



Financial Statements

December 31, 2020

BRGAAP in R\$ (English)

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

Independent auditor's report on the parent company and consolidated financial statements

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

Opinion

We have audited the accompanying parent company financial statements of Vale S.A. (the "Company"), which comprise the statement of financial position as at December 31, 2020 and the income statement, statements of comprehensive income, changes in equity and cash flows for the year then ended, as well as the accompanying consolidated financial statements of Vale S.A. and its subsidiaries ("Consolidated"), which comprise the consolidated statement of financial position as at December 31, 2020 and the consolidated income statement, statements of comprehensive income, changes in equity and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

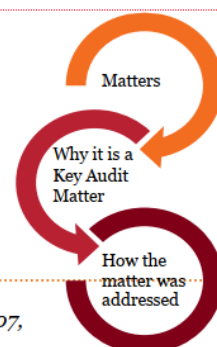
In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Vale S.A. and of Vale S.A. and its subsidiaries as at December 31, 2020, and the financial performance and the cash flows, as well as the consolidated financial performance and the consolidated cash flows for the year then ended, in accordance with accounting practices adopted in Brazil and with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

Basis for opinion

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

Key Audit Matters

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



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Vale S.A.

Our audit was planned and performed considering the operations and transactions of the Company and its subsidiaries in 2020. In this context, the Key Audit Matters, as well as our audit approach, remained substantially consistent with those of the previous year.

Why it is a Key Audit Matter	How the matter was addressed in the audit
Brumadinho's dam failure (Note 23) <p>On January 25, 2019, Dam I failed at the Corrêgo do Feijão mine, which belongs to the Paraopeba Complex in the Southern System, located in Brumadinho, Minas Gerais, Brazil ("Brumadinho Dam").</p> <p>The Company incurred in expenses and recorded provisions, related to (i) the Judicial Settlement for Integral Reparation (Global Settlement); (ii) individual indemnities and other commitments to indemnify affected people and recover the impacted areas ; and (iii) de-characterization of all its tailings dams built using the same method as the Brumadinho Dam (upstream method).</p> <p>The measurement and subsequent reviews of these provisions involved critical judgments by management in determining the assumptions and bases used, which also had the support of specialists hired for this purpose. Variations in the main assumptions used, such as (i) volume of the waste to be removed; (ii) location availability for the tailings disposal; (iii) acceptance by the authorities of the proposed engineering methods and solution; and (iv) amounts related to indemnity payments to people affected by the dam failure, among others, may result in a significant change in the amounts recorded as at December 31, 2020.</p> <p>Additionally, given the nature and uncertainties regarding the measurement of the accounting impacts inherent to this type of event, the amounts recognized and disclosed should be reviewed and may be significantly adjusted in future periods, as new facts and circumstances become known.</p> <p>Accordingly, due to these aspects, this matter was considered an area of focus in our audit.</p>	<p>Our audit procedures included, among others, the understanding and assessment of the significant internal controls established by the Company's management related to the recording and monitoring of the expenses incurred and provisions made and corresponding disclosures in the financial statements resulting from this event.</p> <p>We discussed with management about the main terms and agreements signed and read other technical documents used by the Company's management to justify the expenses and provisions made.</p> <p>We obtained, on a sample basis, the supporting documentation of the expenses incurred and evaluated the reasonableness of the calculation models and the significant assumptions used, with the support of our engineering specialists.</p> <p>As a result of the procedures described above, we consider that the measurement model and the assumptions adopted by the Company's management to calculate and record these provisions are reasonable, and that the respective disclosures in the financial statements are consistent with the information obtained during our audit.</p>

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Why it is a Key Audit Matter	How the matter was addressed in the audit
<p>Impairment of assets (Note 18)</p>	
<p>The Company is required to perform, at least once a year, the impairment test of the goodwill based on expected future returns allocated in the ferrous mineral and nickel segments, and also assess the impairment indicators for the other non-financial assets, including investments in subsidiaries. As part of this assessment, the Company determines an estimate of future cash flows for each Cash-generating unit ("CGU"), considering different factors and internal and external assumptions.</p> <p>According to the reasons described in the corresponding note to the financial statements, during 2020, the Company carried out impairment tests for goodwill recorded in the ferrous mineral segment and in the base metals segment and did not identify the need for provisions.</p> <p>To assess the recoverable value of these non-financial assets, the Company determines cash flows based on budgets approved by management and projected internal and external information, which are susceptible to the following significant assumptions: (i) discount rate; and (ii) long-term future metal prices. These assumptions may significantly change in relation to those projected by the Company due to adverse economic conditions with a consequent impact on the financial statements.</p> <p>In addition, the Company carried out an impairment test for assets with triggering events and recognized losses due to the reduction of the recoverable value of the asset related to the New Caledonia operation (nickel). The measurement of this impairment loss was based on the fair value resulting from the sale negotiation of this operation, in accordance with the binding offer signed.</p> <p>Accordingly, due to these aspects, this matter was considered an area of focus in our audit.</p>	<p>Our audit procedures included, among others, the evaluation of the design and test of the effectiveness of the significant internal controls related to the process of determining the recoverable value of non-financial assets.</p> <p>We compared the information used in the impairment tests with the Budget Plan approved by the Company's Board of Directors and tested the mathematical accuracy of the calculations, as well as discussed the main assumptions used in the cash flow projections. In addition, we read relevant documents related to the sale negotiations.</p> <p>We also evaluated, with the support of our valuation experts, the reasonableness of the calculation models and the significant assumptions used, including the discount rate, as well as conducting a sensitivity analysis on these assumptions used by the Company.</p> <p>Finally, we read the disclosures made in the notes to the financial statements.</p> <p>As a result of the procedures described above, we consider that the measurement model and the assumptions adopted by the Company's management to assess the impairment of the non-financial assets are reasonable, and that the respective disclosures in the financial statements are consistent with the information obtained during our work.</p>



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Why it is a Key Audit Matter	How the matter was addressed in the audit
Provision for tax contingencies (Note 26)	
<p>The Company and its subsidiaries have relevant tax matters under discussion at several procedural levels, for which, based on the opinion of their internal and external legal advisors, a provision for tax contingencies in the amount of R\$ 2,520 million was recorded.</p>	<p>Our audit procedures included, among others, the evaluation of the design and operating effectiveness of the significant internal controls related to the process of determining tax contingencies, as well as the assessment of significant information technology systems that support this process.</p>
<p>The definition of the amount of the provision and the amount of the contingent liabilities depends on critical judgments by management regarding the settlement term and amount.</p>	<p>For tax positions related to income taxes, we met with management to discuss and evaluate their conclusions on the impacts of initial adoption of Interpretation ICPC 22/IFRIC 23, as well as to understand the internal controls related to the identification and monitoring of uncertainty tax treatments and measurement and recognition of the obligation, when applicable.</p>
<p>In addition, considering the significance of the amounts involved, any changes in estimates or assumptions, which influence the determination of the loss estimate, could have significant impacts on the Company's financial statements.</p>	<p>We requested and obtained confirmation from all the legal advisors, internal and external, who are responsible for the Company's tax claims, confirming amounts and estimates used by the Company's management.</p>
<p>Accordingly, this matter was considered an area of focus in our audit.</p>	<p>Also, when applicable, for the most significant tax proceedings, we obtained the opinions of other tax advisors, aiming to assess the reasonableness of the estimates determined by the lawyers responsible for the respective claims, and analyze the arguments and case law adopted by the Company's legal advisors.</p>
	<p>We consider that the criteria and assumptions adopted by management for determining provisions, as well as disclosures, are consistent with the assessment of legal advisors.</p>



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Other matters

Statements of Value Added

The parent company and consolidated Statements of Value Added for the year ended December 31, 2020, prepared under the responsibility of the Company's management and presented as supplementary information for IFRS purposes, were submitted to audit procedures performed in conjunction with the audit of the Company's financial statements. For the purposes of forming our opinion, we evaluated whether these statements are reconciled with the financial statements and accounting records, as applicable, and if their form and content are in accordance with the criteria defined in Technical Pronouncement CPC 09 - "Statement of Value Added". In our opinion, these Statements of Value Added have been properly prepared in all material respects, in accordance with the criteria established in the Technical Pronouncement, and are consistent with the parent company and consolidated financial statements taken as a whole.

Audit of information corresponding to the year ended December 31, 2018

The audit of the financial statements for the year ended December 31, 2018 was conducted by other independent auditors, who issued an unqualified audit report dated March 27, 2019, with an emphasis of matter paragraph related to a subsequent event resulting from the Brumadinho's dam failure occurred on January 25, 2019.

Other information accompanying the parent company and consolidated financial statements and the auditor's report

The Company's management is responsible for the other information that comprises the Management Report.

Our opinion on the parent company and consolidated financial statements does not cover the Management Report, and we do not express any form of audit conclusion thereon.

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

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

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



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

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

Auditor's responsibilities for the audit of the parent company and consolidated financial statements

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

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

- Identify and assess the risks of material misstatement of the parent company and consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control of the Company and its subsidiaries.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the ability of the Company to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the parent company and consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the parent company and consolidated financial statements, including the disclosures, and whether these financial statements represent the underlying transactions and events in a manner that achieves fair presentation.



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

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

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

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

Rio de Janeiro, February 25, 2021

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	
		2020	2019	2018	Year ended December 31,	
		2020	2019	2018	2020	2019
Net operating revenue	4(d)	208,529	148,640	134,483	127,395	86,428
Cost of goods sold and services rendered	5(a)	(98,567)	(83,836)	(81,201)	(44,868)	(37,509)
Gross profit		109,962	64,804	53,282	82,527	48,919
Operating expenses						
Selling and administrative expenses	5(b)	(2,857)	(1,924)	(1,917)	(1,564)	(934)
Research and evaluation expenses		(2,293)	(1,765)	(1,376)	(1,005)	(877)
Pre-operating and operational stoppage	23	(4,517)	(4,559)	(984)	(4,081)	(4,389)
Equity results and others results from subsidiaries	14	-	-	-	10,988	(6,670)
Brumadinho event	23	(27,016)	(28,818)	-	(27,016)	(28,818)
Other operating expenses, net	5(c)	(3,956)	(2,052)	(1,613)	(2,384)	(1,770)
		(40,639)	(39,118)	(5,890)	(25,062)	(43,458)
Impairment and disposals of non-current assets	18	(11,819)	(20,762)	(3,523)	(346)	(1,204)
Operating income		57,504	4,924	43,869	57,119	4,257
Financial income	6	1,922	2,092	1,549	708	485
Financial expenses	6	(17,141)	(14,738)	(8,274)	(16,748)	(13,553)
Other financial items, net	6	(8,921)	(800)	(11,333)	(8,191)	(422)
Equity results and other results in associates and joint ventures	14 and 24	(5,436)	(2,684)	(693)	(5,436)	(2,684)
Income (loss) before income taxes		27,928	(11,206)	25,118	27,452	(11,917)
Income taxes						
	8					
Current tax		(17,828)	(5,985)	(2,806)	(14,739)	(4,705)
Deferred tax		14,803	8,494	3,772	14,000	9,950
		(3,025)	2,509	966	(739)	5,245
Net income (loss) from continuing operations		24,903	(8,697)	26,084	26,713	(6,672)
Net income (loss) attributable to noncontrolling interests		(1,810)	(2,025)	117	-	-
Net income (loss) from continuing operations attributable to Vale's stockholders		26,713	(6,672)	25,967	26,713	(6,672)
Discontinued operations						
Loss from discontinued operations		-	-	(310)	-	-
Loss from discontinued operations attributable to Vale's stockholders		-	-	(310)	-	-
Net income (loss)		24,903	(8,697)	25,774	26,713	(6,672)
Net income (loss) attributable to noncontrolling interests		(1,810)	(2,025)	117	-	-
Net income (loss) attributable to Vale's stockholders		26,713	(6,672)	25,657	26,713	(6,672)
Earnings (loss) per share attributable to Vale's stockholders:						
Basic and diluted earnings (loss) per share:	9					
Common share (R\$)		5.21	(1.30)	4.95	5.21	(1.30)

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

Statement of Comprehensive Income

In millions of Brazilian reais

	Consolidated			Parent company	
	Year ended December 31,			2020	2019
	2020	2019	2018	2020	2019
Net income (loss)	24,903	(8,697)	25,774	26,713	(6,672)
Other comprehensive income (loss):					
Items that will not be subsequently reclassified to income statement					
Retirement benefit obligations (note 27)	(436)	(486)	142	(528)	(414)
Fair value adjustment to investment in equity securities (note 19)	641	(735)	275	583	(596)
Equity results (note 14)	-	-	-	150	(211)
Transfer to reserve	-	-	(51)	-	-
Total items that will not be subsequently reclassified to income statement, net of tax	205	(1,221)	366	205	(1,221)
Items that may be subsequently reclassified to income statement					
Translation adjustments	18,607	4,812	14,541	20,555	4,626
Net investments hedge (note 19)	(2,732)	(324)	(1,958)	(2,732)	(324)
Cash flow hedge (note 19)	(631)	427	-	-	-
Equity results (note 14)	-	-	-	(631)	427
Transfer of realized results to net income	702	-	(257)	-	-
Total of items that may be subsequently reclassified to income statement, net of tax	15,946	4,915	12,326	17,192	4,729
Total comprehensive income (loss)	41,054	(5,003)	38,466	44,110	(3,164)
Comprehensive income (loss) attributable to noncontrolling interests	(3,056)	(1,839)	269		
Comprehensive income (loss) attributable to Vale's stockholders	44,110	(3,164)	38,197		
From continuing operations	44,110	(3,164)	38,181		
From discontinued operations	-	-	16		
	44,110	(3,164)	38,197		

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

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

Statement of Cash Flows

In millions of Brazilian reais

	Consolidated			Parent company	
	Year ended December 31,				
	2020	2019	2018	2020	2019
Cash flow from operations (a)	89,537	61,224	56,811	49,561	46,516
Interest on loans and borrowings paid (note 22)	(3,911)	(4,760)	(4,023)	(5,400)	(4,845)
Derivatives received (paid), net (note 19)	(280)	(1,287)	(250)	(876)	(1,485)
Interest on participative stockholders' debentures paid (note 21)	(1,000)	(776)	(529)	(1,000)	(776)
Income taxes (including settlement program)	(9,138)	(7,119)	(4,089)	(7,663)	(5,557)
Net cash provided by operating activities	75,208	47,282	47,920	34,622	33,853
Cash flow from investing activities:					
Capital expenditures	(22,726)	(14,774)	(13,899)	(11,374)	(7,572)
Additions to investments (note 14)	(657)	(287)	(79)	(2,243)	(2,852)
Acquisition of subsidiary, net of cash (note 15)	-	(3,513)	-	-	(3,513)
Proceeds from disposal of assets and investments	2,229	546	4,959	1,416	90
Dividends received from associates and joint ventures (note 14)	904	1,423	922	2,973	3,901
Judicial deposits and restricted cash related to Brumadinho event (note 23)	(50)	(6,169)	-	(50)	(6,169)
Short-term investment	3,318	(3,408)	(180)	3,234	(3,502)
Investment fund applications	(4,565)	-	-	(2,203)	-
Other investments activities, net (i)	(2,687)	(358)	7,353	915	(5,505)
Net cash used in investing activities	(24,234)	(26,540)	(924)	(7,332)	(25,122)
Cash flow from financing activities:					
Loans and borrowings from third-parties (note 22)	34,023	11,886	4,584	44	2,894
Payments of loans and borrowings from third-parties (note 22)	(33,207)	(21,874)	(28,149)	(3,534)	(6,509)
Payments of leasing (note 22)	(1,129)	(891)	-	(339)	(354)
Dividends and interest on capital paid to stockholders (note 28)	(18,637)	-	(12,415)	(18,637)	-
Dividends and interest on capital paid to noncontrolling interest	(72)	(695)	(635)	-	-
Share buyback program	-	-	(3,858)	-	-
Transactions with noncontrolling stockholders (note 15)	981	(3,310)	(56)	-	-
Net cash used in financing activities	(18,041)	(14,884)	(40,529)	(22,466)	(3,969)
Net cash used in discontinued operations	-	-	(157)	-	-
Increase in cash and cash equivalents	32,933	5,858	6,310	4,824	4,762
Cash and cash equivalents in the beginning of the year	29,627	22,413	14,318	9,597	4,835
Effect of exchange rate changes on cash and cash equivalents	7,605	1,356	2,170	-	-
Effects of disposals of subsidiaries, net of cash and cash equivalents	(79)	-	(385)	188	-
Cash and cash equivalents at end of the year	70,086	29,627	22,413	14,609	9,597
Non-cash transactions:					
Additions to property, plant and equipment - capitalized loans and borrowing costs	345	551	704	345	549
Cash flow from operating activities:					
Income (loss) before income taxes	27,928	(11,206)	25,118	27,452	(11,917)
Adjusted for:					
Provisions related to Brumadinho event (note 23)	24,430	25,447	-	24,430	25,447
Equity results and others results from subsidiaries (note 14)	-	-	-	(10,988)	6,670
Equity results and other results in associates and joint ventures (note 14)	5,436	2,684	693	5,436	2,684
Impairment and disposal of non-current assets (note 18)	11,819	20,762	3,523	346	1,204
Depreciation, depletion and amortization	16,679	14,751	12,240	8,069	7,752
Financial results, net (note 6)	24,140	13,446	18,058	24,231	13,490
Changes in assets and liabilities:					
Accounts receivable	(14,136)	(41)	(1,012)	(27,976)	3,743
Inventories	(724)	669	(2,994)	(779)	(536)
Suppliers and contractors (ii)	(932)	2,836	(1,414)	906	3,397
Provision - Payroll, related charges and other remunerations	1,447	(318)	349	1,110	131
Proceeds from streaming transactions (note 7)	-	-	2,603	-	-
Payments related to Brumadinho event (note 23) (iii)	(4,169)	(3,982)	-	(4,169)	(3,982)
Other assets and liabilities, net	(2,381)	(3,824)	(353)	1,493	(1,567)
Cash flow from operations (a)	89,537	61,224	56,811	49,561	46,516

(i) Includes loans and advances from/to related parties. For the year ended December 31, 2018, includes proceeds received from Nacala project finance (note 29) in the amount of R\$8,434.

(ii) Includes variable lease payments.

(iii) In addition, the Company has incurred in expenses in the amount of R\$2,586 and R\$2,903 for the year ended December 31, 2020 and 2019, respectively. Therefore, in 2020, the Company has disbursed a total amount of R\$6,755 in relation to the Brumadinho event (2019: R\$6,885).

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

Statement of Financial Position

In millions of Brazilian reais

		Consolidated		Parent company	
		December 31,	December 31,	December 31,	December 31,
	Notes	2020	2019	2020	2019
Assets					
Current assets					
Cash and cash equivalents	22	70,086	29,627	14,609	9,597
Short-term investments	22	4,006	3,329	1,811	3,309
Accounts receivable	10	25,944	10,195	46,559	16,599
Other financial assets	13	1,707	2,449	37	1,140
Inventories	11	21,103	17,228	6,142	5,310
Recoverable taxes	12	2,646	3,719	1,036	1,577
Others		1,313	2,151	2,199	1,569
		126,805	68,698	72,393	39,101
Non-current assets					
Judicial deposits	26(c)	6,591	12,629	6,265	12,242
Other financial assets	13	9,271	10,724	3,838	3,954
Recoverable taxes	12	5,670	4,853	2,244	1,471
Deferred income taxes	8(a)	53,711	37,151	42,760	28,770
Others		3,380	2,348	725	955
		78,623	67,705	55,832	47,392
Investments	14	10,557	11,278	181,319	144,594
Intangibles	16	48,309	34,257	28,243	16,271
Property, plant and equipment	17	213,836	187,733	111,338	105,875
		351,325	300,973	376,732	314,132
Total assets		478,130	369,671	449,125	353,233
Liabilities					
Current liabilities					
Suppliers and contractors		17,496	16,556	11,601	10,765
Loans, borrowings and leases	22	5,901	5,805	3,804	4,323
Other financial liabilities	13	9,906	5,658	4,747	6,678
Taxes payable		4,950	2,065	3,509	1,062
Settlement program ("REFIS")	8(d)	1,769	1,737	1,733	1,702
Liabilities related to associates and joint ventures	24	4,554	2,079	4,554	2,079
Provisions	25	9,498	4,956	4,606	3,210
Liabilities related to Brumadinho	23	9,925	6,319	9,925	6,319
De-characterization of dams	23	1,981	1,247	1,981	1,247
Dividends payable	28	6,342	6,287	6,342	6,287
Others		3,516	3,097	4,173	3,227
		75,838	55,806	56,975	46,899
Non-current liabilities					
Loans, borrowings and leases	22	72,187	54,038	21,646	20,546
Participative stockholders' debentures	21	17,737	10,416	17,737	10,416
Other financial liabilities	13	23,967	7,206	107,718	65,949
Settlement program ("REFIS")	8(d)	12,493	14,012	12,245	13,733
Deferred income taxes	8(a)	9,198	7,585	-	-
Provisions	25	43,829	34,233	13,016	11,368
Liabilities related to Brumadinho	23	13,849	5,703	13,849	5,703
De-characterization of dams	23	9,916	8,787	9,916	8,787
Liabilities related to associates and joint ventures	24	6,228	4,774	6,228	4,774
Streaming transactions	7	10,419	8,313	-	-
Others		1,483	1,649	4,010	3,578
		221,306	156,716	206,365	144,854
Total liabilities		297,144	212,522	263,340	191,753
Stockholders' equity					
Equity attributable to Vale's stockholders	28	185,785	161,480	185,785	161,480
Equity attributable to noncontrolling interests		(4,799)	(4,331)	-	-
Total stockholders' equity		180,986	157,149	185,785	161,480
Total liabilities and stockholders' equity		478,130	369,671	449,125	353,233

