	(531)
Payable	US\$ 572	US\$ 601	Fix	2.99%							
R\$ fixed rate vs. US\$ fixed rate swap											
Receivable	R\$ 2,060	R\$ 2,173	Fix	6.11%	(592)	(72)	(11)	42	11	(329)	(274)
Payable	US\$ 551	US\$ 604	Fix	0.24%							
IPCA vs. US\$ fixed rate swap											
Receivable	R\$ 2,507	R\$ 2,826	IPCA +	5.06%	(916)	185	(26)	59	(50)	(418)	(448)
Payable	US\$ 662	US\$ 759	Fix	4.01%							
IPCA vs. CDI swap											
Receivable	R\$ 1,660	R\$ 1,634	IPCA +	6.62%	418	422	-	11	238	24	156
Payable	R\$ 1,350	R\$ 1,350	CDI	98.57%							

Flow	Notional		Bought / Sold	Average rate	Fair value		Value at Risk	Fair value by year	
	March 31, 2020	December 31, 2019			March 31, 2020	December 31, 2019	March 31, 2020	2020+	
Forward	R\$ 659	R\$ 121	B	5.81	(40)		6	14	(40)

(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			Average rate	Fair value		Financial Settlement Inflows (Outflows) March 31, 2020	Value at Risk March 31, 2020	Fair value by year		
	March 31, 2020	December 31, 2019	Index		March 31, 2020	December 31, 2019			2020	2021	2022+
EUR fixed rate vs. US\$ fixed rate swap											
Receivable	€ 500	€ 500	Fix	3.75%	(325)	(142)	(24)	24	-	(30)	(295)
Payable	US\$ 613	US\$ 613	Fix	4.29%							

(iii) Protection program for Libor floating interest rate US\$ denominated debt

To reduce the cash flow volatility, swap transactions were implemented to convert Libor floating interest rate cash flows from certain debt instruments issued by Vale into fixed interest rate. In those swaps, Vale receives floating rates and pays fixed rates in US\$.

Flow	Notional			Average rate	Fair value		Value at Risk March 31, 2020	Fair value by year		
	March 31, 2020	December 31, 2019	Index		March 31, 2020	December 31, 2019		2020	2021	2022+
Libor vs. US\$ fixed rate swap										
Receivable	US\$ 100	-	Libor 3M	-	-	-	2	1	(1)	-
Payable	US\$ 100	-	Fix	0.50%						

b) Commodities derivative positions

(i) Protection program for the purchase of fuel oil used on ships

In order to reduce the impact of fluctuations in fuel oil prices on the hiring and availability of maritime freight and, consequently, to reduce the Company's cash flow volatility, hedging operations were carried out through options contracts on Brent Crude Oil and Gasoil (10ppm) 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.

Brent Crude Oil Options

Flow	Notional (ton)			Average strike (US\$/bbl)	Fair value		Financial settlement Inflows (Outflows) March 31, 2020	Value at Risk March 31, 2020	Fair value by year 2020
	March 31, 2020	December 31, 2019	Bought / Sold		March 31, 2020	December 31, 2019			
Call options	9,906,000	7,048,500	B	71	13	45	-	2	13
Put options	9,906,000	7,048,500	S	46	(734)	(15)	(71)	42	(734)
Total					(721)	30	(71)	44	(721)

Gasoil Options

Flow	Notional (ton)			Average strike (US\$/bbl.)	Fair value		Financial settlement Inflows (Outflows) March 31, 2020	Value at Risk March 31, 2020	Fair value by year 2020
	March 31, 2020	December 31, 2019	Bought / Sold		March 31, 2020	December 31, 2019			
Call options	9,610,500	7,710,750	B	89	4	24	-	1	4
Put options	9,610,500	7,710,750	S	57	(835)	(10)	(100)	54	(835)
Total					(831)	14	(100)	55	(831)

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

Nickel Revenue Hedging Program

In 2019, 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 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 and hedge accounting treatment is given to this program.

In March 2020, 73,734 options were sold, leading to the partial discontinuation of the hedge accounting program. The cumulative gain recognized in the cash flow hedge reserve until the settlement of the option contracts will be reclassified to the income statement as the Company recognizes the revenue from nickel sales (hedged item).

On April 1, 2020 (subsequent event), the nickel hedge accounting program was fully settled.

Flow	Notional (ton)			Average strike (US\$/ton)	Fair value		Financial settlement Inflows (Outflows) March 31, 2020	Value at Risk March 31, 2020	Fair value by year	
	March 31, 2020	December 31, 2019	Bought / Sold		March 31, 2020	December 31, 2019			2020	2021
Nickel Revenue Hedging Program										
Call options	2,250	75,984	S	19,188	-	(49)	-	-	-	-
Put options	2,250	75,984	B	16,000	53	652	1,359	4	53	-
Total					53	603	1,359	4	53	-

Palladium Revenue Hedging Program

To reduce the volatility of its future cash flows arising from changes in palladium prices, the Company implemented a Palladium Revenue Hedging Program. Under this program, hedge operations were executed using forwards and option contracts to protect a portion of the highly probable forecast sales at floating prices. 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 palladium price changes.