The accompanying notes are an integral part of these 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, 2017	77,300	3,634	24,539	(2,746)	(6,525)	47,556	-	143,758	4,348	148,106
Net income	-	-	-	-	-	-	25,657	25,657	117	25,774
Other comprehensive income	-	-	-	-	613	11,927	-	12,540	152	12,692
Dividends and interest on capital of Vale's stockholders	-	-	-	-	-	-	(7,694)	(7,694)	-	(7,694)
Dividends of noncontrolling interest	-	-	-	-	-	-	-	-	(629)	(629)
Acquisitions and disposal of noncontrolling interest	-	-	-	-	-	-	-	-	(757)	(757)
Capitalization of noncontrolling interest advances	-	-	-	-	-	-	-	-	49	49
Appropriation to undistributed retained earnings	-	-	17,963	-	-	-	(17,963)	-	-	-
Share buyback program	-	-	-	(3,858)	-	-	-	(3,858)	-	(3,858)
Balance at December 31, 2018	77,300	3,634	42,502	(6,604)	(5,912)	59,483	-	170,403	3,280	173,683
Loss	-	-	-	-	-	-	(6,672)	(6,672)	(2,025)	(8,697)
Other comprehensive income	-	-	-	-	(1,171)	4,679	-	3,508	186	3,694
Interest on capital of Vale's stockholders	-	-	(7,253)	-	-	-	-	(7,253)	-	(7,253)
Dividends of noncontrolling interest	-	-	-	-	-	-	-	-	(337)	(337)
Acquisitions and disposal of noncontrolling interest	-	-	-	-	1,410	-	-	1,410	(5,549)	(4,139)
Capitalization of noncontrolling interest advances	-	-	-	-	-	-	-	-	114	114
Allocation of loss	-	-	(6,672)	-	-	-	6,672	-	-	-
Treasury shares utilized in the year (note 28)	-	-	-	84	-	-	-	84	-	84
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)	-	-	-	-	-	-	26,713	26,713	(1,810)	24,903
Other comprehensive income	-	-	-	-	(453)	17,850	-	17,397	(1,246)	16,151
Dividends and interest on capital of Vale's stockholders	-	-	(12,350)	-	-	-	(6,342)	(18,692)	-	(18,692)
Dividends of noncontrolling interest	-	-	-	-	-	-	-	-	(42)	(42)
Acquisitions and disposal of noncontrolling interest	-	-	-	-	(1,181)	-	-	(1,181)	2,559	1,378
Capitalization of noncontrolling interest advances	-	-	-	-	-	-	-	-	71	71
Appropriation to undistributed retained earnings	-	-	20,371	-	-	-	(20,371)	-	-	-
Treasury shares utilized in the year (note 28)	-	-	-	68	-	-	-	68	-	68
Balance at December 31, 2020	77,300	3,634	36,598	(6,452)	(7,307)	82,012	-	185,785	(4,799)	180,986

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

Value Added Statement

In millions of Brazilian Reals

	Consolidated		Parent company	
			Year ended December 31,	
	2020	2019	2020	2019
Generation of value added				
Gross revenue				
Revenue from products and services	210,108	149,982	128,818	87,588
Revenue from the construction of own assets	6,064	6,584	2,396	3,448
Other revenues	2,101	725	1,369	436
Less:				
Cost of products, goods and services sold	(28,250)	(22,780)	(14,699)	(10,757)
Material, energy, third-party services and other	(40,000)	(36,475)	(11,406)	(11,201)
Impairment of non-current assets and others results	(11,819)	(20,762)	(346)	(1,204)
Brumadinho event	(27,016)	(28,818)	(27,016)	(28,818)
Other costs and expenses	(18,398)	(11,460)	(9,169)	(7,574)
Gross value added	92,790	36,996	69,947	31,918
Depreciation, amortization and depletion	(16,679)	(14,751)	(8,069)	(7,752)
Net value added	76,111	22,245	61,878	24,166
Received from third parties				
Equity results from entities	(5,436)	(2,684)	5,552	(9,354)
Financial income	6,201	3,505	4,482	2,084
Total value added to be distributed	76,876	23,066	71,912	16,896
Personnel and charges	9,336	8,183	4,581	3,430
Taxes and contributions	12,042	4,540	8,984	914
Interest (net derivatives and monetary and exchange rate variation)	29,979	16,702	28,448	15,350
Other remunerations of third party funds	616	2,338	3,186	3,874
Reinvested net income (absorbed loss)	26,713	(6,672)	26,713	(6,672)
Loss attributable to noncontrolling interest	(1,810)	(2,025)	-	-
Distributed value added	76,876	23,066	71,912	16,896

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

1. Corporate information

Vale S.A. and its subsidiaries ("Vale" or the "Company") are iron ore and iron ore pellets producers, which are key raw materials for steelmaking, and nickel producers, which is used to produce stainless steel and metal alloys employed in the production process of several products. The Company also produces copper, metallurgical and thermal coal, manganese ore and, 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 financial statements

a) Statement of compliance

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

The presentation of the parent company and consolidated statements of value added is required by the Brazilian corporate legislation and the accounting practices adopted in Brazil for listed companies, while it is not required by IFRS. Therefore, under the IFRS, the presentation of such statements is considered supplementary information, and not part of the set of financial statements. The Statement of Value Added was prepared in accordance with the criteria defined in Technical Pronouncement CPC 09 - "Statement of Value Added".

b) Basis of presentation

The financial statements have been prepared on a historical cost basis as adjusted to reflect: (i) the fair value of financial instruments measured at fair value through income statement or at fair value through the statement of comprehensive income; and (ii) impairment of assets.

These financial statements were authorized for issue by the Board of Directors on February 25, 2021.

c) Functional currency and presentation currency

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

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

	Closing rate			Average rate for the year ended		
	2020	2019	2018	2020	2019	2018
US Dollar ("US\$")	5.1967	4.0307	3.8748	5.1578	3.9461	3.6558
Canadian dollar ("CAD")	4.0771	3.1034	2.8451	3.8480	2.9746	2.8190
Euro ("EUR" or "€")	6.3779	4.5305	4.4390	5.8989	4.4159	4.3094

d) Significant accounting policies

Significant accounting policies used in the preparation of these financial statements are disclosed in the respective notes and have been consistently applied to all years presented, except for the adoption of the IFRS 16/CPC 06 (R2) - Leases from January 1, 2019 using the retrospective approach with the cumulative effect recognized as at the date of initial application. Accordingly, the comparative information has not been restated and 2018 financial information continues to be presented under IAS 17/CPC 06 (R1) and related interpretations. As disclosed in note 8(e), the Company also adopted IFRIC 23 – Uncertainty over Income Tax Treatments from January 1, 2019.

In addition, certain new accounting standards and interpretations have been published that are not mandatory for December 31, 2020 reporting periods and have not been early adopted by the Company. These standards are not expected to have a material impact on the entity in future reporting periods.

e) Critical accounting estimates and judgments

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

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

Note	Significant estimates and judgments
7	Deferred revenue
8	Deferred income taxes
14	Consolidation
17	Mineral reserves and mine useful life
18	Impairment of non-current assets
19	Fair values estimate
23	Brumadinho dam failure
24	Liabilities related to associates and joint ventures
25	Asset retirement obligation
26	Litigation
27	Employee post-retirement obligations

3. Significant events in the current year

a) Main events

The financial position, cash flows and performance of the Company were particularly affected by the following events and transactions during the year ended December 31, 2020:

- In February 2021 (subsequent event), the Company entered into a Judicial Settlement for Integral Reparation ("Global Settlement") with the State of Minas Gerais, the Public Defender of the State of Minas Gerais and the Federal and the State of Minas Gerais Public Prosecutors Offices, to repair the environmental and social damage resulting from the Dam I rupture. Thus, the Company recognized a loss of R\$19,924 in the income statement for the year ended December 31, 2020 (note 23).
- In 2020, as a consequence of the periodic review of the estimates for the de-characterization of the dam structures, the Company recognized R\$1,900 in addition to the provision already recorded. In addition, the Company also identified other structures that met the de-characterization criteria, resulting in an addition of R\$1,275 to the provision (note 23).
- In December 2020, the Company signed the early extension terms for its railways concessions related to Estrada de Ferro Carajás ("EFC") and Estrada de Ferro Vitória a Minas ("EFVM"), for an additional thirty years period, from 2027 to 2057. As a result of the agreement, the Company recognized an intangible asset, which represents its right to use of both EFVM and EFC, and their related concession grants liabilities, in the aggregate amount of R\$12,016 (note 16).
- In 2020, the Company started looking for a potential buyer for Vale Nouvelle-Calédonie S.A.S. ("VNC") and started studying the other options available to exit the operation. Following the negotiations that took place during the year, VNC's assets and liabilities were classified as "held for sale" and measured at fair value, resulting in the recognition of an impairment loss in the amount of R\$2,155. In December 2020, the Company signed a binding put option agreement for the sale of its ownership interest in VNC for an immaterial consideration. The proposed transaction is expected to be concluded in the first quarter of 2021. Under this agreement, the Company has reserved the amount of the commitment to fund VNC in approximately R\$2,573 (US\$500 million) to continue VNC operations, including the commitment to invest in the conversion of the tailings deposition from wet to dry-stacking. Therefore, the Company recognized a loss related to VNC in the amount of R\$4,728 recognized in the income statement as "Impairment and disposals of non-current assets" for the year ended December 31, 2020 (note 18).

- In 2020, the Company tested the recoverability of its loan receivable from Nacala BV. The testing was triggered by the revisions undertaken on the coal volumes that are projected to be transported on the railway, resulting in a loss of R\$4,106, recognized in the income statement as "Impairment and disposals of non-current assets" for the year ended December 31, 2020 (note 18).
- During 2020, Fundação Renova reviewed the assumptions used on the preparation of the estimates incorporated into the mitigation and compensation programs. The periodic review resulted in an addition of R\$5,530 to the provision. In addition, Vale made available R\$845 for Samarco's working capital needs (2019: R\$402). This amount was recognized in the income statement as "Equity results and other results in associates and joint ventures" for the year ended December 31, 2020 (note 24).
- In July 2020, the Board of Directors approved the resumption of the stockholders' remuneration policy and paid the amount of R\$18,637 (note 28).
- In December 2020, the Company was notified by BNDESPar of the full exercise of the option to purchase 8% of VLI shares held by Vale. With the exercise of this option, Vale received R\$1,223 and holds 29.6% of VLI's total shares. This transaction resulted in a gain of R\$885, recognized in the income statement as "Equity results and other results in associates and joint ventures" for the year ended December 31, 2020 (note 15).
- In November 2020, the Company concluded the sale of Biopalma da Amazônia S.A. Reflorestamento Indústria e Comércio ("Biopalma") to Brasil Bio Fuels S.A. As a result of this transaction, a loss of R\$681 was recognized in the income statement as "Impairment and disposals of non-current assets" for the year ended December 31, 2020 (note 18).
- In August 2020, the conditions precedent of the agreement to sell the Company's stake in Henan Longyu were concluded and the Company received R\$843 as part of the consideration for the transaction. This transaction resulted in a gain of R\$598 due to the recycling of the cumulative translation adjustments at closing, which was recognized as "Equity results and other results in associates and joint ventures" in the income statement for the year ended December 31, 2020 (note 15).
- In October 2020, the Company concluded the agreement for the divestiture of PT Vale Indonesia Tbk ("PTVI") and received R\$1.560. The transaction with non-controlling interest resulted in a loss of R\$1.012, which was recognized in the Stockholders' Equity for the year ended December 31, 2020 (note 15).
- In September 2020, the Company decided to shut down its operations at the Simões Filho plant in Bahia, resulting in an impairment loss of R\$412, recognized in the income statement as "Impairment and disposals of non-current assets" for the year ended December 31, 2020 (note 18).
- In July 2020, Vale Overseas Limited issued guaranteed notes due July 2030, in the amount of R\$8,214 (US\$1,500 million) (note 22).
- In October 2020, the Company approved the incorporation of a joint venture to build and operate an expansion project for the Shulangu Port facilities, located in China. Vale's capital contribution to the project is estimated to range from R\$600 to R\$900. The construction of the project, which is expected to take up to three years, will start after both parties obtain the anti-trust and other regulatory approvals in China (note 15).
- On January 20, 2021 (subsequent event), the Company signed a Heads of Agreement ("HoA") with Mitsui & Co., Ltd. ("Mitsui"), allowing both parties to structure Mitsui's exit from the Moatize coal mine ("Vale Moçambique") and the Nacala Logistics Corridor ("NLC"). The HoA determines that Vale will acquire Mitsui's stake in the mine and logistics assets for an immaterial consideration and will undertake the obligation of the Nacala Corridor's Project Finance in full, which has approximately R\$12,992 (US\$2,500 million) outstanding balance at December 31, 2020. In case of closing the transaction, Vale will also control NLC and, therefore, consolidate its assets and liabilities. The parties expect to conclude the transaction in 2021, which is subject to the execution of the definitive agreement and usual precedent conditions. In addition, the Company informed the market its divestiture decision in the coal segment, which may lead to the presentation of this segment as a discontinued operation in future financial statements depending on the Company's assessment (note 15).

b) Coronavirus impact

A significant portion of the Company's revenue derived from sales to customers in Asia and Europe, regions that have had their economic activities affected as a result of the pandemic. The Company also has an extensive logistics and supply chain, including several ports, distribution centers and suppliers that have operations in those affected regions.

The Company has taken several measures to monitor and prevent the effects of COVID-19, including health and safety measures for its employees (such as social distancing and remote working) and actions to secure the supply of materials essential to the Company's production process.

The Company has pledged R\$592 to support humanitarian aid programs in the communities where the Company operates, with special focus on Brazil communities that have been more adversely affected by the pandemic. This amount was used to purchase medical supplies and equipment and were recognized as "Other operating expenses" in the income statement for the year ended December 31, 2020.

At this time, the effects of the pandemic have not caused significant impacts on its operations nor on the fair value of the Company's assets and liabilities. However, unusual significant changes have occurred in the value of financial assets in many markets since the pandemic outbreak. However, if the pandemic continues for an extended period of time or increases in intensity in the regions where the Company operates, the Company's financial conditions or results of operations may be adversely impacted.

Liquidity - As a precautionary measure to increase its cash position and preserve financial flexibility considering the uncertainties resulting from the COVID-19 pandemic, the Company temporary discontinued the nickel hedge program, through the sale of option contracts for the total amount of R\$1,123.

Deferred income tax - On March 31, 2020, the government of Indonesia issued a regulation ("PERPPU-1") to manage the economic impact of the global COVID-19 pandemic, which affects Indonesia's tax policies. The 25% income tax rate was reduced to 22% in fiscal years 2020 and 2021 and will later be reduced to 20% as of fiscal year 2022. Therefore, the Company has measured the deferred income tax of PT Vale Indonesia Tbk ("PTVI"), considering the effective promulgation of the new income tax rate recognizing an income tax gain of R\$393 in the year ended December 31, 2020.

4. Information by business segment and by geographic area

The Company operated the following reportable segments during this year: 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).

The Company has created the Special Recovery and Development Board, which is in-charge of those measures related to the Brumadinho dam rupture (note 23) that reports to the CEO. The costs related to the Brumadinho event are not directly linked to the Company's operating activities and, therefore, are under "Other", as well as, revenues and costs of other products, services, research and development, investments in joint ventures and associates of other businesses and unallocated corporate expenses.

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

The main activities of the operating segments are as follows:

Ferrous minerals – Comprise of the production and extraction of iron ore, iron ore pellets, manganese, other ferrous products and its logistic services.

Base metals - Include the production and extraction of nickel and its by-products (copper, gold, silver, cobalt, precious metals and others) and copper, as well as its by-products (gold and silver).

Coal – Comprise of the production and extraction of metallurgical and thermal coal and its logistic services.

Fertilizers (Discontinued operations) - Included the production of potash, phosphate, nitrogen and other fertilizer products, which was discontinued in 2018 (note 15).

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



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
							Year ended December 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	142,478	(42,391)	(958)	(663)	(2,708)	117	95,875
Iron ore pellets	22,043	(8,562)	52	(25)	(390)	608	13,726
Ferroalloys and manganese	1,177	(915)	-	(11)	(159)	-	92
Other ferrous products and services	1,667	(1,301)	14	(8)	-	8	380
	167,365	(53,169)	(892)	(707)	(3,257)	733	110,073
Base metals							
Nickel and other products	25,877	(16,713)	(134)	(248)	(156)	-	8,626
Copper	11,356	(4,087)	(35)	(351)	(4)	-	6,879
	37,233	(20,800)	(169)	(599)	(160)	-	15,505
Coal	2,431	(7,536)	(83)	(142)	-	434	(4,896)
Brumadinho event	-	-	(27,016)	-	-	-	(27,016)
COVID-19	-	-	(592)	-	-	-	(592)
Others	1,500	(1,675)	(4,826)	(844)	(60)	171	(5,734)
Total	208,529	(83,180)	(33,578)	(2,292)	(3,477)	1,338	87,340

							Consolidated
							Year ended December 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	92,504	(34,843)	(1,281)	(491)	(2,963)	120	53,046
Iron ore pellets	23,446	(10,515)	(81)	(65)	(282)	1,036	13,539
Ferroalloys and manganese	1,112	(869)	(32)	(9)	(4)	-	198
Other ferrous products and services	1,705	(1,278)	1	(4)	-	37	461
	118,767	(47,505)	(1,393)	(569)	(3,249)	1,193	67,244
Base metals							
Nickel and other products	16,845	(11,305)	(297)	(174)	(111)	-	4,958
Copper	7,506	(3,569)	(22)	(173)	(81)	-	3,661
	24,351	(14,874)	(319)	(347)	(192)	-	8,619
Coal	4,005	(6,462)	3	(121)	-	447	(2,128)
Brumadinho event	-	-	(28,818)	-	-	-	(28,818)
Others	1,517	(1,541)	(2,045)	(728)	(43)	230	(2,610)
Total	148,640	(70,382)	(32,572)	(1,765)	(3,484)	1,870	42,307

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Consolidated						
	Year ended December 31, 2018						
	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	75,056	(33,356)	(281)	(403)	(418)	108	40,706
Iron ore pellets	24,389	(12,427)	(39)	(98)	(71)	582	12,336
Ferroalloys and manganese	1,660	(1,065)	(11)	(4)	-	-	580
Other ferrous products and services	1,737	(1,147)	(16)	(3)	(3)	28	596
	102,842	(47,995)	(347)	(508)	(492)	718	54,218
Base metals							
Nickel and other products	16,855	(11,213)	(173)	(141)	(120)	-	5,208
Copper	7,672	(3,502)	(14)	(68)	-	-	4,088
	24,527	(14,715)	(187)	(209)	(120)	-	9,296
Coal	6,025	(5,811)	(33)	(75)	-	511	617
Others	1,089	(961)	(2,738)	(584)	(76)	204	(3,066)
Total	134,483	(69,482)	(3,305)	(1,376)	(688)	1,433	61,065
Discontinued operations (Fertilizers)	397	(393)	(15)	-	-	-	(11)
Total	134,880	(69,875)	(3,320)	(1,376)	(688)	1,433	61,054

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

From continuing operations

	Consolidated		
	Year ended December 31,		
	2020	2019	2018
Net income (loss) attributable to Vale's stockholders	26,713	(6,672)	25,967
Net income (loss) attributable to noncontrolling interests	(1,810)	(2,025)	117
Net income (loss)	24,903	(8,697)	26,084
Depreciation, depletion and amortization	16,679	14,751	12,240
Income taxes	3,025	(2,509)	(966)
Financial results	24,140	13,446	18,058
LAJIDA (EBITDA)	68,747	16,991	55,416
Items to reconciled adjusted LAJIDA (EBITDA)			
Equity results and other results in associates and joint ventures	5,436	2,684	693
Dividends received and interest from associates and joint ventures (i)	1,338	1,870	1,433
Impairment and disposal of non-current assets	11,819	20,762	3,523
Adjusted LAJIDA (EBITDA)	87,340	42,307	61,065

(i) Includes the remuneration of the financial instrument of the Coal segment.

From discontinued operations

	Consolidated
	Year ended December 31, 2018
Loss	(310)
Income taxes	(134)
Financial results	18
LAJIDA (EBITDA)	(426)
Items to reconciled adjusted LAJIDA (EBITDA)	
Impairment of non-current assets	415
Adjusted LAJIDA (EBITDA)	(11)

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



b) Assets by segment

	December 31, 2020			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	10,483	5,995	152,970	7,880	6,970	135,143
Base metals	6,398	91	101,593	5,457	56	80,181
Coal	129	-	-	243	-	-
Others	-	4,471	7,582	7	4,252	6,666
Total	17,010	10,557	262,145	13,587	11,278	221,990

	Consolidated Year ended December 31,								
	2020			2019			2018		
	Capital expenditures (ii)			Capital expenditures (ii)			Capital expenditures (ii)		
	Sustaining capital	Project execution	Depreciation, depletion and amortization	Sustaining capital	Project execution	Depreciation, depletion and amortization	Sustaining capital	Project execution	Depreciation, depletion and amortization
Ferrous minerals	10,958	1,301	9,118	6,726	1,527	8,167	5,793	2,925	6,109
Base metals	8,066	1,244	7,215	4,889	608	5,352	4,442	119	4,934
Coal	1,006	-	82	952	-	937	492	82	921
Others	23	128	264	42	30	295	20	26	276
Total	20,053	2,673	16,679	12,609	2,165	14,751	10,747	3,152	12,240

i) Goodwill is allocated to ferrous minerals and base metals segments in the amount of R\$7,133 and R\$10,008 in December 31, 2020 and R\$7,133 and R\$7,495 in December 31, 2019, respectively.

(ii) Cash outflows.

c) Assets by geographic area

	December 31, 2020				December 31, 2019			
	Investments in associates and joint ventures	Intangible	Property, plant and equipment	Total	Investments in associates and joint ventures	Intangible	Property, plant and equipment	Total
Brazil	9,145	38,151	121,416	168,712	10,072	26,181	117,430	153,683
Canada	-	10,138	61,313	71,451	-	8,062	43,260	51,322
Americas, except Brazil and Canada	1,218	-	26	1,244	975	-	-	975
Europe	-	-	4,647	4,647	-	8	3,626	3,634
Indonesia	-	8	14,182	14,190	-	4	11,130	11,134
Asia, except Indonesia and China	108	-	4,940	5,048	157	-	3,971	4,128
China	86	11	101	198	74	-	39	113
New Caledonia	-	-	-	-	-	-	2,435	2,435
Oman	-	1	7,211	7,212	-	2	5,842	5,844
Total	10,557	48,309	213,836	272,702	11,278	34,257	187,733	233,268

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



d) Net operating revenue by geographic area

	Consolidated				
	Year ended December 31, 2020				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	1,706	1,393	-	-	3,099
United States of America	1,270	4,066	-	-	5,336
Germany	1,766	6,838	-	-	8,604
Europe, except Germany	6,271	12,292	509	-	19,072
Middle East, Africa and Oceania	7,400	82	342	-	7,824
Japan	9,295	2,068	97	-	11,460
China	116,298	4,827	68	-	121,193
Asia, except Japan and China	10,747	4,881	1,354	-	16,982
Brazil	12,612	786	61	1,500	14,959
Net operating revenue	167,365	37,233	2,431	1,500	208,529

	Consolidated				
	Year ended December 31, 2019				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	2,048	3,300	-	-	5,348
United States of America	1,588	3,683	-	-	5,271
Germany	4,590	2,063	-	-	6,653
Europe, except Germany	5,968	6,764	1,107	-	13,839
Middle East, Africa and Oceania	8,175	79	293	-	8,547
Japan	8,121	1,690	461	-	10,272
China	69,755	2,650	-	-	72,405
Asia, except Japan and China	8,058	3,226	1,825	-	13,109
Brazil	10,464	896	319	1,517	13,196
Net operating revenue	118,767	24,351	4,005	1,517	148,640

	Consolidated				
	Year ended December 31, 2018				
	Ferrous minerals	Base metals	Coal	Others	Total
Americas, except United States and Brazil	2,988	2,410	-	-	5,398
United States of America	1,429	3,464	-	44	4,937
Germany	4,091	1,967	-	-	6,058
Europe, except Germany	8,154	6,559	1,603	-	16,316
Middle East, Africa and Oceania	9,450	91	548	-	10,089
Japan	7,597	1,861	608	-	10,066
China	53,120	3,163	-	-	56,283
Asia, except Japan and China	6,648	4,011	2,817	-	13,476
Brazil	9,365	1,001	449	1,045	11,860
Net operating revenue	102,842	24,527	6,025	1,089	134,483

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 (note 19). The selling price of these products can be measured reliably at each period, since the price is quoted in an active market.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



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

	December 31, 2020			
	Thousand metric tons	Provisional price (US\$/tonne)	Change	Effect on Revenue
Iron ore	27,169	150.6	+/-10%	+/- 2,206
Iron ore pellets	418	181.9	+/-10%	+/- 41
Copper	89	9,723.4	+/-10%	+/- 466

Accounting policy

Revenue is recognized when the control of a good or service transferred to a customer. Since Vale's sales are under different shipping terms, revenue could be recognized when the product is available at the loading port, loaded on the ship, at the port of discharge or at the customer's warehouse.

A relevant proportion of Vale's sales are under Cost and Freight ("CFR") and Cost, Insurance and Freight ("CIF") Incoterms, in which the Company is responsible for providing shipping services after the date that Vale transfers control of the goods to the customers. Shipping services for CFR and CIF contracts are considered as a separate performance obligation in which a proportion of the transaction price is allocated and recognized over time as the shipping services are provided.

Generally, the contract payment terms consider the upfront payments or the use of credit letters. The payment terms do not have a significant financing component. In some cases, the sale price is determined on a provisional basis at the date of sale and adjustments to the sale price subsequently occur based on movements in the quoted market or contractual prices up to the date of final pricing.

Revenue is recognized based on the estimated fair value of the total consideration receivable, and the provisionally priced sale mechanism embedded within these sale arrangements has the character of a derivative. Accordingly, the fair value of the final sale price adjustment is re-estimated continuously and changes in fair value are recognized as operational revenue in the income statement.

5. Costs and expenses by nature

a) Cost of goods sold and services rendered

	Consolidated			Parent company	
	2020	2019	2018	2020	2019
Personnel	8,643	7,929	8,346	4,701	3,668
Materials and services	17,310	15,297	14,554	7,071	4,970
Fuel oil and gas	4,860	5,498	5,646	2,855	3,329
Maintenance	14,052	11,059	10,253	8,941	7,380
Royalties	4,386	3,187	2,747	4,389	2,965
Energy	3,615	3,385	3,301	1,541	1,553
Ores acquired from third parties	5,009	2,403	1,883	3,464	1,990
Depreciation, depletion and amortization	15,387	13,454	11,719	7,001	6,596
Freight	17,845	15,997	15,972	190	124
Others	7,460	5,627	6,780	4,715	4,934
Total	98,567	83,836	81,201	44,868	37,509
Cost of goods sold	95,585	81,115	79,074	42,723	35,538
Cost of services rendered	2,982	2,721	2,127	2,145	1,971
Total	98,567	83,836	81,201	44,868	37,509

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



b) Selling and administrative expenses

	Consolidated			Parent company	
				Year ended December 31,	
	2020	2019	2018	2020	2019
Selling	456	363	351	93	69
Personnel	1,150	714	771	847	468
Services	593	336	338	387	200
Depreciation and amortization	251	221	225	89	104
Advertisement	90	26	76	84	23
Others	317	264	156	64	70
Total	2,857	1,924	1,917	1,564	934

c) Other operating expenses (income), net

	Consolidated			Parent company	
				Year ended December 31,	
	2020	2019	2018	2020	2019
Asset retirement obligations	1,605	378	19	422	283
Provision for litigations (i)	388	1,130	681	307	975
Profit sharing program	593	348	674	374	195
COVID-19 expenses	592	-	-	573	-
Disposals of materials and inventories	133	189	118	82	169
Others (ii)	645	7	121	626	148
Total	3,956	2,052	1,613	2,384	1,770

(i) In 2019, includes the change in the expected outcome of probable loss of the lawsuit related to the accident of ship loaders, at the Praia Mole maritime terminal, in Espírito Santo.

(ii) In 2020, includes expenses in the amount of R\$610 related to early termination or amendment of contracts of all converted vessels engaged in cargo transportation. In 2019, includes the reversal of the amount provided for the legal proceedings related to the Rede Ferroviária Federal S.A lawsuit.

6. Financial result

	Consolidated			Parent company	
				Year ended December 31,	
	2020	2019	2018	2020	2019
Financial income					
Short-term investments	646	982	661	295	273
Others (i)	1,276	1,110	888	413	212
	1,922	2,092	1,549	708	485
Financial expenses					
Loans and borrowings gross interest	(4,210)	(3,894)	(4,301)	(5,229)	(4,951)
Capitalized loans and borrowing costs	345	551	704	345	549
Participative stockholders' debentures	(8,250)	(5,687)	(1,871)	(8,250)	(5,687)
Interest on REFIS	(275)	(605)	(713)	(265)	(593)
Interest on lease liabilities	(358)	(299)	-	(102)	(102)
Financial guarantees	(2,462)	(1,452)	87	(2,462)	(1,452)
Expenses with cash tender offer repurchased	-	(1,100)	(1,060)	-	-
Others	(1,931)	(2,252)	(1,120)	(785)	(1,317)
	(17,141)	(14,738)	(8,274)	(16,748)	(13,553)
Other financial items, net					
Net foreign exchange gains (losses)	(2,606)	144	(8,237)	(2,318)	393
Derivative financial instruments (note 19)	(5,526)	926	(1,006)	(4,872)	573
Indexation losses, net	(789)	(1,870)	(2,090)	(1,001)	(1,388)
	(8,921)	(800)	(11,333)	(8,191)	(422)
Total	(24,140)	(13,446)	(18,058)	(24,231)	(13,490)

(i) In 2020, includes amounts related to Eletrobrás' contingent assets in the amount of R\$301, see note 26.

Accounting policy

Transactions in foreign currencies are translated into the functional currency using the exchange rate prevailing at the transaction date. The foreign exchange gains and losses resulting from the translation at the exchange rates prevailing at the end of the year are recognized in the income statement as "financial income or expense". The exceptions are transactions related to qualifying net investment hedges or items that are attributable to part of the net investment in a foreign operation, for which gains and losses are recognized in the statement of comprehensive income.

7. Streaming transactions

Cobalt streaming

In June 2018, the Company entered into two different agreements, one with Wheaton Precious Metals Corp (“Wheaton”) and the other with Cobalt 27 Capital Corp. (“Cobalt 27”), to sell a stream equivalent to 75% of the cobalt to be extracted as a by-product from the Voisey’s Bay mine, in Canada. Upon completion of the transaction, the Company received an aggregate upfront payment of R\$2,603 (US\$690 million), which the Company has been investing on the Voisey’s Bay underground mine expansion project. The cobalt extraction is expected to start in 2022 and, that is when the prepayment starts to be amortized over the useful life of the mine, along with the depreciation of the Voisey’s Bay underground mine assets.

Vale will also receive additional payments of 20%, on average, of the market reference price for cobalt, for each pound, of finished cobalt delivered. The revenue will be recognized based on the units of cobalt extracted in relation to the total proven and probable cobalt reserves negotiated with Wheaton and Cobalt 27.

Gold streaming

In August 2016, the Company amendment the gold transaction entered into to 2013 with Wheaton Precious Metals Corp (“Wheaton”) to include in each contract an additional 25% of the gold extracted as by-product over a lifetime of the Salobo copper mine. Hence, Wheaton holds the rights to 75% of the contained gold in the copper concentrated from the Salobo mine and 70% of the gold extracted as a by-product of the Sudbury nickel mines until 2030.

The transactions were bifurcated into two identifiable components (i) the sale of the mineral rights recognized in the income statement under “Other operating income (expenses), net” and, (ii) the contract liability related to the services for gold extraction on the portion in which Vale operates as an agent for Wheaton gold extraction.

Accounting policy

The Company recognizes contract liabilities in the event it receives payments from customers before a sale meets criteria for revenue recognition. Proceeds received under the terms of the streaming transaction are accounted for as “streaming transactions” and included within liabilities.

Contract liability is initially recognized at fair value, net of transaction costs incurred, and is subsequently carried at amortized cost and updated using the effective interest rate method. Contract liability is released in the income statement as the control of the product or service is transferred to the customer.

Critical accounting estimates and judgments

Defining the gain on sale of mineral interest and the contract liabilities portion of the gold transaction requires the use of critical accounting estimates including, but not limited to: (i) allocation of costs between nickel or copper and gold based on relative prices; (ii) expected margin for the independent components (sale of mineral rights and service for gold extraction); and (iii) discount rates used to measure the present value of future inflows and outflows.

8. Income taxes

a) Deferred income tax assets and liabilities

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Taxes losses carryforward	22,490	18,778	13,491	10,877
Temporary differences:				
Employee post retirement obligations	3,866	3,387	1,320	1,340
Provision for litigation	1,852	1,784	1,778	1,735
Timing differences arising on assets and liabilities	22,505	13,084	21,289	12,301
Fair value of financial instruments	7,040	3,485	7,040	3,545
Allocated goodwill	(13,633)	(10,640)	-	-
Goodwill amortization	(2,298)	(1,928)	(2,298)	(1,928)
Others	2,691	1,616	140	900
	22,023	10,788	29,269	17,893
Total	44,513	29,566	42,760	28,770
Assets	53,711	37,151	42,760	28,770
Liabilities	(9,198)	(7,585)	-	-
	44,513	29,566	42,760	28,770

Changes in deferred tax are as follows:

	Consolidated		Parent company	
	Assets	Liabilities	Deferred taxes, net	Deferred taxes, net
Balance at December 31, 2018	26,767	5,936	20,831	17,536
Utilization of taxes losses carryforward	(1,467)	-	(1,467)	223
Timing differences arising on assets and liabilities	8,145	-	8,145	8,628
Fair value of financial instruments	1,259	-	1,259	1,258
Allocated goodwill	-	(973)	973	-
Others	(416)	-	(416)	(159)
Effect in income statement	7,521	(973)	8,494	9,950
Transfers between asset and liabilities	1,149	1,149	-	-
Acquisition of subsidiaries (i)	397	952	(555)	-
Translation adjustment	331	478	(147)	-
Other comprehensive income	986	43	943	1,284
Balance at December 31, 2019	37,151	7,585	29,566	28,770
Taxes losses carryforward	1,483	-	1,483	2,614
Timing differences arising on assets and liabilities	8,675	-	8,675	8,988
Fair value of financial instruments	3,793	-	3,793	3,793
Allocated goodwill	-	(542)	542	-
Others	310	-	310	(1,395)
Effect in income statement	14,261	(542)	14,803	14,000
Transfers between asset and liabilities	178	178	-	-
Merger of subsidiaries (ii)	-	-	-	(58)
Translation adjustment	1,977	2,024	(47)	-
Other comprehensive income	144	(47)	191	48
Balance at December 31, 2020	53,711	9,198	44,513	42,760

(i) Refers to the acquisition of New Steel and Ferrous Resources Limited (note 15).

(ii) Refers to the merger of Ferrous Resources do Brasil S.A.

The tax loss carryforward does not expire in the Brazilian jurisdiction and their compensation is limited to 30% of the taxable income for the year. The local profits of subsidiaries abroad are also taxed in Brazil and there is no restriction on their offset against tax losses generated previously by the foreign entity.

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			Parent company	
				Year ended December 31,	
	2020	2019	2018	2020	2019
Income (loss) before income taxes	27,928	(11,206)	25,118	27,452	(11,917)
Income taxes at statutory rate - 34%	(9,496)	3,810	(8,540)	(9,334)	4,052
Adjustments that affect the basis of taxes:					
Income tax benefit from interest on stockholders' equity	1,660	2,470	3,174	1,660	2,470
Tax incentives	1,184	736	2,112	363	184
Equity results	(190)	296	389	3,796	(2,185)
Addition(reversal) of tax loss carryforward (i)	3,984	99	5,814	4,559	330
Unrecognized tax losses of the year	(1,096)	(4,218)	(1,711)	-	-
Others	929	(684)	(272)	(1,783)	394
Income taxes	(3,025)	2,509	966	(739)	5,245

(i) Mainly refers to the effect of monetary exchange variation on tax losses carryforward from foreign subsidiaries.

c) Tax incentives

In Brazil, the Company has tax incentives to partially reduce the income tax generated by the operations conducted in the North and Northeast regions that includes iron ore, pellets, copper and nickel. The incentive is calculated based on the taxable income of the incentive activity (tax operating income) and takes into account the allocation of tax operating income into different incentives applicable to different tranches of production during the periods specified for each product, usually 10 years. Most of the Company's incentives are expected to expire up to 2024 and the last recognized tax incentive will expire in 2027. An amount equal to that obtained with the tax saving must be appropriated in retained earnings reserve account in stockholders' equity and cannot be distributed as dividends to stockholders.

In addition to those incentives, part of the income tax due, can be reinvested in the acquisition of new machinery and equipment, subject to subsequent approval by the regulatory agency responsible, Superintendence for the Development of the Amazon ("SUDAM"). The reinvestment subsidy is accounted in retained earnings reserve account, which restricts its distribution as dividends to stockholders. This tax incentive expires in 2023.

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

d) Income taxes - Settlement program ("REFIS")

The balance mainly relates to the settlement program of the claims related to the collection of income tax and social contribution on equity gains of foreign subsidiaries and affiliates from 2003 to 2012. As at December 31, 2020, the balance of R\$14,262 (R\$1,769 classified as current liabilities and R\$12,493 classified as non-current liabilities) is due in 94 remaining monthly installments, bearing the SELIC interest rate (Special System for Settlement and Custody), which is the Brazilian federal funds rate, while at December 31, 2019, the balance was R\$15,749 (R\$1,737 classified as current liabilities and R\$14,012 classified as non-current liabilities).

As at December 31, 2020, the SELIC rate was 2.00% per annum (4.50% per annum at December 31, 2019).

e) Uncertain tax positions

The Company has assessed its uncertain tax positions, particularly those related to the deduction of the deduction of social security contributions on the net income ("CSLL") in Brazil and the calculation of the transfer pricing over exportation of ore to its foreign subsidiary and, based on the position of its internal and external legal advisors, has concluded that these uncertain tax positions are likely to be accepted by the tax authority as discussed below:

(e.i) Deduction of CSLL in Brazil:

In 2004, a definitive decision of the Superior Court of Justice (“STJ”) granted to the Company the right to deduct the CSLL from the taxable corporate income. In 2006, the Brazilian federal tax authorities commenced a rescission action (*ação rescisória*), seeking the reversal of the 2004 decision. In 2019, the Federal Court of Appeals (“TRF”) decided in favor for the rescission action and, based on this decision, although not definitive, the Company has decided not to deduct the CSLL from the taxable income.

In November 2020, the Company received an assessment regarding 2016 and 2017 for the collection of corporate income tax (“IRPJ”) in the amount of R\$2,259, related to the deduction of CSLL from the fiscal years in which Vale was supported by a definitive favorable court decision (*res judicata*).

Vale believes that the rescission action brought by the Federal Government is not applicable (Precedent 343 issued by Brazilian Supreme Court) and, even if it were, the fiscal years prior to the eventual favorable decision on the rescission action could not be charged to the Company. Any understanding conflicting to that interpretation violates the Brazilian legal framework and the consolidated jurisprudence.

(e.ii) Transfer pricing over the exportation of ores to a foreign subsidiary:

The Company was assessed for the collection corporate income tax (IRPJ) and social contribution on net income (CSLL), for the years of 2015, 2016 and 2017 since the tax agent has disregarded the intermediation cost used in the calculation of the transfer pricing over the exportation of iron ore, copper and manganese to its foreign controlled company.

The Company is challenging these assessments in the administrative level and a decision is pending. The total amount in dispute is R\$3,614 (2019: R\$1,431). In addition, there was a reduction of the tax losses from 2015, 2016 and 2017, with the corresponding tax impact of R\$1,882, including penalties and interests.

The Company consistently applies its method for calculating the transfer pricing and it considers that to be the most appropriate tax treatment regarding the prevailing law. From the 2018 to 2020 fiscal years, the amount involved is R\$6,401.

Accounting policy

The Brazilian corporate tax law requires the taxation on the income generated from foreign subsidiaries and, therefore, income tax charge is calculated using the tax rate enacted at the end of the reporting period in Brazil. The effects of the income tax calculation in the consolidated financial statements are calculated by applying the differential between the Brazilian income tax rate and the local income tax rate of each jurisdiction where the Company’s subsidiaries operate and generate taxable income.

Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation and it establishes provisions, where appropriate, on the basis of amounts expected to be paid to the tax authorities. The benefits of uncertain tax positions are recorded only after determining, based on the position of its internal and external legal advisors, a more-likely-than-not probability that the uncertain tax positions will withstand challenge, if any, from taxing authorities.

Deferred income taxes are recognized based on temporary differences between carrying amount and the tax basis of assets and liabilities as well as tax losses carryforwards. However, deferred tax liabilities are not recognized if they arise from the initial recognition of goodwill. Deferred income tax is also not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that, at the time of the transaction, affects neither accounting nor taxable profit or loss. Deferred tax assets and liabilities are offset where there is a legally enforceable right to offset current tax assets and liabilities and where the deferred tax balances relate to the same taxation authority.

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

Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or directly in stockholder’s equity. In this case, the tax is also recognized in other comprehensive income or directly in stockholder’s equity, respectively.

Critical accounting estimates and judgments

Significant judgements, estimates and assumptions are required to determine the amount of deferred tax assets that are recognized based on the likely timing and future taxable profits. Deferred tax assets arising from tax losses carryforwards and temporary differences are recognized considering assumptions and projected cash flows. Deferred tax assets may be affected by factors including, but not limited to: (i) internal assumptions on the projected taxable income, which are based on production and sales planning, commodity prices, operational costs and planned capital costs; (ii) macroeconomic environment; and (iii) trade and tax scenarios.

In addition, the Company applies significant judgement in identifying uncertainties over income tax treatments, which could impact the consolidated financial statements. The Company operates in multiple jurisdictions where uncertainties arise in the application of complex tax regulations. The Company and its subsidiaries are subject to reviews of income tax filings and other tax payments, and disputes can arise with the taxing authorities over the interpretation of the applicable laws and regulations.

9. Basic and diluted earnings (loss) per share

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

	Year ended December 31,		
	2020	2019	2018
Net income (loss) attributable to Vale's stockholders:			
Net income (loss) from continuing operations	26,713	(6,672)	25,967
Loss from discontinued operations	-	-	(310)
Net income (loss)	26,713	(6,672)	25,657
Thousands of shares			
Weighted average number of shares outstanding - common shares	5,129,585	5,127,950	5,178,024
Basic and diluted earnings (loss) per share from continuing operations:			
Common share (R\$)	5.21	(1.30)	5.01
Basic and diluted loss per share from discontinued operations:			
Common share (R\$)	-	-	(0.06)
Basic and diluted earnings (loss) per share:			
Common share (R\$)	5.21	(1.30)	4.95

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

10. Accounts receivable

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Accounts receivable (i)	26,205	10,448	46,623	16,660
Expected credit loss	(261)	(253)	(64)	(61)
	25,944	10,195	46,559	16,599
Revenue related to the steel sector - %	87.25%	87.33%	-	-

(i) The balance of Parent Company' accounts receivable is substantially with the group's trading companies.

	Consolidated			Parent company	
	Year ended December 31,			2020	2019
	2020	2019	2018		
Impairment of accounts receivable recorded in the income statement	23	(4)	(26)	(3)	2

In 2020, the Company had a customer of the Ferrous Minerals Segment whose revenue individually represented 10.1% of the Company's total revenue. In 2019, there was no customer that individually represents more than 10% of the Company's accounts receivable or revenues.

Accounting policy

Accounts receivable is the total amount due from sale of products and services rendered by the Company. Accounts receivable is recognized at fair value and subsequently measured at amortized cost using the effective interest method, except for component of provisionally priced commodities sales that are subsequently measured at fair value through profit or loss.

The Company applies the IFRS 9/CPC 48 simplified approach to measuring expected credit losses which uses a lifetime expected loss allowance for all accounts receivable. The Company has established a provision matrix that is based on historical credit loss experience, adjusted for forward-looking factors specific to the economic environment and by any financial guarantees related to these accounts receivables.

11. Inventories

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Finished products	13,659	10,505	4,054	3,420
Work in progress	3,351	3,082	100	164
Consumable inventory	4,093	3,641	1,988	1,726
Total	21,103	17,228	6,142	5,310

	Consolidated			Parent company	
	2020	2019	2018	Year ended December 31, 2020	2019
Reversal (provision) for net realizable value	15	96	(14)	(9)	(32)

Finished and work in progress products inventories by segments are presented in note 4(b) and the cost of goods sold is presented in note 5(a).