Flow	Notional (t oz)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year	
	March 31, 2020	December 31, 2019	Bought / Sold	Average strike (US\$/t oz)	March 31, 2020	December 31, 2019	March 31, 2020	March 31, 2020	2020	2021
	Palladium Revenue Hedging Program									
Palladium Forwards	14,400	-	S	2,249	(3)	-	2	7	(3)	-
Call Options	14,400	-	S	2,387	(45)	-	-	5	(21)	(24)
Put Options	14,400	-	B	2,050	38	-	-	2	18	20
Total					(10)	-	2	14	(6)	(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
	March 31, 2020	December 31, 2019	Bought / Sold	Average strike (US\$/day)	March 31, 2020	December 31, 2019	March 31, 2020	March 31, 2020	2020+
	Freight forwards	1,870	1,050	B	12,035	-	1	(17)	4

d) Wheaton Precious Metals Corp. warrants

The Company owned warrants issued by Wheaton Precious Metals Corp. (WPM), a Canadian company with stocks negotiated on the Toronto Stock Exchange and the 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. In February 2020, the Company sold all of its warrants of Wheaton (equivalent to 10,000,000 common shares) for US\$2.50 per warrant, totaling R\$110 (US\$25 million).

Flow	Notional (quantity of warranties)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	March 31, 2020	December 31, 2019	Bought / Sold	Average strike (US\$/share)	March 31, 2020	December 31, 2019	March 31, 2020	March 31, 2020	2023
	Call options	-	10,000,000	B	-	-	105	110	-

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)		Bought / Sold	Average strike (R\$/share)	Fair value		Financial settlement Inflows (Outflows) March 31, 2020	Value at Risk March 31, 2020	Fair value by year 2027
	March 31, 2020	December 31, 2019			March 31, 2020	December 31, 2019			
Conversion options	140,239	140,239	S	7,221	(168)	(206)	-	10	(168)

f) 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. 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) March 31, 2020	Value at Risk March 31, 2020	Fair value by year 2022
	March 31, 2020	December 31, 2019			March 31, 2020	December 31, 2019			
Call option	137,751,623	137,751,623	B	2.69	125	96	-	11	125

g) 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) March 31, 2020	Value at Risk March 31, 2020	Fair value by year 2027
	March 31, 2020	December 31, 2019			March 31, 2020	December 31, 2019			
Put option	1,105,070,863	1,105,070,863	S	4.04	(360)	(279)	-	163	(360)

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Expressed in millions of Brazilian reais, unless otherwise stated



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)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	March 31, 2020	December 31, 2019	Bought / Sold	Average strike (US\$/ton)	March 31, 2020	December 31, 2019	March 31, 2020	March 31, 2020	2020
Nickel forwards	1,533	1,497	S	12,691	7	9	-	3	7
Copper forwards	881	1,009	S	5,637	2	(1)	-	-	2
Total					9	8	-	3	9

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)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year	
	March 31, 2020	December 31, 2019	Bought / Sold	Average strike (US\$/ton)	March 31, 2020	December 31, 2019	March 31, 2020	March 31, 2020	2020	2021+
Call options	746,667	746,667	S	233	(1)	(3)	-	1	-	-

h) Sensitivity analysis of derivative financial instruments

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

- *Probable*: the probable scenario was defined as the fair value of the derivative instruments as at March 31, 2020
- *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	(2,626)	(6,101)	(9,577)
	US\$ interest rate inside Brazil decrease	(2,626)	(2,838)	(3,062)
	Brazilian interest rate increase	(2,626)	(2,809)	(3,002)
Protected item: R\$ denominated liabilities	R\$ depreciation	n.a.	-	-
TJLP vs. US\$ fixed rate swap	R\$ depreciation	(964)	(1,749)	(2,533)
	US\$ interest rate inside Brazil decrease	(964)	(992)	(1,022)
	Brazilian interest rate increase	(964)	(1,036)	(1,101)
	TJLP interest rate decrease	(964)	(1,031)	(1,098)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
R\$ fixed rate vs. US\$ fixed rate swap	R\$ depreciation	(592)	(1,293)	(1,995)
	US\$ interest rate inside Brazil decrease	(592)	(607)	(623)
	Brazilian interest rate increase	(592)	(633)	(672)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
IPCA vs. US\$ fixed rate swap	R\$ depreciation	(916)	(1,840)	(2,765)
	US\$ interest rate inside Brazil decrease	(916)	(963)	(1,013)
	Brazilian interest rate increase	(916)	(1,027)	(1,135)
	IPCA index decrease	(916)	(973)	(1,029)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
IPCA vs. CDI swap	Brazilian interest rate increase	418	396	374
	IPCA index decrease	418	407	395
Protected item: R\$ denominated debt linked to IPCA	IPCA index decrease	n.a.	(407)	(395)
EUR fixed rate vs. US\$ fixed rate swap	EUR depreciation	(325)	(1,124)	(1,923)
	Euribor increase	(325)	(326)	(326)
	US\$ Libor decrease	(325)	(326)	(348)
Protected item: EUR denominated debt	EUR depreciation	n.a.	1,124	1,923
US\$ floating rate vs. US\$ fixed rate swap	US\$ Libor decrease	-	(3)	(6)
	Protected item: Libor US\$ indexed debt	US\$ Libor decrease	n.a.	3
NDF BRL/USD	R\$ depreciation	(40)	(218)	(396)
	US\$ interest rate inside Brazil decrease	(40)	(49)	(59)
	Brazilian interest rate increase	(40)	(79)	(119)
Protected item: R\$ denominated liabilities	R\$ depreciation	n.a.	-	-