Accounting policy

Inventories are stated at the lower of cost and the net realizable value. The inventory production cost comprises variable and fixed costs, direct and indirect costs of production and are assigned to individual items of inventory on the basis of weighted average costs method. At the end of the reporting period, net realizable value of inventories are assessed and a provision for losses on obsolete or slow-moving inventory may be recognized. The write-downs and reversals are recognized as "Cost of goods sold and services rendered".

12. Recoverable taxes

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

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Value-added tax (net of provision for loss)	2,252	1,950	252	2
Brazilian federal contributions	3,084	2,655	2,749	2,352
Prepaid income taxes	2,917	3,899	226	648
Others	63	68	53	46
Total	8,316	8,572	3,280	3,048
Current	2,646	3,719	1,036	1,577
Non-current	5,670	4,853	2,244	1,471
Total	8,316	8,572	3,280	3,048

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Expressed in millions of Brazilian reais, unless otherwise stated



13. Other financial assets and liabilities

	Consolidated			
	Current		Non-Current	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Other financial assets				
Restricted cash	-	-	197	609
Derivative financial instruments (note 19)	698	1,160	347	742
Investments in equity securities	-	-	3,936	2,925
Related parties - Loans (note 29)	1,009	1,289	4,791	6,448
	1,707	2,449	9,271	10,724
Other financial liabilities				
Derivative financial instruments (note 19)	1,712	377	3,578	1,237
Related parties - Loans (note 29)	3,759	3,951	4,903	3,853
Financial guarantees provided (note 30)	-	-	4,558	2,116
Liabilities related to the concession grant (note 16b)	1,088	-	10,928	-
Advance received	3,347	1,330	-	-
	9,906	5,658	23,967	7,206

	Parent company			
	Current		Non-Current	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Other financial assets				
Restricted cash	-	-	20	530
Derivative financial instruments (note 19)	37	450	338	593
Investments in equity securities	-	-	3,438	2,555
Related parties	-	690	42	276
	37	1,140	3,838	3,954
Other financial liabilities				
Derivative financial instruments (note 19)	1,166	280	3,076	972
Related parties - Loans (note 29)	2,484	6,392	89,156	62,861
Financial guarantees provided (note 30)	-	-	4,558	2,116
Liabilities related to the concession grant (note 16b)	1,088	-	10,928	-
Advance receipts	9	6	-	-
	4,747	6,678	107,718	65,949

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

14. Investments in subsidiaries, associates and joint ventures

a) Investment information

	Main activity/Business	% ownership	% voting capital	Investments		Equity results in the income statement			Dividends received (i)		
				December 31, 2020	December 31, 2019	Year ended December 31,			Year ended December 31,		
						2020	2019	2018	2020	2019	2018
Direct and indirect subsidiaries											
In Brazil											
Biopalma da Amazônia S.A. (note 18)	Palm oil	-	-	-	20	(295)	(1,300)	(562)	-	-	-
Companhia Portuária da Baía de Sepetiba	Iron ore	100.00	100.00	295	222	145	(54)	161	81	-	143
Mineração Corumbaense Reunida S.A.	Iron ore and manganese	100.00	100.00	-	-	(670)	(784)	(73)	-	-	-
Minerações Brasileiras Reunidas S.A. (iii)	Iron ore	100.00	100.00	10,960	8,302	1,875	1,112	752	445	901	866
Minerações Brasileiras Reunidas S.A. - Goodwill	Iron ore	-	-	4,060	4,060	-	-	-	-	-	-
Vale Manganês S.A.	Manganese	100.00	100.00	335	679	(384)	(66)	32	-	-	-
Salobo Metais S.A.	Cooper	100.00	100.00	12,989	11,213	3,616	2,186	2,384	1,562	1,718	1,094
Tecnored Desenvolvimento Tecnológico S.A.	Iron ore	100.00	100.00	98	114	(184)	(113)	(60)	-	-	-
Valepar - Goodwill	Iron ore	-	-	3,073	3,073	-	-	-	-	-	-
Others		-	-	590	1,158	(557)	(39)	189	75	72	7
Abroad											
Ferrous Resource Limited	Iron ore	100.00	100.00	-	1,965	(152)	(87)	-	-	-	-
New Steel Global	Iron ore	100.00	100.00	1,866	1,865	(62)	(73)	-	-	-	-
Vale International Holdings GmbH (i)	Holding	-	-	-	-	-	(36)	(1,808)	-	-	-
Vale Holdings B.V (i)	Holding	100.00	100.00	10,722	10,448	(2,163)	68	-	-	-	-
Vale Canada Limited	Nickel	100.00	100.00	11,383	11,236	(4,407)	(11,515)	(569)	-	-	-
Vale International S.A.	Trading and holding	100.00	100.00	105,036	71,797	14,769	4,901	4,054	-	-	-
Vale Malaysia Minerals Sdn. Bhd.	Iron ore	100.00	100.00	7,228	5,476	181	174	226	-	-	-
Vale Shipping Holding Pte. Ltd.	Iron ore	100.00	100.00	2,004	1,561	(7)	23	301	-	-	-
Others		-	-	123	127	(36)	(1,066)	(832)	-	-	-
				170,762	133,316	11,669	(6,670)	4,195	2,163	2,691	2,110
Associates and joint ventures											
In Brazil											
Aliança Geração de Energia S.A. (ii)	Energy	55.00	55.00	1,909	1,894	140	122	81	126	111	88
Aliança Norte Energia Participações S.A. (ii)	Energy	51.00	51.00	606	646	(40)	17	54	-	-	-
Companhia Coreano-Brasileira de Pelotização	Pellets	50.00	50.00	249	354	36	186	253	178	253	121
Companhia Hispano-Brasileira de Pelotização (ii)	Pellets	50.89	50.89	223	284	57	144	200	144	200	86
Companhia Italo-Brasileira de Pelotização (ii)	Pellets	50.90	51.00	228	262	50	119	219	119	219	122
Companhia Nipo-Brasileira de Pelotização (ii)	Pellets	51.00	51.11	627	605	43	328	460	164	365	255
Samarco S.A. (note 24)	Pellets	50.00	50.00	-	-	-	-	-	-	-	-
Companhia Siderúrgica do Pecém	Steel	50.00	50.00	-	-	(655)	(282)	(867)	-	-	-
Mineração Rio do Norte S.A.	Bauxite	40.00	40.00	367	393	(7)	58	6	45	-	-
MRS Logística S.A.	Logistics	48.16	46.75	2,069	1,999	185	196	264	115	120	106
VLI S.A.	Logistics	29.60	29.60	2,495	3,273	(88)	1	119	8	37	28
Others		-	-	372	362	15	(3)	(20)	2	-	2
Abroad											
California Steel Industries, Inc.	Steel	50.00	50.00	1,218	975	(31)	88	289	-	117	114
Henan Longyu Energy Resources Co., Ltd. (note 15)	Coal	-	-	-	-	-	(6)	58	-	-	-
Zhuhai YPM Pellet Co.	Iron ore	-	-	-	91	(1)	1	2	-	-	-
Nacala Corridor Holding Netherlands B.V.	Logistics	50.00	50.00	-	-	-	-	-	-	-	-
Others		-	-	194	140	(259)	(98)	27	3	1	-
Total Consolidated investment				10,557	11,278	(555)	871	1,145	904	1,423	922
Parent company's total investment				181,319	144,594	11,114	(5,799)	5,340	3,067	4,114	3,032

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Expressed in millions of Brazilian reais, unless otherwise stated



(i) Vale International Holdings GmbH was merged into Vale Holdings B.V. on November 01, 2019.

(ii) 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.

(iii) On February 11, 2021 (subsequent event), the Board of Directors decided to submit for approval at the General Shareholders' Meeting, the de-merger of its wholly owned subsidiary Minerações Brasileiras Reunidas S.A., followed by the merger of the de-merged assets into Vale S.A.

b) Movements during the year

	Consolidated		Parent company	
	2020	2019	2020	2019
Balance at January 1,	11,278	12,495	144,594	139,510
Additions and Capitalizations (i)	657	287	2,719	2,495
Acquisitions (ii)	-	-	-	3,870
Disposals (iii)	(1,292)	-	(1,294)	-
Translation adjustment	375	73	30,828	5,920
Equity results in income statement	(555)	871	11,114	(5,799)
Results from sales on equity interest (iii)	547	-	597	-
Equity results in statement of comprehensive income	(9)	(15)	(544)	279
Fair value adjustment (iv)	(59)	(630)	-	(630)
Dividends declared	(639)	(1,296)	(3,982)	(3,723)
Transfer to assets held for sale (iv)	-	(613)	-	-
Change in interest percentage	-	-	(1,012)	2,241
Merger (v)	-	-	(2,105)	-
Others	254	106	404	432
Balance at December 31,	10,557	11,278	181,319	144,594

(i) In 2020, refers mainly to Companhia Siderúrgica do Pecém's capital increase. At the Parent Company refers to non-cash additions related to loan capitalization of Ferrous Resources Limited in the amount of R\$476.

(ii) In 2020, refers to the acquisition of New Steel Global N.V. and Ferrous Resources Limited (note 15).

(iii) In 2020, refers to the exercise of the call option of VLI's share (note 15).

(iv) In 2019, refers to fair value adjustment of the investment in Henan Longyu Energy Resources Co., Ltd., which was reclassified and presented as 'held for sale' (note 15).

(v) On April 30, 2020 the incorporation of the wholly owned subsidiary Ferrous Resources do Brasil S.A. was approved at the General Shareholders' Meeting.

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

c) Summarized financial information

The summarized financial information about relevant associates and joint ventures for the Company are as follow. The stand-alone financial statements of those entities may differ from the financial information reported herein, which is prepared considering Vale's accounting policies. The summarized financial information about Samarco is presented in note 24.

	December 31, 2020							
	Aliança Geração de Energia	Aliança Norte Energia	CSI	CSP (i)	Pelletizing (ii)	MRS Logística	Nacala Corridor Holding Netherlands B.V. (i)	VLI S.A.
Current assets	718	1	1,746	1,799	1,560	2,139	2,724	3,192
Non-current assets	3,696	1,189	1,786	11,612	1,339	8,842	22,603	19,421
Total assets	4,414	1,189	3,533	13,411	2,899	10,981	25,326	22,614
Current liabilities	250	-	330	3,829	278	2,020	2,976	3,153
Non-current liabilities	694	1	767	13,631	4	4,665	24,343	11,030
Total liabilities	944	1	1,097	17,460	282	6,685	27,318	14,183
Stockholders' equity	3,470	1,188	2,436	(4,049)	2,617	4,296	(1,992)	8,431
Net revenue	958	-	3,432	6,067	534	3,302	3,151	5,214
Net income (loss)	255	(78)	(62)	(4,305)	367	385	(451)	(236)

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	December 31, 2019							
	Aliança Geração de Energia	Aliança Norte Energia	CSI	CSP (i)	Pelletizing (ii)	MRS Logística	Nacala Corridor Holding Netherlands B.V. (i)	VLI S.A.
Current assets	867	1	1,938	1,765	2,900	1,976	1,548	3,245
Non-current assets	3,546	1,266	1,387	11,931	1,270	8,851	18,158	18,169
Total assets	4,413	1,267	3,325	13,696	4,170	10,827	19,706	21,414
Current liabilities	398	1	750	3,972	1,194	1,670	2,080	3,116
Non-current liabilities	571	-	625	10,778	8	5,006	18,827	9,594
Total liabilities	969	1	1,375	14,750	1,202	6,676	20,907	12,710
Stockholders' equity	3,444	1,266	1,950	(1,054)	2,968	4,151	(1,201)	8,704
Net revenue	1,016	-	3,954	5,495	2,299	2,994	3,086	4,886
Net income (loss)	222	33	176	(1,624)	1,532	408	(198)	3

(i) The joint ventures 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 any further losses nor liabilities associated with the investee.

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

d) Noncontrolling interest

Summarized financial information

The summarized financial information, prior to the eliminations of the intercompany balances and transactions, about subsidiaries with material noncontrolling interest are as follow. The stand-alone financial statements of those entities may differ from the financial information reported herein, which is prepared considering Vale's accounting policies.

	December 31, 2020				
	PTVI	VNC	Vale Moçambique S.A.	Others	Total
Current assets	3,090	11	1,827	-	-
Non-current assets	9,773	-	868	-	-
Related parties - Stockholders	318	256	151	-	-
Total assets	13,181	267	2,846	-	-
Current liabilities	844	3	1,766	-	-
Non-current liabilities	273	2	510	-	-
Related parties - Stockholders	-	1,458	63,323	-	-
Total liabilities	1,117	1,463	65,599	-	-
Stockholders' equity	12,064	(1,196)	(62,753)	-	-
Equity attributable to noncontrolling interests	6,715	(60)	(12,111)	657	(4,799)
Net income (loss)	443	(3,504)	(9,347)	-	-
Net income (loss) attributable to noncontrolling interests	184	(175)	(1,799)	(20)	(1,810)
Dividends paid to noncontrolling interests (i)	-	-	-	72	72

(i) Dividends paid to others noncontrolling interests relates to Vale Oman Pelletizing.

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Expressed in millions of Brazilian reais, unless otherwise stated

December 31, 2019					
	PTVI	VNC	Vale Moçambique S.A.	Others	Total
Current assets	1,862	682	758		
Non-current assets	6,571	2,436	802		
Related parties - Stockholders	337	136	116		
Total assets	8,770	3,254	1,676		
Current liabilities	564	804	1,287		
Non-current liabilities	246	950	592		
Related parties - Stockholders	-	1,388	41,200		
Total liabilities	810	3,142	43,079		
Stockholders' equity	7,960	112	(41,403)		
Equity attributable to noncontrolling interests	3,248	6	(7,991)	406	(4,331)
Net income (loss)	286	(8,353)	(12,852)		
Net income (loss) attributable to noncontrolling interests	117	(418)	(2,474)	750	(2,025)
Dividends paid to noncontrolling interests (i)	-	-	-	695	695

(i) Dividends paid to noncontrolling interests relates to R\$611 to Minerações Brasileiras Reunidas and R\$84 to Vale Oman Pelletizing.

	December 31, 2018					
	MBR	PTVI	VNC	Vale Moçambique S.A.	Others	Total
Net income (loss)	1,587	218	1,460	(3,731)		
Net income (loss) attributable to noncontrolling interests	635	89	73	(718)	38	117
Dividends paid to noncontrolling interests (i)	587	-	-	-	48	635

(i) Dividends paid to others noncontrolling interests relates to Vale Oman Pelletizing

Accounting policy

Consolidation and investments in associates and joint ventures – The financial statements reflect the assets, liabilities and transactions of the Parent Company and its direct and indirect controlled entities (“subsidiaries”). The subsidiaries are consolidated when the Company is exposed or has rights to variable returns from its involvement with the investee and has the ability to direct the significant activities of the investee. Intercompany balances and transactions, which include unrealized profits, are eliminated.

Joint arrangements are all entities over which the Company has shared control with one or more parties. Joint arrangement investments are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The joint operations are recorded in the financial statements to represent the Company's contractual rights and obligations.

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

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

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

Investments held by other investors in Vale's subsidiaries are classified as noncontrolling interests (“NCI”). The Company treats transactions with noncontrolling interests as transactions with equity owners of the Company. For purchases or disposals from noncontrolling interests, the difference between the consideration paid and the proportion acquired of the carrying value of net assets of the subsidiary is directly recorded in stockholders' equity in “Acquisitions and disposal of noncontrolling interest”.

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

Critical accounting estimates and judgments

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

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

15. Acquisitions and divestitures

a) Business combinations

Ferrous Resources Limited - In August 2019 the Company acquired 100% of the share capital of Ferrous Resources Limited ("Ferrous"), a company that owned iron ore mines nearby some of the Company's operations in Minas Gerais, Brazil for cash consideration of R\$1,986 (US\$525 million). Ferrous has been acquired to gain access to additional reserves for the Company.

The fair values of identifiable assets acquired and liabilities assumed as a result of the acquisition are as follows:

	August 2019
Acquired assets	2,660
Cash and cash equivalents	357
Accounts receivable	109
Inventories	38
Intangibles	19
Property, plant and equipment	1,608
Others	529
Assumed liabilities	(814)
Net identifiable assets acquired	1,846
Fair value adjustment on PP&E	211
Deferred tax liability	(71)
Total identifiable net assets at fair value	1,986

	August 2019
Cash consideration transferred	1,986
(-) Balances acquired	
Cash and cash equivalents	357
Net cash outflow	1,629

New Steel - In January 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 of iron ore with lower carbon dioxide. The intangible assets are not subject to amortization until the operational phase is reached, which is expected to start on 2022. Instead, they are tested for impairment annually, or more frequently when a trigger for impairment has been identified.

The fair values of identifiable assets acquired and liabilities assumed as a result of the acquisition are as follows:

	January 2019
Acquired assets	70
Intangibles (note 16)	9
Other assets	61
Assumed liabilities	(1)
Net identifiable assets acquired	69
Fair value adjustment of intangible research and development asset (note 19)	2,748
Fair value adjustment of property, plant and equipment	2
Deferred tax liability	(935)
Total identifiable net assets at fair value	1,884

b) Other acquisitions and divestitures

Option exercised in VLI shares – In December 2020, BNDES Participações S.A. (“BNDESPar”), fully exercised its option contained in the Call Option Contract for shares issued by VLI S.A. (“VLI”). In this contract, BNDESPar was granted call options on VLI shares held by Vale of up to 8% of VLI’s capital stock.

With the exercise of this option, Vale received R\$1,223 for an 8% stake in VLI, and now holds 29.6% of VLI’s total shares, resulting in a gain of R\$885, recognized in the income statement as “Equity results and other results in associates and joint ventures” for the year ended December 31, 2020.

Divestment agreement in compliance with PT Vale Indonesia Tbk (“PTVI”) Contract of Work – PTVI, a public company in Indonesia, has an agreement in place with the government of the Republic of Indonesia to operate its mining licenses, expiring in December 2025. According to the agreement, PTVI must meet certain requirements to extend the period of the mining licenses beyond 2025, including the commitment to have Indonesian participants in its shareholding structure.

Following this commitment, in June 2020, the Company signed, together with Sumitomo Metal Mining Co., Ltd. (“SMM”), an agreement for the sale of 20% (14.9% from Vale and 5.1% from SMM) of their aggregate stake in PTVI to PT Indonesia Asahan Aluminium (“PT Inalum”), an Indonesia state-owned enterprise. In October 2020, the Company concluded the transaction and received a cash consideration of R\$1,560 (US\$278 million). This transaction with non-controlling interests resulted in a loss of R\$1,012 (US\$179 million), which was recognized in Stockholders’ Equity for the year ended December 31, 2020.

At the closing of the transaction, Vale and SMM which have a stake of 44.3% and 15%, respectively, totaling a 59.3% interest in PTVI, signed a block voting agreement, in which SMM is required to follow Vale’s vote on relevant operational and financial decisions concerning PTVI. Therefore, the Company continues consolidating PTVI in its financial statements.

Henan Longyu Energy Resources Co., Ltd (“Henan Longyu”) - In December 2019, the Company entered into an agreement to sell its 25% interest in Henan Longyu, a company that operates two coal mines in China, for a total cash consideration of R\$843 (US\$156 million). Therefore, this investment was classified as held for sale and an impairment loss of R\$630 was recorded as “Equity results and other results in associates and joint ventures” in the income statement for the year ended December 31, 2019.

In 2020, the precedent conditions of the agreement were met and the Company received the cash consideration in full. Following the conclusion of the transaction, the Company recognized a gain of R\$598 due to the recycling of the cumulative translation adjustments to the income statement, which was recorded as “Equity results and other results in associates and joint ventures” in the income statement for the year ended December 31, 2020.

West III Project – In October 2020, the Company approved the incorporation of a joint venture with Ningbo Zhoushan Port Company Limited (“Ningbo Zhoushan Port”), to build and operate the project to expand the Shulangu Port facilities, located in China. The Project secures strategic port capacity in China to further Vale’s shipping and distribution costs optimization.

Vale will own 50% of the joint venture and Vale’s capital contribution to the project is estimated to range from R\$600 (US\$110 million) to R\$900 (US\$160 million). The construction of the project, which is expected to take up to three years, will start after both parties obtain the anti-trust and other regulatory approvals in China.

Heads of Agreement (“HoA”) with Mitsui & Co. Ltd. (“Mitsui”) - In January 2021 (subsequent event), the Company signed a HoA with Mitsui, both parties to structure Mitsui’s exit from Vale Moçambique and Nacala Logistics Corridor (“NLC”). Currently, Mitsui holds a non-controlling interest of 15% in Vale Moçambique and a 50% interest in NLC.

The HoA determines that Vale will acquire Mitsui's stake in the mine and logistics assets for an immaterial consideration and will undertake of the Nacala Corridor Project Finance in full, which is approximately R\$12,992 (US\$2,500 million) outstanding balance at December 31, 2020. In case of closing the transaction, Vale will also control NLC and, therefore, consolidate its assets and liabilities. NLC's summarized financial information is presented in note 14c.

In addition, the Company informed the market its divestiture intention in the coal segment and, therefore, the Company will assess whether this segment would meet the criteria to be classified as a discontinued operation in future financial statements.

The parties expect to conclude the transaction in 2021, which is subject to the execution of the definitive agreement and usual precedent conditions.

Boston Electrometallurgical Company (“Boston Metal”) – In February 2021 (subsequent event), the Company made an investment of R\$33 (US\$6 million) in Boston Metal to acquire a minority interest and to promote the development of a technology focused on the reduction of carbon dioxide on the steel production. Boston Metal has a diverse shareholding structure which includes venture capital funds, mining companies and private investors.

MBR – In December 2019, the Company purchased an additional 36.4% interest in Minerações Brasileiras Reunidas S.A. (“MBR”) held by its related party, for the total consideration of R\$3,309. Following the completion of the transaction, the Company holds 98.3% of MBR’s share capital. Since this transaction did not result in a change of control for the Company, the impact of R\$1,410 arising from the purchase of additional shares was recognized in the Company’s Stockholders’ Equity, as “Acquisitions and disposal of noncontrolling interest”. In 2020, the Company purchased the remaining interest in MBR for a total consideration of R\$592 (US\$104 million), therefore, the Company holds 100% of MBR’s share capital as at December 31, 2020.

c) Fertilizers (Discontinued operations)

In January 2018, the Company and The Mosaic Company (“Mosaic”) concluded the transaction to sell the fertilizer assets, except for those located in Cubatão, Brazil.

The Company received R\$3,495 (US\$1,080 million) in cash and 34.2 million common shares, corresponding to 8.9% of Mosaic's outstanding common shares after the issuance of these shares totaling R\$2,907 (US\$899 million), at closing date of the transaction. The Company recognized a loss of R\$184 in the income statement from discontinued operations.

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



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

Income statement

	Consolidated Year ended December 31, 2018
Discontinued operations	
Net operating revenue	397
Cost of goods sold and services rendered	(393)
Operating expenses	(15)
Impairment of non-current assets	(415)
Operating loss	(426)
Financial Results, net	(18)
Loss before income taxes	(444)
Income taxes	134
Loss from discontinued operations	(310)
Loss attributable to noncontrolling interests	-
Loss attributable to Vale's stockholders	(310)

Statement of cash flow

	Consolidated Year ended December 31, 2018
Discontinued operations	
Net cash used in operating activities	(121)
Net cash used in investing activities	(36)
Net cash used in discontinued operations	(157)

Accounting policy

Business combination - The acquisition method of accounting is used to account for all business combinations, regardless of whether equity instruments or other assets are acquired. The consideration transferred for the acquisition of a subsidiary comprises (i) fair values of the assets transferred; (ii) liabilities assumed of the acquired business; (iii) equity interests issued to the Company; (iv) fair value of any asset or liability resulting from a contingent consideration arrangement, and (v) fair value of any pre-existing equity interest in the subsidiary.

Identifiable assets acquired, and liabilities and contingent liabilities assumed in a business combination are, with limited exceptions, measured initially at their fair values at the acquisition date. The Company recognizes any non-controlling interest in the acquired entity on an acquisition-by-acquisition basis either at fair value or at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets.

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

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

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

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

16. Intangibles

a) Movements during the year

						Consolidated
	Goodwill	Concessions	Contract right	Software	Research and development project and patents	Total
Balance at December 31, 2018	14,155	15,737	530	428	-	30,850
Additions	-	1,724	-	151	-	1,875
Disposals	-	(65)	-	(1)	-	(66)
Amortization	-	(930)	(6)	(257)	-	(1,193)
Impairment (note 18)	-	(463)	-	(43)	-	(506)
Acquisition of subsidiary	-	12	-	6	2,757	2,775
Translation adjustment	473	(10)	39	20	-	522
Balance at December 31, 2019	14,628	16,005	563	304	2,757	34,257
Cost	14,628	20,517	1,000	3,575	2,757	42,477
Accumulated amortization	-	(4,512)	(437)	(3,271)	-	(8,220)
Balance at December 31, 2019	14,628	16,005	563	304	2,757	34,257
Additions	-	12,955	-	148	-	13,103
Disposals	-	(36)	(694)	(1)	-	(731)
Amortization	-	(909)	(6)	(120)	-	(1,035)
Translation adjustment	2,513	-	137	65	-	2,715
Balance at December 31, 2020	17,141	28,015	-	396	2,757	48,309
Cost	17,141	33,220	531	3,861	2,757	57,510
Accumulated amortization	-	(5,205)	(531)	(3,465)	-	(9,201)
Balance at December 31, 2020	17,141	28,015	-	396	2,757	48,309

					Parent company
	Concessions	Contract right	Software		Total
Balance at December 31, 2018	15,240	105	277		15,622
Additions	1,724	-	101		1,825
Disposals	(65)	-	-		(65)
Amortization	(906)	(6)	(199)		(1,111)
Balance at December 31, 2019	15,993	99	179		16,271
Cost	20,505	223	2,505		23,233
Accumulated amortization	(4,512)	(124)	(2,326)		(6,962)
Balance at December 31, 2019	15,993	99	179		16,271
Additions	12,955	-	104		13,059
Disposals	(36)	(94)	(1)		(131)
Amortization	(909)	(5)	(59)		(973)
Merger of Ferrous	12	-	5		17
Balance at December 31, 2020	28,015	-	228		28,243
Cost	33,220	130	2,618		35,968
Accumulated amortization	(5,205)	(130)	(2,390)		(7,725)
Balance at December 31, 2020	28,015	-	228		28,243

b) Early extension of railway concessions - In December 2020, the Company agreed terms with the Brazilian Federal Government to extend its concessions to operate the Estrada de Ferro Carajás ("EFC") and Estrada de Ferro Vitória a Minas ("EFVM") railways by 30 years, from 2027 to 2057.

Upon the signing, the Company recognized an intangible asset related to its right of use of EFC and EFVM and, at the same time, in exchange for the early renewal of its contracts, a liability in the amount of R\$12,016 (note 13). The total obligation is comprised by the following commitments:

- Grants payments for the concessions, payable in quarterly installments, in the total amount of R\$2,818. This commitment is measured based on the net present value of the thirty-year projected cash flows, discounted at 11.04%.
- The construction of 383 km section of the Midwest Integration Railway ("FICO"), between the municipalities of Mara Rosa, in Goiás, and Água Boa, in Mato Grosso. The construction is planned to start in 2021 and its execution is expected to take 6 years. As at December 31, 2020, its estimated cost of construction, discounted to the present value at 2.59%, is R\$6,789.

- An infrastructure program, envisaging over 450 separate projects designed to improve safety and reduce trespass where the railways pass through urban areas. The program will benefit 25 and 33 municipalities intercepted by EFC and EFVM, respectively. As at December 31, 2020, its estimated cost of construction, discounted to the present value at 3.08%, is R\$1,372.
- Acquisition and delivery of rails and sleepers, which the Federal Government will use for the construction of section II of the West-East Integration Railway ("FIOL"), which will connect the municipalities of Caetité and Barreiras, in Bahia, and other miscellaneous commitments. As at December 31, 2020, these commitments, discounted to the present value at 2.67%, are estimated at approximately R\$1,037.

The concession contract renewal requires the review and physical inspection of the railway assets by the National Land Transport Agency ("ANTT"), which may impact the amount of liabilities assumed by the Company. Additionally, the ANTT may require, at their discretion, further investments on the concession network, whose conditions and limitations will be established in an addendum. In both circumstances, discussions on the contracts' economic and financial rebalancing will be required. Furthermore, there is a provision for the Company to complete a minimum percentage of certain investments by 2027.

Additionally, as a condition for signing the contracts, the Company paid for a guarantee insurance in the amount of R\$1,026 during the year ended on December 31, 2020. These insurance contracts guarantee cover indemnifications, up to the amount established in the insurance policy, in the event of possible losses resulting from the Company not being in compliance with its assumed contractual obligations in relation to the concession contracts. The contracts also provide for the payment of additional insurance policies in the amount of approximately R\$1,000, based on certain contractual milestones.

c) Goodwill – Includes the goodwill arose from the acquisition of iron ore and nickel businesses and the goodwill from the incorporation of Valepar into Vale in 2017. This goodwill was recognized on the acquisition of Vale controlling interest by Valepar, based on the expected future returns on the ferrous segment. The Company has not recognized the deferred taxes over the goodwill, since there are no differences between the tax basis and accounting basis. The Company assesses annually the recoverable amount of the goodwill.

d) Research and development project and patents – Refers to in-process research and development projects and patents identified in the business combination of New Steel Global N.V. (note 15). The intangible assets of research and development are not subject to amortization until the operational phase is reached.

Accounting policy

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

The estimated useful lives are as follows:

	Useful life
Railways concessions	3 to 50 years
Usufruct	22 to 31 years
Software	5 years

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



17. Property, plant and equipment

a) Movements during the year

Consolidated									
	Building and land	Facilities	Equipment	Mineral properties	Railway equipment	Right of use assets	Others	Constructions in progress	Total
Balance at December 31, 2018	44,893	43,536	24,826	32,931	14,712	-	13,463	13,120	187,481
Effects of IFRS 16/CPC 06 (R2) adoption	-	-	-	-	-	6,978	-	-	6,978
Additions (i)	-	-	-	-	-	558	-	17,075	17,633
Disposals	(420)	(305)	(279)	(656)	(606)	(29)	(98)	(87)	(2,480)
Assets retirement obligation	-	-	-	1,767	-	-	-	-	1,767
Depreciation, depletion and amortization	(2,027)	(2,628)	(3,417)	(2,378)	(1,154)	(758)	(1,483)	-	(13,845)
Impairment (note 18)	(2,373)	(4,581)	(2,914)	(2,439)	(1,383)	(212)	(1,895)	(1,452)	(17,249)
Acquisition of subsidiary (ii)	289	156	173	1,044	-	6	2	186	1,856
Translation adjustment	1,022	702	688	1,759	77	276	445	623	5,592
Transfers	1,753	1,833	3,844	1,274	1,417	-	1,704	(11,825)	-
Balance at December 31, 2019	43,137	38,713	22,921	33,302	13,063	6,819	12,138	17,640	187,733
Cost	76,462	69,208	47,387	71,854	18,949	7,577	27,484	17,640	336,561
Accumulated depreciation	(33,325)	(30,495)	(24,466)	(38,552)	(5,886)	(758)	(15,346)	-	(148,828)
Balance at December 31, 2019	43,137	38,713	22,921	33,302	13,063	6,819	12,138	17,640	187,733
Additions (i)	-	-	-	-	-	646	-	21,528	22,174
Disposals	(75)	(504)	(39)	(64)	(29)	-	(39)	(436)	(1,186)
Assets retirement obligation	-	-	-	2,931	-	-	-	-	2,931
Depreciation, depletion and amortization	(2,245)	(2,384)	(3,726)	(2,344)	(936)	(875)	(1,489)	-	(13,999)
Impairment (note 18)	(729)	(904)	(124)	(458)	-	(2)	(434)	(799)	(3,450)
Transfer to assets held for sale	(178)	(648)	(17)	(324)	-	(1)	(9)	(526)	(1,703)
Translation adjustment	3,578	2,642	3,672	7,016	74	1,534	1,529	1,291	21,336
Transfers	1,158	2,533	2,950	1,794	936	-	1,272	(10,643)	-
Balance at December 31, 2020	44,646	39,448	25,637	41,853	13,108	8,121	12,968	28,055	213,836
Cost	78,653	60,750	55,500	88,716	20,022	10,216	30,627	28,055	372,539
Accumulated depreciation	(34,007)	(21,302)	(29,863)	(46,863)	(6,914)	(2,095)	(17,659)	-	(158,703)
Balance at December 31, 2020	44,646	39,448	25,637	41,853	13,108	8,121	12,968	28,055	213,836

Parent company									
	Building and land	Facilities	Equipment	Mineral properties	Railway equipment	Right of use assets	Others	Constructions in progress	Total
Balance at December 31, 2018	28,294	30,593	10,004	7,689	12,590	-	6,650	7,996	103,816
Effects of IFRS 16/CPC 06 (R2) adoption	-	-	-	-	-	2,415	-	-	2,415
Additions (i)	-	-	-	-	-	7	-	6,904	6,911
Disposals	(327)	(201)	(213)	(202)	(606)	-	(68)	(59)	(1,676)
Assets retirement obligation	-	-	-	1,234	-	-	-	-	1,234
Depreciation, depletion and amortization	(1,024)	(1,497)	(1,394)	(578)	(982)	(308)	(1,042)	-	(6,825)
Transfers	1,409	1,325	1,816	(990)	1,764	-	1,301	(6,625)	-
Balance at December 31, 2019	28,352	30,220	10,213	7,153	12,766	2,114	6,841	8,216	105,875
Cost	36,332	39,296	18,564	9,598	18,306	2,422	14,750	8,216	147,484
Accumulated depreciation	(7,980)	(9,076)	(8,351)	(2,445)	(5,540)	(308)	(7,909)	-	(41,609)
Balance at December 31, 2019	28,352	30,220	10,213	7,153	12,766	2,114	6,841	8,216	105,875
Additions (i)	-	-	-	-	-	348	-	10,700	11,048
Disposals	(49)	(424)	(20)	-	(29)	-	13	(117)	(626)
Assets retirement obligation	-	-	-	227	-	-	-	-	227
Depreciation, depletion and amortization	(1,234)	(1,637)	(1,424)	(490)	(904)	(350)	(1,087)	-	(7,126)
Merger	679	325	73	990	1	3	5	(136)	1,940
Transfers	551	2,083	1,390	1,136	879	-	1,293	(7,332)	-
Balance at December 31, 2020	28,299	30,567	10,232	9,016	12,713	2,115	7,065	11,331	111,338
Cost	37,516	41,631	19,890	12,124	19,162	2,773	15,631	11,331	160,058
Accumulated depreciation	(9,217)	(11,064)	(9,658)	(3,108)	(6,449)	(658)	(8,566)	-	(48,720)
Balance at December 31, 2020	28,299	30,567	10,232	9,016	12,713	2,115	7,065	11,331	111,338

(i) Includes capitalized borrowing costs.

(ii) Refers mainly to the acquisition of Ferrous (note 15).

b) Right-of-use assets (Leases)

	December 31, 2019	Additions and contract modifications	Depreciation	Translation adjustment	December 31, 2020
Ports	2,958	267	(217)	724	3,732
Vessels	2,341	-	(262)	700	2,779
Pellets plants	676	180	(173)	-	683
Properties	521	174	(142)	26	579
Energy plants	250	-	(39)	76	287
Mining equipment and locomotives	73	22	(42)	8	61
Total	6,819	643	(875)	1,534	8,121

Lease liabilities are presented in note 22.

Accounting policy

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

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

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

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

The estimated useful lives are as follows:

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

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

Expenditures and stripping costs

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

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

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

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

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

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

The Company does not recognize right-of-use assets and liabilities for leases with less than 12 months of lease term and/or leases of low-value assets. The payments associated to these leases are recognized as an expense on a straight-line basis over the lease term.

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

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the right-of-use asset or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero. Lease liabilities are presented in note 22.

Critical accounting estimates and judgments

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

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

18. Impairment and onerous contracts

The impairment losses recognized in the year are presented below:

Segments by class of assets	Income statement		
	Impairment		
	2020	2019	2018
Base metals – nickel	4,728	10,319	-
Coal	4,851	6,949	-
Other assets	1,093	487	713
Impairment of non-current assets	10,672	17,755	713
Onerous contracts	-	987	1,527
Disposals of non-current assets	1,147	2,020	1,283
Impairment and disposals of non-current assets	11,819	20,762	3,523

a) Impairment of assets

During 2020, some of the Company's operations were temporarily halted due to the COVID-19 pandemic. These operations have already been resumed and, therefore, the main long-term assumptions applied in the preparation of their discounted cash flow models, such as commodity prices and production levels, remained unchanged and did not result in the impairment loss for these assets.

The Company tested for impairment the cash generating units ("CGU") for which a triggering event was identified and for goodwill. The recoverable amount of each CGU under the Company's impairment test was assessed using the fair value less costs of disposal model ("FVLCD"), through discounted cash flow techniques, which is classified as "level 3" in the fair value hierarchy, taking into consideration offers and purchase agreements, if applicable.

The cash flows were discounted by using a post-tax discount rate expressed in real terms, which represents an estimate of the rate that a market participant would apply having regard to the time value of money and the asset's specific risk. The Company used its weighted average cost of capital ("WACC") as a starting point for determining the discount rates, with appropriate adjustments for the risk profile of the countries in which the individual CGU operate.

Base Metals

Vale Nouvelle-Calédonie S.A.S. ("VNC"), Nickel – Since 2019, the New Caledonian operation has experienced challenging issues, mainly in relation to production and processing of refined nickel, associated with the challenges imposed by the remote location of this asset. The Company started studies of alternatives for VNC, taking into account the operational and commercial options to improve VNC's short-term cash flows. Based on the revision of the business plan in 2019, the Company reduced the expected production levels of its refined nickel product for remaining useful life of the mine, resulting in an impairment loss of R\$10,319 recorded as at December 31, 2019.

In 2020, the Company started looking for a potential buyer and started studying the other options available to exit the operation, including placing VNC in care and maintenance, in preparation for a possible closing of the operation. Due to the negotiations that took place during the year, VNC's assets and liabilities were classified as "held for sale" and measured at fair value resulting in the recognition of an impairment loss in the amount of R\$2,155 recognized in the income statement as "Impairment and disposal of non-current assets" for the year ended December 31, 2020. With the recognition of this additional impairment, the carrying value of the CGU was reduced to zero as at December 31, 2020.

In December 2020, the Company signed a binding put option agreement for its interest in VNC to a consortium constituted in a new company called "Prony Resources", led by the current management and employees of VNC and supported by the Caledonian and French authorities with Trafigura as a non-controlling shareholder. Closing is expected for the first quarter of 2021, subject to consultation with the VNC workers council and other conditions, including approvals by the Caledonian and French state authorities.

The terms of the proposal take into account the financing needs to continue VNC operations, including the commitment to invest in the conversion of the tailings deposition from wet to dry-stacking ("Project Lucy"), which will cost approximately R\$2,573 (US\$500 million). Therefore, the Company recognized a loss in that amount due to the potential sale agreement, presented in the income statement as "Impairment and disposal of non-current assets" for the year ended December 31, 2020. Thus, the total loss related to VNC recorded in 2020 is R\$4,728.

Goodwill, Nickel - Out of Vale's total goodwill (note 16), R\$10,008 is allocated to the Base Metals segment. Although the Company recognized an impairment loss in the New Caledonia CGU, the impairment test of goodwill demonstrates that there were no identified losses related to the goodwill allocated to the nickel business, based on cash flows projected until 2048 and discounted at rates ranging between 4.5% and 5.1% (2019: rates ranging between 5% and 6%).

Coal

Moatize mine, Mozambique - The Company has coal operations in Mozambique, through Vale Moçambique S.A. ("Vale Moçambique"), where metallurgical and thermal coal operations are in ramp-up. Vale Moçambique is a company controlled by Vale, and Mitsui & Co. Ltd. ("Mitsui") holds a non-controlling interest of 15%. Coal products are transported from the Moatize mine to the maritime terminal by the Corredor Logístico de Nacala ("CLN"), a joint venture between Vale and Mitsui, which holds the railways and port concessions located in Mozambique and Malawi.

In 2019, the Company recognized an impairment loss in the amount of R\$6,949, corresponding to the total assets of the coal CGU, mainly due to technical difficulties in the project and operation of the assets related to this CGU. In addition, the Company lowered its long-term price assumption for both metallurgical and thermal coal and, carried out a detailed review of the mining plan, leading to a significant reduction on the estimated marketable coal reserves. In addition, the Company tested for impairment the assets acquired during the year and recognized a loss of R\$745 in the income statement for the year ended December 31, 2020.

Due to the challenges identified, the Company decided to implement a new strategy to reach the ramp-up of the coal business, including the revamp of the two processing plants and the adaptation to the new flowsheet.

However, in addition to the slowdown in the operational activities, the COVID-19 pandemic has caused travel and equipment transportation restrictions and so, the Company has revisited the plans for the Mozambique coal processing plant stoppage. The halting of the processing plants' operations that was previously expected to start in the second quarter of 2020, was postponed to late 2020 and completion is scheduled for the first quarter of 2021.

Therefore, the delay in the execution of the projects planned to speed up the ramp-up, associated with the developments on the detailed technical studies of the projects that are necessary to reach out the total capacity of the plants, resulted in the push back of the investment plan for the Moatize processing plants. As a consequence, the projected production volumes to reach the plants' maximum installed capacity were also postponed.

Loans receivable, Nacala BV - The Company has loans receivable from Nacala (note 29), which have been impacted by the change in the production curve of the Moatize mine, following the reduction in the expected volume of coal to be transported in CLN, which has impacted CLN's projected cash flows. Therefore, the Company carried out an impairment test for the loan receivable, resulting in a loss of R\$4,106, based on discounted cash flows at the average rate of 8.2%. As at December 31, 2020, the carrying amount of the receivable is R\$5,800, after the impairment charge.

The assumption subject to the most estimation uncertainty for the FVLCD calculation is the volume of coal transported. To illustrate this sensitivity, the carrying value would be fully impaired by a reduction of approximately 5 million tons per year (out of the total capacity of 22 million tons per year), considering the other constant assumptions, if all other inputs remained constant.

Ferrous Minerals

Goodwill, Iron ore and pellets - The Company did not identify changes in circumstances or indicatives that could result in a reduction to the recoverable value of the CGU of Iron ore and Pellets. Although, the Company tested for impairment the goodwill, based on cash flows projected until 2050 and discounted at 5.6% (2019: 6.3%), and there were no losses identified. Out of Vale's total goodwill (Note 16), R\$7,133 is allocated to the Ferrous Minerals segment.

Simões Filho, Ferroalloys of Manganese - In September 2020, the Company decided to shut down the Simões Filho operation, a plant located in the Brazilian State of Bahia, that was part of Vale Manganês S.A. ("Vale Manganês") business and produced manganese ferroalloys. The Company continues to operate the remaining Vale Manganês plants and producing manganese ore.

The Company tested this CGU for impairment, resulting in the full impairment of inventories, other assets related to the Simões Filho plant, and additional provisions required for the closure of the site. As a result, the Company recognized an impairment loss of R\$412 as "Impairment and disposals of non-current assets", and the carrying amount for this CGU was R\$369 at December 31, 2020.

Other assets

In 2019, the Company reviewed the business plan of biological assets controlled by Biopalma, a company that cultivates palm oil plantation, which is the raw material for palm oil. This revision resulted in a reduction in Biopalma's expected operational capacity. The Company has also reviewed its long-term price assumptions based on the market conditions at that time. Thus, the Company tested the CGU for impairment and an impairment loss of R\$489 was recognized in the income statement for the year ended December 31, 2019.