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Instrument	Instrument's main risk events	Probable	Scenario I	Scenario II
Fuel oil protection				
Options	Price input decrease	(1,552)	(2,386)	(3,297)
Protected item: Part of costs linked to bunker oil prices	Price input decrease	n.a.	2,386	3,297
Maritime Freight protection				
Forwards	Freight price decrease	-	(29)	(59)
Protected item: Part of costs linked to maritime freight prices	Freight price decrease	n.a.	29	59
Nickel Revenue Hedging Program				
Options	Nickel price increase	53	22	1
Protected item: Part of nickel future revenues	Nickel price increase	n.a.	(22)	(1)
Palladium Revenue Hedging Program				
Options	Palladium price increase	(10)	(92)	(174)
Protected item: Part of palladium future revenues	Palladium price increase	n.a.	2	174
Conversion options - VLI				
	VLI stock value increase	(168)	(273)	(415)
Option - SPCs Casa dos Ventos				
	SPCs Casa dos Ventos stock value decrease	125	56	13
Instrument				
	Main risks	Probable	Scenario I	Scenario II
Embedded derivatives - Raw material purchase (nickel)	Nickel price increase	7	(17)	(41)
Embedded derivatives - Raw material purchase (copper)	Copper price increase	2	(4)	(10)
Embedded derivatives - Gas purchase	Pellet price increase	(1)	(2)	(6)
Embedded derivatives - Guaranteed minimum return (VLI)	VLI stock value decrease	(360)	(1,387)	(2,414)

i) 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
ABN Amro	A1	A
Agricultural Bank of China	A1	A
ANZ Australia and New Zealand Banking	Aa3	AA-
Banco ABC	Ba3	BB-
Banco Bradesco	Ba3	BB-
Banco do Brasil	Ba3	BB-
Banco do Nordeste do Brasil SA	Ba3	BB-
Banco Itaú Unibanco	Ba3	BB-
Bank Mandiri	Baa2	BBB-
Banco Santander	A2	A
Banco Votorantim	Ba3	BB-
Bancolombia	Baa2	BB+
Bank of America	A2	A-
Bank of China	A1	A
Bank of Montreal	Aa2	A+
Bank of Nova Scotia	A2	A+
Bank of Shanghai	Baa2	-
Bank Rakyat Indonesia (BRI)	Baa2	BBB-
Banpara	-	BB-
Barclays	Baa2	BBB
BBVA Banco Bilbao Vizcaya Argentaria	A3	A-
BNP Paribas	Aa3	A+
BTG Pactual	Ba3	BB-
Caixa Econômica Federal	Ba3	BB-
Calyon	Aa3	A+
China Construction Bank	A1	A
CIBC Canadian Imperial Bank	Aa2	A+
CIMB Bank	Baa1	A-
Citigroup	A3	BBB+
Credit Suisse	Baa2	BBB+

Long term ratings by counterparty	Moody's	S&P
Deutsche Bank	A3	BBB+
Goldman Sachs	A3	BBB+
HSBC	A2	A
Industrial and Commercial Bank of China	A1	A
ING	Baa1	BBB
Intesa Sanpaolo Spa	Baa1	BBB
JP Morgan Chase & Co	A2	A-
Macquarie Group Ltd	A3	BBB+
Mega International Commercial Bank	A1	A
Millenium BIM	A1	A-
Bank of Tokyo Mitsubishi UFJ	A1	A-
Mitsui & Co	A1	A-
Mizuho Financial	A1	A-
Morgan Stanley	A3	BBB+
Muscat Bank	Ba3	BB-
National Australia Bank	Aa3	AA-
National Bank of Canada	Aa3	A
National Bank of Oman	Ba3	-
Natixis	A1	A+
Rabobank	Aa3	A+
Royal Bank of Canada	Aa2	AA-
Banco Safra	Ba3	BB-
Societe Generale	A1	A
Standard Bank Group	Ba2	-
Standard Chartered	A2	BBB+
Sumitomo Mitsui Financial	A1	A-
Toronto Dominion Bank	Aa3	AA-
UBS	Aa3	A-
Unicredit	Baa1	BBB
United Overseas Bank	Aa1	AA-