In September 2020, the Company signed an agreement with Brasil Bio Fuels S.A. to sell its entire interest in Biopalma for an immaterial consideration. As a result of this agreement, the Company recognized a loss of R\$681, which was recognized in the income statement as "Impairment and disposals of non-current assets" for the year ended December 31, 2020, reducing the carrying value of this CGU to zero. Biopalma's divestment was completed in November 2020.

b) Onerous contract

In 2019, the Company reviewed its expectation of iron ore production and sales volumes of the Midwest system. Following the revised plan for the upcoming years, the Company has recognized an additional provision of R\$987 in relation to the costs of certain long-term contracts, with minimum guaranteed volume for fluvial transportation and port structure. In 2020, there were no changes in the expectation related to the ore production and sales volumes of the Midwest system and, therefore, no impairment charge has been recognized in the income statement for the year ended December 31, 2020.

c) Disposals of assets

Refers to non-viable projects and operating assets written off through sale or obsolescence. Additionally, includes assets write-off of the Córrego do Feijão mine and those related to the other upstream dams in Brazil, as described in note 23.

Accounting policy

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

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

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

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

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

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

Critical accounting estimates and judgments

Significant judgements, estimates and assumptions are required to determine whether an impairment trigger has occurred and to prepare the Company's cash flows. Management uses the budgets approved as a starting point and key assumptions are, but not limited to: (i) mineral reserves and mineral resources measured by internal experts; (ii) costs and investments based on the best estimate of projects as supported by past performance; (iii) sale prices consistent with projections available in reports published by industry considering the market price when appropriate; (iv) the useful life of each cash-generating unit (ratio between production and mineral reserves); and (v) discount rates that reflect specific risks relating to the relevant assets in each cash-generating unit.

These assumptions are susceptible to risks and uncertainties and may change the Company's projection and, therefore, may affect the recoverable value of assets.

19. Financial and capital risk management

The Company is exposed to several financial and capital risk factors that may impact the its performance and equity position. The evaluation of the exposure to financial and capital risks is performed periodically to support the decision making process regarding the risk management strategy.

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

The Board of Directors establishes and supervises the management of financial risks with the support of a Financial Committee. The Financial Committee ensures that Company's financial activities are governed by appropriate policies and procedures and that financial risks are identified, measured and managed in accordance with the Company's policies and objectives.

The Company has developed its strategy through an integrated view of the risks to which it is exposed, considering not only the risk generated by the variables traded in the financial market (market risk) and the liquidity risk, but also the risk arising from obligations assumed by third parties to the Company (credit risk), among others.

The Company uses derivative financial instruments to protect its exposure to these market risks arising from operating, financing and investment activities. The portfolios composed of these financial instruments are monitored on a monthly basis, allowing the monitoring of financial results and their impact on cash flow. Currently, the Company applies hedge accounting to its net investment in foreign operation and nickel and palladium revenue programs.

The Company does not have any derivatives increasing financial leverage beyond the nominal amount of its contracts. The Company contracts derivatives solely to mitigate market risks.

Risks	Origin of the exhibition	Management
Market Risk - Exchange Rate	Contracts for the sale of ore and financial instruments that are not denominated in US\$	Swap and forward operations
Market risk - Interest rate	Loans and financing indexed to LIBOR	Swap operations
Market risk - Product and input prices	Volatility of commodity and input prices	Option contracts
Credit Risk	Receivables, derivative transactions, guarantees, advances to suppliers and financial investments	Portfolio diversification and policies for monitoring counterparty solvency and liquidity indicators
Liquidity risk	Contractual or assumed obligations	Availability of revolving credit lines

a) Method and techniques of valuation of derivatives

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 daytime horizon.

The derivative financial instruments were evaluated using the curves and market prices that impact each instrument on the calculation dates. For the pricing of options the Company generally uses the Black & Scholes model. In this model, the fair value of the derivative is obtained basically as a function of the volatility and price of the underlying asset, the exercise price of the option, the risk-free interest rate and the term to maturity of the option. In the case of options where the result is a function of the average price of the underlying asset in a certain period of the option's life, called Asian, the Company uses the Turnbull & Wakeman model. In this model, in addition to the factors that influence the option price in the Black & Scholes model, the average price formation period is considered.

In the case of swaps, both the present value of the active and the passive tip are estimated by discounting their cash flows by the interest rates in the corresponding currencies. The fair value is obtained by the difference between the present value of the active tip and the passive tip of the swap in the reference currency. In the case of swaps linked to Brazilian long-term interest rate ("TJLP"), the fair value calculation considers the constant TJLP, i.e., projections of future cash flows in reais are made considering the last TJLP disclosed.

Forward and future contracts are priced using the future curves of the respective underlying assets. These curves are usually obtained from the exchanges where these assets are traded, such as the London Metals Exchange ("LME"), the Commodities Exchange ("COMEX") or other market price providers. When there is no price for the desired maturity, the Company uses interpolations between the available maturities.

a.i) Libor discontinuation

In July 2017, the UK Financial Conduct Authority ("FCA"), which regulates the London Interbank Offered Rate ("LIBOR"), announced the effective discontinuation of that rate from the end of 2021, as banks will no longer be required to contribute rate quotations. The Company is currently evaluating the potential impact of the eventual replacement of the LIBOR interest rate.

a.ii) Effects of derivatives on the balance sheet

	Consolidated			
	Assets			
	December 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	37	197	337	474
Eurobonds swap	-	13	-	-
Pre-dollar swap	-	46	78	31
Forward transactions	-	-	6	-
	37	256	474	505
Commodities price risk				
Base metals products	158	-	606	36
Gasoil, Brent and freight	503	-	80	-
	661	-	686	36
Others	-	91	-	201
	-	91	-	201
Total	698	347	1,160	742

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Expressed in millions of Brazilian reais, unless otherwise stated

Consolidated			
Liabilities			
	December 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	576	2,724	196 322
IPCA swap	382	520	52 150
Eurobonds swap	19	-	24 117
Pre-dollar swap	318	303	32 148
Libor swap	5	31	- -
Forward transactions	6	-	- -
	1,306	3,578	304 737
Commodities price risk			
Base metals products	242	-	13 16
Gasoil, Brent and freight	64	-	33 -
	306	-	46 16
Others	100	-	27 484
Total	1,712	3,578	377 1,237

Parent company			
Assets			
	December 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	-	-	29 -
IPCA swap	37	197	337 474
Pre-dollar swap	-	46	78 23
Forward transactions	-	-	6 -
	37	243	450 497
Others	-	95	- 96
	-	95	- 96
Total	37	338	450 593

Parent company			
Liabilities			
	December 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	493	2,253	196 230
IPCA swap	288	520	52 110
Pre-dollar swap	280	303	32 148
Forward transactions	6	-	- -
	1,067	3,076	280 488
Others	99	-	- 484
Total	1,166	3,076	280 972

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Expressed in millions of Brazilian reais, unless otherwise stated



a.iii) Net exposure

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Foreign exchange and interest rate risk				
CDI & TJLP vs. US\$ fixed and floating rate swap	(3,300)	(465)	(2,746)	(397)
IPCA swap	(668)	609	(574)	649
Eurobonds swap	(6)	(141)	-	-
Pre-dollar swap	(575)	(71)	(537)	(79)
Libor swap	(36)	-	-	-
Forward transactions	(6)	6	(6)	6
	(4,591)	(62)	(3,863)	179
Commodities price risk				
Base metals products	(84)	613	-	-
Gasoil, Brent and freight	439	47	-	-
	355	660	-	-
Others	(9)	(310)	(4)	(388)
	(9)	(310)	(4)	(388)
Total	(4,245)	288	(3,867)	(209)

a.iv) Effects of derivatives on the income statement

	Consolidated			Parent company	
	Gain (loss) recognized in the income statement				
	Year ended December 31,				
	2020	2019	2018	2020	2019
Foreign exchange and interest rate risk					
CDI & TJLP vs. US\$ fixed and floating rate swap	(3,498)	(168)	(750)	(2,974)	(139)
IPCA swap	(1,259)	469	(105)	(1,223)	454
Eurobonds swap	182	(153)	(117)	-	-
Pre-dollar swap	(761)	6	(82)	(721)	(2)
Libor swap	(37)	-	-	-	-
	(5,373)	154	(1,054)	(4,918)	313
Commodities price risk					
Base metals products	58	222	(99)	-	-
Gasoil, Brent and freight	(496)	158	16	-	-
	(438)	380	(83)	-	-
Others	285	392	131	46	260
	285	392	131	46	260
Total	(5,526)	926	(1,006)	(4,872)	573

a.v) Effects of derivatives on the cash flows

	Consolidated			Parent company	
	Financial settlement inflows (outflows)				
	Year ended December 31,				
	2020	2019	2018	2020	2019
Foreign exchange and interest rate risk					
CDI & TJLP vs. US\$ fixed and floating rate swap	(737)	(1,536)	(478)	(625)	(1,514)
IPCA swap	1	(101)	11	-	(6)
Eurobonds swap	(24)	(19)	(14)	-	-
Pre-dollar swap	(251)	35	34	(251)	35
Libor swap	(2)	-	-	-	-
	(1,013)	(1,621)	(447)	(876)	(1,485)
Commodities price risk					
Base metals products	55	195	23	-	-
Gasoil, Brent and freight	(1,112)	12	187	-	-
	(1,057)	207	210	-	-
Others	327	79	(13)	-	-
Derivatives designated as cash flow hedge accounting					
Nickel	1,460	48	-	-	-
Palladium	3	-	-	-	-
	1,463	48	-	-	-
Total	(280)	(1,287)	(250)	(876)	(1,485)

a.vi) Hedge accounting

	Consolidated			Parent company	
	Gain (loss) recognized in the other comprehensive income				
	Year ended December 31,				
	2020	2019	2018	2020	2019
Net investments hedge	(13,005)	(1,700)	(543)	(13,005)	(1,700)
Cash flow hedge (Nickel and Palladium)	(631)	593	-	-	-

Net investment hedge - The Company uses hedge accounting for the foreign exchange risk arising from Vale S.A.'s net investments in Vale International S.A. and Vale Holding BV. With the hedge program, the Company's debt with third parties denominated in dollars and euros serves as a hedge instrument for investments in these subsidiaries. As of December 31, 2020, the amount of debt designated as a hedge instrument for these investments is R\$11,271 (US\$2,168 million) and R\$4,783 (EUR750 million). As a result of the hedge program, the impact of the exchange rate variation on the debt denominated in dollars and euros is now partially recorded in other comprehensive results, under "accumulated translation adjustments".

Cash Flow Hedge (Nickel) - In order to reduce the cash flow volatility due to nickel price fluctuations, the Company implemented the Nickel Revenue Hedge Program in 2019. In this program, hedging operations were executed, through option contracts, to protect a portion of the projected volume of sales at floating, highly probable realization prices, guaranteeing prices above the average unit cost of nickel production for the protected volumes.

In April 2020, the option contracts were liquidated in order to increase the Company's cash position as a result of COVID-19 in order to increase the Company's liquidity, temporarily discontinuing the Nickel Revenue Hedge program. The amount that was accumulated in the cash flow hedge reserve up to the settlement date of these option contracts is being recycled to income as the sale of nickel is recognized in the income statement.

In October 2020, the Company executed new hedge operations, continuing the Nickel Revenue Hedge program. The contracts are traded on the London Metal Exchange or over-the-counter market and the hedged item's P&L is offset by the hedged item's P&L due to Nickel price variation.

Flow	Notional (ton)		Bought / Sold	Average strike (US\$/ton)	Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	December 31, 2020	December 31, 2019			December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2020	2021
Nickel Revenue Hedging Program (i)									
Call options	58,620	75,984	S	17,664	(239)	(49)	-	51	(239)
Put options	58,620	75,984	B	15,000	143	652	1,412	30	143
Total					(96)	603	1,412	81	(96)

(i) With the hedge structure, the company ensures prices between US\$15,000/t and US\$17,664/t for the program's sales volume.

Cash flow hedge (Palladium) - 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)		Bought / Sold	Average strike (US\$/t oz)	Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	December 31, 2020	December 31, 2019			December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2020	2021
Palladium Revenue Hedging Program									
Palladium Forwards	-	-	S	-	-	-	16	-	-
Call Options	7,200	-	S	2,347	(5)	-	-	2	(5)
Put Options	7,200	-	B	2,050	1	-	-	-	1
Total					(4)	-	-	2	(4)

b) Market risk - Foreign exchange and interest rates

The Company's cash flow is exposed to the volatility of several currencies against the U.S. dollar. While most of our product prices are indexed to U.S. dollars, most of our costs, disbursements and investments are indexed to currencies other than the U.S. dollar, principally the Brazilian real and the Canadian dollar.

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

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

(b.i) Protection programs for the R\$ and EUR 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 Brazilian Interbank Interest rate ("CDI"), TJLP and consumer price index ("IPCA"). In those swaps, the Company pays fixed or floating rates in US\$ and receives payments in R\$ linked to the interest rates of the protected liabilities. Swap transactions were implemented to convert into US\$ the cash flows from certain debt instruments issued in Euros by the Company, where receives fixed rates in EUR and pays fixed rates in US\$. 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\$ and EUR.

Flow	Notional		Index	Average rate	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
	December 31, 2020	December 31, 2019			December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2020	2021	2022	2023+
CDI vs. US\$ fixed rate swap					(2,454)	(155)	(695)	218	(314)	(500)	(1,640)
Receivable	R\$ 9,445	R\$ 2,115	CDI	100.09%							
Payable	US\$ 2.213	US\$ 558	Fix	2.09%							
TJLP vs. US\$ fixed rate swap					(846)	(304)	(231)	49	(259)	(219)	(368)
Receivable	R\$ 1,651	R\$ 2,111	TJLP +	1.14%							
Payable	US\$ 460	US\$ 601	Fix	3.05%							
R\$ fixed rate vs. US\$ fixed rate swap					(575)	(73)	(249)	59	(326)	(264)	15
Receivable	R\$ 2,512	R\$ 2,173	Fix	5.43%							
Payable	US\$ 621	US\$ 604	Fix	0.31%							
IPCA vs. US\$ fixed rate swap					(900)	185	(54)	65	(379)	(41)	(480)
Receivable	R\$ 2,363	R\$ 2,826	IPCA +	5.10%							
Payable	US\$ 622	US\$ 759	Fix	4.02%							
IPCA vs. CDI swap					232	424	241	5	35	197	-
Receivable	R\$ 694	R\$ 1,634	IPCA +	6.63%							
Payable	R\$ 550	R\$ 1,350	CDI	98.76%							
EUR fixed rate vs. US\$ fixed rate swap					(6)	(141)	(24)	24	(19)	(18)	31
Receivable	€ 500	€ 500	Fix	3.75%							
Payable	US\$ 613	US\$ 613	Fix	4.29%							
Forward	R\$ 916	R\$ 121	B	5.96	(6)	6	-	17	-	-	(6)

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Expressed in millions of Brazilian reais, unless otherwise stated

b.ii) Protection program for Libor floating interest rate US\$ denominated debt

The Company has also exposure to interest rates risks over loans and financings. The US Dollar floating rate debt in the portfolio consists mainly of loans including export pre-payments, commercial banks and multilateral organizations loans. In general, such debt instruments are indexed to the LIBOR in US dollar.

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

Flow	Notional		Index	Average rate	Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
	December 31, 2020	December 31, 2019			December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2020	2021	2022	2023+
Libor vs. US\$ fixed rate swap					(36)	-	-	16	(7)	(7)	(22)
Receivable	US\$ 950	-	Libor	0.13%							
Payable	US\$ 950	-	Fix	0.48%							

c) Market risk - Product prices and input costs

The Company is also exposed to market risks associated with the price volatility of commodities and inputs, especially freight and fuel costs. In line with its risk management policy, risk mitigation strategies involving commodities are used to reduce cash flow volatility. These mitigation strategies incorporate derivative instruments, predominantly forward, futures and options.

c.i) Protection program for product prices and input costs

Flow	Notional		Bought / Sold	Average strike (US\$/bbl)	Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
	December 31, 2020	December 31, 2019			December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2020	2021+
Brent crude oil (bbl)									
Call options	13,746,945	7,048,500	B	55	478	45	-	58	478
Put options	13,746,945	7,048,500	S	28	(59)	(14)	(364)	5	(59)
Gasoi (bbl)									
Call options	-	7,710,750	C	-	-	26	-	-	-
Put options	-	7,710,750	V	-	-	(10)	(734)	-	-
Forward Freight Agreement (days)									
Freight forwards (days)	1,625	1,050	C	11,893	22	1	(8)	5	22

Brent Crude Oil and Gasoi options - 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 Gasoi (10ppm) for different portions of the exposure. The derivative transactions were negotiated over-the-counter and the protected item is part of the costs linked to the price of fuel oil used on ships. The financial settlement inflows/outflows are offset by the protected items' losses/gains.

Freight derivative - 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 the 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 price changes. The FFAs are contracts traded over the counter and can be cleared through a Clearing House, in this case subject to margin requirements.

d) Embedded derivatives in contracts

Flow	Notional				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value
	December 31, 2020	December 31, 2019	Bought / Sold	Average strike	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2020	2021+
Warrants da Wheaton Precious Metals Corp. (quantity of warranties)									
Call options	-	10,000,000	B	-	-	105	110	-	-
Stock options associated with convertible debentures (quantity)									
Conversion options	-	140,239	S	8,346	-	(206)	1,223	-	-
Option related to a Special Purpose Entity “SPE” (quantity)									
Call option	137,751,623	137,751,623	B	2.92	95	96	-	11	95
Embedded derivatives in contracts for the sale of part of its shareholding (quantity)									
Put option	1,105,070,863	1,105,070,863	S	4.23	(100)	(278)	-	19	(99)
Embedded Derivative in natural gas purchase agreement (volume/month)									
Call options	746,667	746,667	S	233	-	(3)	-	-	-
Embedded in raw material purchase contract (ton)									
Nickel forwards	1,979	1,497	S	15,831	10	9	-	4	10
Copper forwards	976	1,009	S	7,121	2	(1)	-	1	2

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).

Call options associated to debentures convertible into shares – In this contract, BNDESPar was granted call options on VLI S.A. ("VLI") shares held by Vale of up to 8% of VLI's capital stock. On December 9, 2020, the Company was notified by BNDESPar of the full exercise of the call option for shares issued by VLI. With the exercise of this option, Vale received R\$1,223 for an 8% stake in VLI (note 14).

Option related to a Special Purpose Entity "SPE" - The Company acquired in January 2019 a call option related to shares of certain special purpose entities, which are part of a wind farm located in Bahia, Brazil. This option was acquired in the context of the Company's signing of electric power purchase and sale agreements with an SPE, supplied by this wind farm.

Options to purchase shares of associates - In 2014, the Company sold part of its stake in an associate to an investment fund, of which sales contract establishes, under certain conditions, a minimum return guarantee on the investment whose maturity was extended to December 2021. This is considered an embedded derivative, with payoff equivalent to a put option.

Options on natural gas purchase - 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.

Nickel and copper raw materials - 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.

e) 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 December 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	(2,454)	(5,445)	(8,437)
	US\$ interest rate inside Brazil decrease	(2,454)	(2,569)	(2,688)
	Brazilian interest rate increase	(2,454)	(2,580)	(2,714)
Protected item: R\$ denominated liabilities	R\$ depreciation	n.a.	-	-
TJLP vs. US\$ fixed rate swap	R\$ depreciation	(846)	(1,483)	(2,120)
	US\$ interest rate inside Brazil decrease	(846)	(860)	(874)
	Brazilian interest rate increase	(846)	(898)	(945)
	TJLP interest rate decrease	(846)	(893)	(941)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
R\$ fixed rate vs. US\$ fixed rate swap	R\$ depreciation	(575)	(1,374)	(2,174)
	US\$ interest rate inside Brazil decrease	(575)	(586)	(597)
	Brazilian interest rate increase	(575)	(625)	(672)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
IPCA vs. US\$ fixed rate swap	R\$ depreciation	(900)	(1,781)	(2,661)
	US\$ interest rate inside Brazil decrease	(900)	(925)	(950)
	Brazilian interest rate increase	(900)	(981)	(1,061)
	IPCA index decrease	(900)	(956)	(1,013)
Protected item: R\$ denominated debt	R\$ depreciation	n.a.	-	-
IPCA vs. CDI swap	Brazilian interest rate increase	232	221	211
	IPCA index decrease	232	221	210
Protected item: R\$ denominated debt linked to IPCA	IPCA index decrease	n.a.	(221)	(210)
EUR fixed rate vs. US\$ fixed rate swap	EUR depreciation	(6)	(902)	(1,797)
	Euribor increase	(6)	(10)	(15)
	US\$ Libor decrease	(6)	(9)	(13)
Protected item: EUR denominated debt	EUR depreciation	n.a.	902	1,797
US\$ floating rate vs. US\$ fixed rate swap	US\$ Libor decrease	(36)	(52)	(68)
Protected item: Libor US\$ indexed debt	US\$ Libor decrease	n.a.	52	68
NDF BRL/USD	R\$ depreciation	(6)	(203)	(400)
	US\$ interest rate inside Brazil decrease	(6)	(12)	(18)
	Brazilian interest rate increase	(6)	(38)	(68)
Protected item: R\$ denominated liabilities	R\$ depreciation	n.a.	-	-

Instrument	Instrument's main risk events	Probable	Scenario I	Scenario II
Fuel oil protection				
Options	Price input decrease	419	132	(146)
Protected item: Part of costs linked to fuel oil prices	Price input decrease	n.a.	(132)	146
Forward Freight Agreement				
Forwards	Freight price decrease	22	(8)	(39)
Protected item: Part of costs linked to maritime freight prices	Freight price decrease	n.a.	8	39
Nickel sales fixed price protection				
Forwards	Nickel price decrease	(96)	(96)	(96)
Protected item: Part of nickel revenues with fixed prices	Nickel price decrease	n.a.	96	96
Palladium Revenue Hedging Program				
Options	Palladium price increase	(4)	(23)	(45)
Protected item: Part of palladium future revenues	Palladium price increase	n.a.	23	45
Option - SPCs	SPCs stock value decrease	95	53	11

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Instrument	Main risks	Probable	Scenario I	Scenario II
Embedded derivatives - Raw material purchase (nickel)	Nickel price increase	10	(28)	(67)
Embedded derivatives - Raw material purchase (copper)	Copper price increase	2	(6)	(15)
Embedded derivatives - Gas purchase	Pellet price increase	-	(1)	(3)
Embedded derivatives - Guaranteed minimum return	Stock value decrease	(100)	(435)	(1,403)

f) Credit risk management

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

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

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

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

f.i) Accounts receivable

Vale has a diversified accounts receivable portfolio from a geographical standpoint, with Asia, Europe and Brazil the regions with more significant exposures. According to each region, different guarantees can be used to enhance the credit quality of the receivables. In 2019 and 2018, the expected credit loss on the Company's accounts receivable portfolio is immaterial (see note 10).

f.ii) Financial instruments, except for accounts receivable

To manage the credit exposure arising from cash investments and derivative instruments, credit limits are approved to each counterparty with whom the Company has credit exposure. Furthermore, the Company controls the portfolio diversification and monitor different indicators of solvency and liquidity of the different counterparties that were approved for trading. The carrying amount of the financial assets that represent the exposure to credit risk is presented below:

	Consolidated	
	December 31, 2020	December 31, 2019
Cash and cash equivalents	70,086	29,627
Short-term investments	4,006	3,329
Restricted cash	197	609
Judicial deposits (note 26)	6,591	12,629
Derivative financial instruments (note 19)	1,045	1,902
Investments in equity securities	3,936	2,925
Related parties - Loans (note 29)	5,800	7,737
Total	91,661	58,758

	Parent company	
	December 31, 2020	December 31, 2019
Cash and cash equivalents	14,609	9,597
Short-term investments	1,811	3,309
Restricted cash	20	530
Judicial deposits (note 26)	6,265	12,242
Derivative financial instruments (note 19)	375	1,043
Investments in equity securities	3,438	2,555
Related parties - Loans (note 29)	42	966
Total	26,560	30,242

f.iii) 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 Moody's regarding the main financial institutions that we hire derivative instruments, cash and cash equivalents transactions.

	December 31, 2020		Consolidated December 31, 2019	
	Cash and cash equivalents and investment	Derivatives	Cash and cash equivalents and investment	Derivatives
Aa1	11,487	188	126	-
Aa2	1,884	79	3	44
Aa3	8,735	214	816	185
A1	14,612	109	5,915	-
A2	20	105	11,044	556
A3	27	188	441	423
Baa1	18	-	22	-
Baa2	8	-	190	-
Baa3	-	-	3	472
Ba1	15,516	-	-	-
Ba2	21,767	31	3,365	-
Ba3	-	-	11,023	-
Others	18	131	8	222
	74,092	1,045	32,956	1,902

g) Liquidity risk management

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

The revolving credit facilities available today were provided by a syndicate of several global commercial banks. To mitigate liquidity risk, the Company has two revolving credit facilities, which will mature in 2022 and 2024, in the available amount of R\$25,984 (US\$5,000 million) to assist the short term liquidity management and to enable more efficiency in cash management, being consistent with the strategic focus on cost of capital reduction. As at December 31, 2020 these lines are undrawn.

Accounting policy

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

At the beginning of the hedge operations, the Company documents the type of hedge, the relation between the hedging instrument and hedged items, its risk management objective and strategy for undertaking hedge operations. The Company also documents, both at hedge inception and on an ongoing basis that the hedge is expected to continue to be highly effective. The Company has elected to adopt the new general hedge accounting model in IFRS 9 and designates certain derivatives as either:

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

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

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

Critical accounting estimates and judgments

The fair values of financial instruments that are not traded in active markets are determined using valuation techniques. Vale uses its own judgment to choose between the various methods. Assumptions are based on the market conditions, at the end of the year. An analysis of the impact if actual results are different from management's estimates is present under "Sensitivity analysis of derivative financial instruments".

20. Financial assets and liabilities

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

	December 31, 2020				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 (note 22)	70,086	-	-	70,086	29,627	-	-	29,627
Short-term investments (note 22)	-	-	4,006	4,006	-	-	3,329	3,329
Derivative financial instruments (note 19)	-	-	698	698	-	-	1,160	1,160
Accounts receivable (note 10)	23,377	-	2,567	25,944	9,885	-	310	10,195
Related parties (note 29)	1,009	-	-	1,009	1,289	-	-	1,289
	94,472	-	7,271	101,743	40,801	-	4,799	45,600
Non-current								
Judicial deposits (note 26)	6,591	-	-	6,591	12,629	-	-	12,629
Restricted cash	197	-	-	197	609	-	-	609
Derivative financial instruments (note 19)	-	-	347	347	-	-	742	742
Investments in equity securities	-	3,936	-	3,936	-	2,925	-	2,925
Related parties (note 29)	4,791	-	-	4,791	6,448	-	-	6,448
	11,579	3,936	347	15,862	19,686	2,925	742	23,353
Total of financial assets	106,051	3,936	7,618	117,605	60,837	2,925	5,541	69,303
Financial liabilities								
Current								
Suppliers and contractors	17,496	-	-	17,496	16,556	-	-	16,556
Derivative financial instruments (note 19)	-	-	1,712	1,712	-	-	377	377
Loans, borrowings and leases (note 22)	5,901	-	-	5,901	5,805	-	-	5,805
Dividends payable	6,342	-	-	6,342	6,287	-	-	6,287
Liabilities related to the concession grant	1,088	-	-	1,088	-	-	-	-
Related parties (note 29)	3,759	-	-	3,759	3,951	-	-	3,951
Other financial liabilities	3,347	-	-	3,347	1,330	-	-	1,330
	37,933	-	1,712	39,645	33,929	-	377	34,306
Non-current								
Derivative financial instruments (note 19)	-	-	3,578	3,578	-	-	1,237	1,237
Loans, borrowings and leases (note 22)	72,187	-	-	72,187	54,038	-	-	54,038
Related parties (note 29)	4,903	-	-	4,903	3,853	-	-	3,853
Participative stockholders' debentures (note 21)	-	-	17,737	17,737	-	-	10,416	10,416
Liabilities related to the concession grant	10,928	-	-	10,928	-	-	-	-
Financial guarantees	-	-	4,558	4,558	-	-	2,116	2,116
	88,018	-	25,873	113,891	57,891	-	13,769	71,660
Total of financial liabilities	125,951	-	27,585	153,536	91,820	-	14,146	105,966

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	December 31, 2020				December 31, 2019				Parent company
	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	14,609	-	-	14,609	9,597	-	-	9,597	
Short-term investments	-	-	1,811	1,811	-	-	3,309	3,309	
Derivative financial instruments (note 19)	-	-	37	37	-	-	450	450	
Accounts receivable (note 10)	46,559	-	-	46,559	16,461	-	138	16,599	
Related parties	-	-	-	-	690	-	-	690	
	61,168	-	1,848	63,016	26,748	-	3,897	30,645	
Non-current									
Judicial deposits (note 26)	6,265	-	-	6,265	12,242	-	-	12,242	
Restricted cash	20	-	-	20	530	-	-	530	
Derivative financial instruments (note 19)	-	-	338	338	-	-	593	593	
Investments in equity securities	-	3,438	-	3,438	-	2,555	-	2,555	
Related parties	42	-	-	42	276	-	-	276	
	6,327	3,438	338	10,103	13,048	2,555	593	16,196	
Total of financial assets	67,495	3,438	2,186	73,119	39,796	2,555	4,490	46,841	
Financial liabilities									
Current									
Suppliers and contractors	11,601	-	-	11,601	10,765	-	-	10,765	
Derivative financial instruments (note 19)	-	-	1,166	1,166	-	-	280	280	
Loans, borrowings and leases (note 22)	3,804	-	-	3,804	4,323	-	-	4,323	
Dividends payable	6,342	-	-	6,342	6,287	-	-	6,287	
Liabilities related to the concession grant	1,088	-	-	1,088	-	-	-	-	
Related parties	2,484	-	-	2,484	6,392	-	-	6,392	
Other financial liabilities	9	-	-	9	6	-	-	6	
	25,328	-	1,166	26,494	27,773	-	280	28,053	
Non-current									
Derivative financial instruments (note 19)	-	-	3,076	3,076	-	-	972	972	
Loans, borrowings and leases (note 22)	21,646	-	-	21,646	20,546	-	-	20,546	
Related parties	89,156	-	-	89,156	62,861	-	-	62,861	
Participative stockholders' debentures (note 21)	-	-	17,737	17,737	-	-	10,416	10,416	
Liabilities related to the concession grant	10,928	-	-	10,928	-	-	-	-	
Financial guarantees	-	-	4,558	4,558	-	-	2,116	2,116	
	121,730	-	25,371	147,101	83,407	-	13,504	96,911	
Total of financial liabilities	147,058	-	26,537	173,595	111,180	-	13,784	124,964	

b) Hierarchy of fair value

	December 31, 2020				December 31, 2019				Consolidated
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total	
Financial assets									
Short-term investments	4,006	-	-	4,006	3,329	-	-	3,329	
Derivative financial instruments	-	950	95	1,045	-	1,806	96	1,902	
Accounts receivable	-	2,567	-	2,567	-	310	-	310	
Investments in equity securities	3,936	-	-	3,936	2,925	-	-	2,925	
Total	7,942	3,517	95	11,554	6,254	2,116	96	8,466	
Financial liabilities									
Derivative financial instruments	-	5,190	100	5,290	-	1,130	484	1,614	
Participative stockholders' debentures	-	17,737	-	17,737	-	10,416	-	10,416	
Financial guarantees	-	4,558	-	4,558	-	2,116	-	2,116	
Total	-	27,485	100	27,585	-	13,662	484	14,146	

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	December 31, 2020				Parent company December 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets								
Short-term investments	1,811	-	-	1,811	3,309	-	-	3,309
Derivative financial instruments	-	280	95	375	-	947	96	1,043
Accounts receivable	-	-	-	-	-	138	-	138
Investments in equity securities	3,438	-	-	3,438	2,555	-	-	2,555
Total	5,249	280	95	5,624	5,864	1,085	96	7,045
Financial liabilities								
Derivative financial instruments	-	4,142	100	4,242	-	768	484	1,252
Participative stockholders' debentures	-	17,737	-	17,737	-	10,416	-	10,416
Financial guarantees	-	4,558	-	4,558	-	2,116	-	2,116
Total	-	26,437	100	26,537	-	13,300	484	13,784

There were no transfers between levels 1, 2 and 3 of the fair value hierarchy during the years presented.

b.i) Changes in Level 3 assets and liabilities during the year

	Consolidated		Parent company	
	Financial assets	Financial liabilities	Financial assets	Financial liabilities
Balance at December 31, 2019	96	484	96	484
Gain and losses recognized in income statement	(1)	(384)	(1)	(384)
Balance at December 31, 2020	95	100	95	100

c) Fair value of loans and financing

Loans and financing are recorded at their contractual values. To determine the market values of these financial instruments traded in public markets, the closing market quotations on the balance sheet dates were used. The Company considers that for the other financial liabilities measured at amortized cost, their book values are close to their fair values and therefore information on their fair values is not being presented.

	Consolidated		Consolidated	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Quoted in the secondary market:				
<i>Bonds</i>	38,708	52,100	23,979	30,164
<i>Eurobonds</i>	4,783	5,118	3,398	3,693
<i>Debentures</i>	2,577	2,578	4,011	4,011
Debt contracts in Brazil in:				
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	4,470	4,452	5,368	5,555
R\$, with fixed interest	180	180	358	354
Basket of currencies and bonds in US\$ indexed to LIBOR	290	291	400	403
Debt contracts in the international market in:				
US\$, with variable and fixed interest	16,759	17,036	12,871	13,221
EUR, with variable interest	-	-	907	851
Other currencies, with fixed interest	616	698	482	532
Total	68,383	82,453	51,774	58,784

	Parent company		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Quoted in the secondary market:				
<i>Bonds</i>	2,704	3,651	2,098	2,465
<i>Eurobonds</i>	4,783	5,118	3,399	3,695
<i>Debentures</i>	2,576	2,576	4,011	4,011
Debt contracts in Brazil in:				
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	4,011	3,972	4,686	4,840
R\$, with fixed interest	155	155	305	305
Basket of currencies and bonds in US\$ indexed to LIBOR	290	290	405	405
Debt contracts in the international market in:				
US\$, with variable	8,276	8,333	6,864	7,524
US\$, with fixed interest	-	-	536	558
Total	22,795	24,095	22,304	23,803

Accounting policy

Classification and measurement - The Company classifies financial instruments based on its business model for managing the assets and the contractual cash flow characteristics of those assets. The business model test determines the classification based on the business purpose for holding the asset and whether the contractual cash flows represent only payments of principal and interest.

Financial instruments are measured at fair value through profit or loss ("FVTPL") unless certain conditions are met that permit measurement at fair value through other comprehensive income ("FVOCI") or amortized cost. Gains and losses recorded in other comprehensive income for debt instruments are recognized in profit or loss only on disposal.

Investments in equity instruments are measured at FVTPL unless they are eligible to be measured at FVOCI, whose gains and losses are never recycled to profit or loss.

All financial liabilities are initially measured at fair value, net of transaction costs incurred and are subsequently carried at amortized cost and updated using the effective interest rate method. Excepts for Participative stockholders' debentures and Derivative financial instruments that are measured at fair value through profit or loss.

Fair value hierarchy - The Company classifies financial instruments within the fair value hierarchy as:

Level 1: The fair value of financial instruments traded in active markets (e.g. derivatives and publicly traded shares) is based on quoted market prices at the end of the financial statements period.

Level 2: The fair value of financial instruments that are not traded in an active market (e.g. over the counter derivatives) is determined using valuation techniques that maximize the use of observable market data. If all significant data required for the fair value of an instrument are observable, the instrument is included in level 2.

Level 3: If one or more of the significant data are not based on observable market data, the instrument is included in level 3. The fair value of derivatives classified as level 3 is estimated using discounted cash flows and option valuation models with unobservable inputs of discount rates, stock prices and commodity prices.

21. Participative stockholders' debentures

At the time of its privatization in 1997, the Company issued a total of 388,559,056 debentures to then-existing stockholders, including the Brazilian Government. The debentures' terms were set to ensure that pre-privatization stockholders would participate in potential future benefits that might be obtained from exploration of mineral resources. This obligation will cease when all the relevant mineral resources are exhausted, sold or otherwise disposed of by the Company.

Holders of participative stockholders' debentures have the right to receive semi-annual payments equal to an agreed percentage of revenues less value-added tax, transport fee and insurance expenses related to the trading of the products, derived from these mineral resources. The Company made available for withdrawal as remuneration the amount of R\$1,000 and R\$776, for the year ended December 31, 2020 and 2019, respectively, as disclosed on the "Shareholders' debentures report" made available on the Company's website.

Accounting policy

The participative stockholders' debentures are measured at fair value through profit or loss based on the market approach. To calculate the fair value of the liabilities, the Company uses the weighted average price of the secondary market trades in the last month of the quarter.

22. Loans, borrowings, leases, 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.

	Consolidated	
	December 31, 2020	December 31, 2019
Debt contracts in the international markets	61,787	42,298
Debt contracts in Brazil	7,639	10,327
Total of loans and borrowings	69,426	52,625
(-) Cash and cash equivalents	70,086	29,627
(-) Short-term investments	4,006	3,329
Net debt (cash)	(4,666)	19,669
Leasing	8,662	7,218

b) Cash and cash equivalents

Cash and cash equivalents include cash, immediately redeemable deposits and short-term investments with an insignificant risk of change in value. They are readily convertible to cash, being R\$14,805 (R\$11,376 in 2019) denominated in R\$, indexed to the CDI, R\$52,979 (R\$17,758 in 2019) denominated in US\$ and R\$2,302 (R\$673 in 2019) denominated in other currencies.

c) Short-term investments

At December 31, 2020, the balance of R\$4,006 is substantially comprised of investments in an exclusive investment fund immediately liquid, whose portfolio is composed of committed transactions and Financial Treasury Bills ("LFTs"), which are floating-rate securities issued by the Brazilian government. At December 31, 2019, the balance of R\$3,329 is mainly comprised of investments directly in LFTs.

d) Loans, borrowings and leases

i) Total debt

		Consolidated			
		Current liabilities		Non-current liabilities	
	Average interest rate (i)	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Quoted in the secondary market:					
Bonds	6.01%	-	-	38,709	23,978
Eurobonds	4.29%	-	-	4,783	3,398
Debentures	10.48%	555	1,508	2,021	2,503
Debt contracts in Brazil in:					
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	9.29%	1,662	1,112	2,808	4,256
R\$, with fixed interest	2.86%	107	177	73	181
Basket of currencies and bonds in US\$ indexed to LIBOR	2.31%	232	174	58	226
Debt contracts in the international market in:					
US\$, with variable and fixed interest	2.24%	942	1,049	15,817	11,822
EUR, with variable interest	-	-	-	-	907
Other currencies, with fixed interest	3.17%	61	56	555	427
Accrued charges		1,043	819	-	32
Total		4,602	4,895	64,824	47,730

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



		Parent company			
		Current liabilities		Non-current liabilities	
	Average interest rate (i)	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Quoted in the secondary market:					
Bonds	6.01%	-	-	2,704	2,098
Eurobonds	4.29%	-	-	4,783	3,398
Debentures	10.48%	555	1,508	2,021	2,503
Debt contracts in Brazil in:					
R\$, indexed to TJLP, TR, IPCA, IGP-M and CDI	9.29%	1,203	771	2,808	3,915
R\$, with fixed interest	2.86%	84	151	71	155
Basket of currencies and bonds in US\$ indexed to LIBOR	2.31%	232	180	58	225
Debt contracts in the international market in:					
US\$, with variable interest	2.24%	871	445	7,405	6,419
US\$, with fixed interest	-	-	536	-	-
Accrued charges		369	395	-	-
Total		3,314	3,986	19,850	18,713

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

(ii) R\$ denominated debt that bears interest at IPCA, IGP, CDI, TR or TJLP, plus spread. For a total of R\$6,735 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 2.99% 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\$.

Future flows of debt payments, principal and interest

	Consolidated		Parent company
	Principal	Estimated future interest payments (i)	Principal
2021	3,561	3,311	2,946
2022	6,391	3,171	3,443
2023	6,389	3,017	6,320
2024	10,515	2,740	5,251
Between 2025 and 2029	11,302	10,956	2,133
2030 onwards	30,225	12,732	2,702
Total	68,383	35,927	22,795

(i) Based on interest rate curves and foreign exchange rates applicable as at December 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 financial statements.

Credit and financing lines

As a precautionary measure in order to increase the Company's cash position due to the uncertainties resulting from the COVID-19 pandemic, Vale drew down its revolving credit lines in March 2020. These credit lines were fully paid in September 2020. As at December 31, 2020, the total amount available under credit lines is R\$25,984 (US\$5 billion), of which R\$10,393 (US\$2 billion) maturing in June 2022 and R\$15,591 (US\$3 billion) maturing in December 2024.

Funding

In July 2020, the Company issued through Vale Overseas Limited guaranteed notes due July 2030 totaling R\$8,214 (US\$1,500 million). The notes bear 3.750% coupon per year, payable semi-annually, and were sold at a price of 99.176% of the principal amount. In August 2020, the Company contracted R\$1,626 (US\$300 million) with The Export-Import Bank of China ("CEXIM").

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



Reconciliation of debt to cash flows arising from financing activities

				Consolidated
	Quoted in the secondary market	Debt contracts in Brazil	Debt contracts on the international market	Total
December 31, 2019	32,061	6,186	14,378	52,625
Additions	7,920	-	26,103	34,023
Repayments	(1,252)	(1,455)	(30,500)	(33,207)
Interest paid	(2,916)	(325)	(670)	(3,911)
Cash flow from financing activities	3,752	(1,780)	(5,067)	(3,095)
Effect of exchange rate	8,375	260	7,476	16,111
Interest accretion	2,822	314	649	3,785
Non-cash changes	11,197	574	8,125	19,896
December 31, 2020	47,010	4,980	17,436	69,426

				Parent company
	Quoted in the secondary market	Debt contracts in Brazil	Debt contracts on the international market	Total
December 31, 2019	9,819	5,424	7,456	22,699
Additions	-	44	-	44
Repayments	(1,254)	(1,094)	(1,186)	(3,534)
Interest paid	(903)	(303)	(234)	(1,440)
Cash flow from financing activities	(2,157)	(1,353)	(1,420)	(4,930)
Effect of exchange rate	1,968	143	2,062	4,173
Interest accretion	766	257	199	1,222
Non-cash changes	2,734	400	2,261	5,395
December 31, 2020	10,396	4,471	8,297	23,164

ii) Lease liabilities

						Consolidated
	December 31, 2019	Additions and contract modifications	Payments (i)	Interest (ii)	Translation adjustment	December 31, 2020
Ports	3,023	267	(389)	159	800	3,860
Vessels	2,343	-	(354)	132	649	2,770
Pellets plants	705	180	(197)	20	-	708
Properties	614	174	(82)	26	6	738
Energy plants	282	-	(9)	4	45	322
Mining equipment and locomotives	251	22	(98)	17	72	264
Total	7,218	643	(1,129)	358	1,572	8,662

(i) 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 year ended December 31, 2020 and 2019 was R\$335 and R\$2,187, respectively.

(ii) The interest accretion recognized in the income statement is disclosed in note 6.

Discount rates

	Discount rate
Ports	3% to 6%
Vessels	3% to 6%
Pellets plants	3% to 6%
Properties	3% to 7%
Energy plants	4% to 5%
Mining equipment and locomotives	3% to 6%

Annual minimum payments

	2021	2022	2023	2024	2025 onwards	Total
Ports	356	323	316	311	4,160	5,466
Vessels	337	329	321	313	2,102	3,402
Pellets plants	185	159	51	51	443	889
Properties	244	140	120	110	203	817
Energy plants	35	35	33	29	309	441
Mining equipment and locomotives	96	86	52	41	80	355
Total	1,253	1,072	893	855	7,297	11,370

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

e) Guarantees

As at December 31, 2020 and 2019, loans and borrowings are secured by property, plant and equipment in the amount of R\$915 and R\$887, respectively. The securities issued through Vale's wholly-owned finance subsidiary Vale Overseas Limited are fully and unconditionally guaranteed by Vale.

Accounting policy

Loans and borrowings are initially measured at fair value, net of transaction costs incurred and are subsequently carried at amortized cost and updated using the effective interest rate method. Any difference between the proceeds (net of transaction costs) and the redemption value is recognized in the Income statement over the period of the loan, using the effective interest rate method. The fees paid in obtaining the loan are recognized as transaction costs. The Company contracts derivatives to protect its exposure to changes in debt cash flows, changing the average cost of debts that have hedge derivatives contracted.

Loans and borrowing costs are capitalized as part of property, plants and equipment if those costs are directly related to a qualified asset. The capitalization occurs until the qualified asset is ready for its intended use. The average capitalization rate is 9%. Borrowing costs that are not capitalized are recognized in the income statement in the period in which they are incurred.

Some of the Company's debt agreements with lenders contain financial covenants. The primary financial covenants in those agreements require maintaining certain ratios, such as debt to EBITDA and interest coverage. The Company has not identified any instances of noncompliance as at December 31, 2020 and 2019.

The accounting policy applied to lease liabilities is disclosed in note 17.

23. 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.

As a result of the dam failure, the Company has been recognizing provisions to meet its assumed obligations, including de-characterization of the dams, individual indemnification to those affected by the event, remediation of the affected areas and compensation to the society, as shown below:

	December 31, 2019	Impact on the income statement	Present value adjustment	Disbursements (i)	Consolidated December 31, 2020
Global Settlement for Brumadinho	7,722	19,924	(43)	(6,877)	20,726
Provision for individual indemnification and other commitments	4,300	1,331	91	(2,674)	3,048
De-characterization of dams	10,034	3,175	209	(1,521)	11,897
Incurred expenses (ii)	-	2,586	-	(2,586)	-
	22,056	27,016	257	(13,658)	35,671

(i) Disbursements include the release of judicial deposits in the amount of R\$6,900, of which R\$1,500 was released in the second quarter of 2020 and R\$5,400 will be released as provided in the Global Settlement. In 2019, the Company disbursed R\$6,885 in relation to the Brumadinho event. Of the total amount disbursed by the Company in 2019 and 2020, R\$7,777 is part of the total economic value of the Global Settlement.

(ii) The Company has incurred expenses, which have been recognized straight to the income statement, in relation to communication services, accommodation and humanitarian assistance, equipment, legal services, water, food aid, taxes, among others. In 2019, the Company incurred expenses in the amount of R\$2,903.

a) Global Settlement for Brumadinho

On February 4, 2021 (subsequent event), the Company entered into a Judicial Settlement for Integral Reparation ("Global Settlement"), which was under negotiations since 2019, with the State of Minas Gerais, the Public Defender of the State of Minas Gerais and the Federal and the State of Minas Gerais Public Prosecutors Offices, to repair the environmental and social damage resulting from the Dam I rupture.

With the Global Settlement, the requests contained in public civil actions regarding the socio-environmental and socioeconomic damages caused by the dam rupture were substantially resolved. In addition, relevant aspects related to the scope and execution of the Company's obligations were defined. Therefore, as the negotiations have started before the reporting date, the Company recognized a loss of R\$19,924 in the income statement for the year ended December 31, 2020.

Based on the present value of the projected cash outflows discounted at 5.93%, the provision is detailed as follows:

	December 31, 2020	Consolidated December 31, 2019
Payment obligations (i)	12,172	-
Provision for socio-economic reparation and others	4,468	2,938
Provision for social and environmental reparation	4,086	4,784
	20,726	7,722
	December 31, 2020	December 31, 2019
Current liabilities	8,110	3,156
Non-current liabilities	12,616	4,566
Liabilities	20,726	7,722

(i) As established in the Global Settlement, R\$5,400 in judicial deposits made by Vale in public civil actions due to the Dam I rupture will be released to the State of Minas Gerais to use in water security projects and to develop projects that will be proposed by the affected communities. Therefore, the provision already considers that these judicial deposits settled part of the obligations at December 31, 2020.

(a.i) Cash settlement obligation

The cash settlement obligation relates to the socio-economic reparation and socio-environmental compensation projects that will be carried out or managed directly by the State of Minas Gerais and Institutions of Justice, mainly aiming to develop the urban mobility program and strengthening public service programs, as well as other projects that will be proposed by the affected population. In addition, resources will be used in a program of income transfer to those affected by the event, which will be carried out by Institutions of Justice. Of the total amount, R\$4,400 relates to the income transfer program that will be fully paid in 2021. The remaining amount of R\$7,772 is the present value of the semiannual fixed payments obligation, which will last 5 years on average.

(a.ii) Provision for socio-economic reparation and others

The Global Settlement includes remediation projects for Brumadinho and other affected municipalities of the Paraopeba Basin. The socioeconomic reparation actions aims to strengthen the productive activities of the affected region, through measures for greater economic diversification of the municipality of Brumadinho, reducing its historical dependence on mining, and, for the rest of the Basin, finding ways to support the transformation of the economy of the impacted municipalities. These projects will be carried out directly by the Company for an average period of 3 years.

The estimated amounts for the project execution, although set in the agreement, may vary since the implementation of those projects are Vale's responsibility and changes against the original budget may result in changes in provision in future reporting periods.

(a.iii) Provision for social and environmental reparation

The Global Settlement establishes the rule for the development of the environmental reparation plan, and projects for the compensation of environmental damage already known. These measures aim to repair the damage caused, restore the ecosystems disruption, restore local infrastructure, repair social and economic losses, recover affected areas and repair the loss of memory and cultural heritage caused by the dam rupture. It also includes several actions to clean up the affected areas and improvements to the water catchment system along the Paraopeba River and other water collection points near the affected area. These measures and compensation projects will be carried out directly by the Company for an average period of 5 years.

The estimated amount to carry out the environmental recovery actions is part of the Global Settlement. However, it has no cap due to the Company's legal obligation to fully repair the environmental damage caused by the dam rupture. Therefore, this provision may change in the future depending on several factors that are not under the control of the Company.

b) Provision for individual indemnification and other commitments

In addition to the Global Settlement, the Company has been working 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 of Dam I. As at December 31, 2020, the provision recorded is R\$1,387 (2019: R\$457).

For the individual indemnification, Vale and the Public Defendants of the State of Minas Gerais formalized an agreement on April 5, 2019, under which those affected by the Brumadinho's Dam failure may join an individual or family group out-of-court settlement agreements for the indemnification of material, economic and moral damages. This agreement establishes the basis for a wide range of indemnification payments, which were defined according to the best practices and case law of Brazilian Courts, following rules and principles of the United Nations ("UN"). As at December 31, 2020, the provision recorded is R\$930 (2019: R\$2,992).

In addition, 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. In July 2020, the Company signed an agreement with IBAMA, of which R\$150 will be used in environmental projects in 7 parks in the state of Minas Gerais, covering an area of approximately 794 thousand hectares, and R\$100 will be used in basic sanitation programs in the state of Minas Gerais.

c) De-characterization of other dams in Brazil

Following the Brumadinho Dam rupture, the Company has decided to speed up the plan to “de-characterize” its tailings dams built under the upstream method (same method as Brumadinho’s dam), certain “centerline structures” and dikes, located in Brazil. Therefore, the Company has a total provision to comply with these assumed obligations in the amount of R\$11,897 at December 31, 2020 (R\$10,034 as at December 31, 2019).

In 2020, as a consequence of the periodic review of the estimates for the de-characterization of the dam structures, built under the upstream raising method, which are already reserved, the Company recognized R\$1,900 in addition to the recorded provision, mainly due to the evolution of engineering projects and changes in the planned containments. The Company also identified other structures that met the criteria to be de-characterized as well, resulting in a further provision of R\$1,275, recognized in the income statement for the year ended December 31, 2020.

As described in “Critical accounting estimates and judgments”, changes in engineering methods and solutions, the volume of tailings to be removed, among other relevant assumptions, may result in a significant change in the provision.

(c.i) 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 has been recording losses in relation to the operational stoppage and idle capacity of the ferrous mineral segment in the amounts of R\$3,206 and R\$3,888 for the year ended December 31, 2020 and 2019, respectively. The Company is working on legal and technical measures to resume all operations at full capacity.

(c.ii) 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\$904 as “Impairment and disposal of non-current assets” for the year ended December 31, 2019 in relation to the assets written-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.

d) Contingencies and other legal matters

(d.i) Public civil actions brought by the State of Minas Gerais and state public prosecutors for damages resulting from the rupture of Dam I

The Company is party to public civil actions brought by the State of Minas Gerais and state prosecutors claiming economic and environmental damages resulting from the dam rupture and seeking a broad range of injunctions ordering Vale to take specific remediation and reparation actions. These legal proceedings were initially brought before various state courts in Minas Gerais but have been consolidated before the 6th Public Treasury Court in the city of Belo Horizonte and then transferred to the 2nd Public Treasury Court in the city of Belo Horizonte.

With the Global Settlement, the requests contained in public civil actions regarding the socio-environmental and socioeconomic damages caused by the dam rupture were substantially resolved (of the 207 requests, 204 were extinguished). Indemnifications for individual damages are not covered by the Global Settlement, but the parties ratified the agreement with the Public Defendants of the State of Minas Gerais. Thus, the Company expects to keep signing individual agreements.

(d.ii) Requests for fines or forfeit of assets

On August 26, 2020, the Public Prosecutor's Office of Minas Gerais (“MPMG”) and other plaintiffs of the Public Civil Actions presented a request for ruling condemning Vale to indemnify alleged economic losses of the State of Minas Gerais and collective moral damages, both claims already considered in said Public Civil Actions filed against Vale in January 2019 as a result of the Brumadinho dam rupture. In that submission, the plaintiffs also requested the immediate freezing of R\$26.7 billion from the Company as a guarantee for the reimbursement of the alleged economic losses, which was dismissed by the judge of the 2nd Lower Court of Public Treasury of Belo Horizonte on October 6, 2020. This claim was extinguished with the Global Settlement.

In other proceeding, in May 2020, the MPMG requested the imposition of fines or forfeit of assets, rights and amounts of the Company, allegedly based on Article 5, item V of Brazilian Law 12.846/2013. According to the MPMG, Vale would have, through its employee’s actions, hindered the inspection activities of public agencies in the complex. Vale was not required to present any guarantees based on a judicial decision. The Company believes that the likelihood of loss is remote.

In October 2020, the Company was informed that the Brazilian Office of the Comptroller General ("CGU") initiated an administrative proceeding based on the same allegations made by the MPMG. As this is a discretionary procedure from the CGU, the Company estimates its likelihood of a loss during the administrative phase as possible, but it reaffirms its assessment of loss as remote in the annulment lawsuit to be instituted against any decision by CGU, if necessary.

(d.iii) U.S. Securities putative class action suit

Vale is defending itself in a putative class action brought before a Federal Court in New York and filed by holders of securities - American Depositary Receipts ("ADRs") - issued by Vale. 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 Corrego de Feijão mine and the adequacy of the related programs and procedures.

Following the decision of the Court, in May 2020, that denied the Motion to Dismiss presented by the Company, the Discovery phase has started and is expected to be concluded by June 2021.

Based on the evaluation of the Company's legal counsel and given the very preliminary stage, the expectation of loss of this process is classified as possible. However, considering the initial stage of this putative class action, it is not possible at this time to reliably estimate the amount of a potential loss.

(d.iv) Arbitration proceedings in Brazil filed by shareholders and a class association

In Brazil, Vale is a defendant in (i) one arbitration filed by 166 minority shareholders, (ii) one arbitration filed by a class association allegedly representing all Vale's minority shareholders, and (iii) one arbitration filed by foreign investment funds.

In the three proceedings, the Claimants argue Vale would be aware of the risks associated with the dam, and failed to disclose it to the shareholders, which would be required under the Brazilian applicable laws and the rules of *Comissão de Valores Mobiliários* (Securities and Exchange Commission of Brazil). Based on such argument, they claim compensation for losses caused by the decrease of the value of the shares.

Based on the evaluation of the Company's legal counsel and given the very preliminary stage, the expectation of loss of these proceedings is classified as possible.

Specifically, in the proceeding filed by foreign funds, the Claimants estimated the amount of the alleged losses at approximately R\$1,800. However, the Company disagree with the estimated losses alleged by the foreign funds and believes that the likelihood of loss is remote based on the current status of the proceeding.

(d.v) Cooperation with the CVM and the Securities and Exchange Commission ("SEC")

The Company is cooperating with the CVM and the SEC by providing documents and other information related to the Dam I rupture in connection with ongoing investigations by both agencies. These investigations relate to Vale's disclosure of relevant information to shareholders, investors and the market in general, especially regarding the conditions and management of Vale's dams. The CVM and SEC investigations may result in the application of fines and administrative penalties either through negotiated resolutions or court proceedings.

e) Insurance and financial guarantees

(e.i) Insurance

The Company is negotiating with insurers the payment of indemnification under its operational risk and civil liability. However, these negotiations are still at a preliminary stage, therefore 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 these financial statements.

(e.ii) Financial guarantees

For the Brumadinho event, the Company has financial guarantees in the amount of R\$5,843 in December 31, 2020 (R\$5,626 in December 31, 2019), which were presented in court and used to release the respective judicial deposit. The expenses related to these financial guarantees in the amounts of R\$38 and R\$36 were recorded as financial expense in the Company's income statement for the year ended December 31, 2020 and 2019, respectively. With the Global Settlement, these guarantees will be released.

Critical accounting estimates and judgments

The provision for social, economic and environmental reparation may be affected by factors including, but not limited to: (i) changes in the current estimated market price of the direct and indirect cost related to products and services, (ii) changes in timing for cash outflows, (iii) changes in the technology considered in measuring the provision, (iv) number of individuals entitled to the indemnification payments, (v) resolution of existing and potential legal claims, (vi) demographic assumptions, (vii) actuarial assumptions, and (viii) updates in the discount rate.

The main critical assumptions and estimates applied in the De-Characterization 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; (iii) engineering methods and solution; and (iv) 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.

24. Liabilities related to associates and joint ventures

In November 2015, the Fundão tailings dam owned by Samarco Mineração S.A. (Samarco) failed, releasing tailings downstream, flooding certain communities and causing impacts on communities and the environment along the Doce river. The rupture resulted in 19 fatalities and caused property and environmental damage to the affected areas. Samarco is a joint venture equally owned by Vale S.A. and BHP Billiton Brasil Ltda. ("BHPB").

In June 2016, Samarco, Vale and BHPB created the Fundação Renova, a not-for-profit private foundation, to develop and implement (i) social and economic remediation and compensation programs and (ii) environmental remediation and compensation programs in the region affected by the dam rupture.

The creation of Fundação Renova was provided for under the agreement for settlement and conduct adjustment (the "Framework Agreement") signed in March 2016 by Vale, BHPB, Samarco, the Brazilian federal government, the two Brazilian states affected by the rupture (Minas Gerais and Espírito Santo) and other governmental authorities.

In June 2018, Samarco, Vale and BHPB entered into a comprehensive agreement with the offices of the federal and state (Minas Gerais and Espírito Santo) prosecutors, public defenders and attorney general, among other parties, improving the governance mechanism of Fundação Renova and establishing, among other things, a process for potential revisions to the remediation programs provided under the Framework Agreement based on the findings of experts hired by Samarco to advise the MPF (Federal Prosecutor's Office) over a two-year period (the "June 2018 Agreement").

Under the Framework Agreement, the June 2018 Agreement and Renova's by-laws, Fundação Renova must be funded by Samarco, but to the extent that Samarco is unable to fund, Vale and BHPB must ratably bear the funding requirements Under the Framework Agreement. As Samarco is currently unable to resume its activities, we and BHPB have been funding the Fundação Renova and also providing funds directly to Samarco, to preserve its operations and to support Samarco's funding obligations.

Samarco has been gradually resuming its operations since December 2020.

Renova Foundation

During 2020, the Renova Foundation updated the premises used in the preparation of the estimate of the costs necessary for the execution of the 42 repair and compensation programs. This periodic review resulted in an additional provision of R\$5,530, which corresponds to the Company's proportional responsibility with Renova Foundation.

Germano Dam

In addition to the Fundão tailings dam, Samarco owns the Germano dam, which was also built under the upstream method and has been inactive since the Fundão dam rupture. Due to the new safety requirements set by ANM, Samarco prepared a project for the de-characterization of this dam, resulting in a provision for the de-characterization of the Germano tailings dam, which was recognized by the Company in 2019. During 2020, the Company recorded an additional provision of R\$136, equivalent to 50% of the estimated costs to carry out the project for the de-characterization of this structure.

Movements during the year

	Consolidated	
	2020	2019
Balance at January 1,	6,853	4,346
Provision	5,666	2,956
Disbursements	(2,059)	(1,253)
Present value valuation	322	804
Balance at December 31,	10,782	6,853
	December 31, 2020	December 31, 2019
Current liabilities	4,554	2,079
Non-current liabilities	6,228	4,774
Liabilities	10,782	6,853

Samarco's working capital

In addition to the provision, Vale S.A. made available in the year ended December 31, 2020 and 2019, the amount of R\$845 (US\$166 million) and R\$402 (US\$102 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 2021, Vale S.A. may provide a short-term credit facility up to R\$442 (US\$85 million) to support the Samarco's cash needs, without any binding obligation to Samarco. The availability of funds by the shareholders – Vale S.A. and BHP – is subject to the fulfillment of certain conditions, being deliberated by the shareholders, in the same bases and concomitantly, if required.

Summarized financial information

The summarized financial information of Samarco are as follows. The stand-alone financial statements of these entity may differ from the financial information reported herein, which is prepared considering Vale's accounting policies.

	December 31, 2020	December 31, 2019
Current assets	450	136
Non-current assets	23,810	15,878
Total assets	24,260	16,014
Current liabilities	43,494	28,171
Non-current liabilities	33,181	22,273
Total liabilities	76,675	50,444
Negative reserves	(52,415)	(34,430)
Loss for the year ended	(5,983)	(16,625)

Contingencies related to Samarco accident

These proceedings include public civil actions brought by Brazilian authorities and multiple proceedings involving claims for significant amounts of damages and remediation measures. The Company expects the Framework Agreements to represent the settlement of the public civil action brought by the MPF and other related proceedings. There are also putative securities class actions in the United States against Vale and some of its current and former officers and a criminal proceeding in Brazil. The main updates regarding the lawsuits in the year were as follows:

(i) Public Civil Action filed by the Federal Government and others and public civil action filed by the Federal Public Ministry ("MPF")

The Framework Agreement established a possible renegotiation of Renova Foundation's reparation programs upon the completion of studies carried by specialist engaged by the Public Prosecutor's Office in this process. The studies of the aforementioned specialists have not yet been concluded and, therefore, these negotiations have not started. In October 2020, MPF required the continuance of its public civil action of R\$155 billion due to a deadlock in the hiring of Technical Assistants. The request will still be analyzed by the Judge of the 12th Federal Court after a statement by Samarco and its shareholders Vale and BHP. Depending on the conclusion of those experts and the decision to be issued in this regard, the Company may recognize additional provisions to comply with the requirements set the Framework Agreement.

(ii) Class Action in the United States

In March 2017, the holders of securities issued by Samarco Mineração S.A. filed a potential collective action in the New York Federal Court against Samarco, Vale, BHP Billiton Limited, BHP Billiton PLC and BHP Brasil Ltda. based on U.S. Federal Securities laws, which was dismissed without prejudice, in June 2019. In December 2019 the plaintiffs filed a Notice of Appeal to the NY Court of Appeals.

In January 2021, it was held a hearing before the Second Circuit of the New York State Court of Appeals. A ruling on the case is now expected to be issued, with no term for it to occur. Based on the assessment of the Company's legal consultants, Vale has good arguments to oppose the appeal. Therefore, the expectation of loss of this case is classified as possible. However, considering the phase of the potential class action, it is not possible at this time to reliably estimate the amount of an eventual loss.

(iii) Class action filed by holders of American Depositary Receipts

Vale and some of its executives have been named as defendants in class actions relating to securities before the New York Federal Court, filed by investors holding American Depositary Receipts ("ADRs") issued by the Company, based on the U.S. Federal Securities laws. In June 2020, the case was closed as a result of the agreement reached by the parties, whereby the defendants agreed to pay the amount of R\$130 (US\$25 million), which was accepted by the Court. This amount was recognized in income as "Equity in earnings of affiliates and joint ventures."

(iv) Criminal proceeding

In September 2019, the federal court of Ponte Nova dismissed all criminal charges against Vale representatives relating to the first group of charges, which concerns the results of the Fundão dam failure, remaining only the legal entity in the passive pole. The second group of charges against Vale S.A. and one of the Company's employees, which concerns the accusation of alleged crimes committed against the Environmental Public Administration, remained unchanged. In March 2020, the judge scheduled a number of hearings to collect defense witnesses' testimonies and intent letters were issued for the same purpose, 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. In July 2020, the Federal Court of the 1st Region denied an appeal presented by Vale and rejected the claim to recognize the state of limitation to keep the company within the criminal process. In October 2020, the criminal action was scanned and transferred to electronic processing. Additionally, the scheduling of hearings for the deposition of defense witnesses began in some cities, which received the letter precatory from Ponte Nova. The Company cannot estimate when a final decision on the case will be issued.

Insurance

Since the Fundão dam rupture, the Company has been negotiating with insurers the indemnification payments based on its general liability policies. During 2020 and 2019, the Company received payments in the amount of R\$86 (US\$17 million) and R\$412 (US\$109 million), respectively, and recognized a gain in the income statement as "Equity results and other results in associates and joint ventures".

Critical accounting estimates and judgments

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

The provision related to Renova Foundation 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.

25. Provisions

	Consolidated			
	Current liabilities		Non-current liabilities	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Payroll, related charges and other remunerations	4,560	3,183	-	-
Onerous contracts (note 18)	302	229	4,360	3,489
Environmental obligations	533	587	1,038	980
Asset retirement obligations	516	638	21,413	15,323
Provision related to VNC sale	2,598	-	-	-
Provisions for litigation (note 26)	455	-	5,216	5,895
Employee postretirement obligations (note 27)	534	319	11,802	8,546
Provisions	9,498	4,956	43,829	34,233

	Parent company			
	Current liabilities		Non-current liabilities	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Payroll, related charges and other remunerations	3,154	2,124	-	-
Environmental obligations	419	490	583	585
Asset retirement obligations	323	488	4,405	3,567
Provisions for litigation (note 26)	455	-	4,782	5,102
Employee postretirement obligations (note 27)	255	108	3,246	2,114
Provisions	4,606	3,210	13,016	11,368

Asset retirement obligations

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

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Balance at beginning of the year	15,961	12,069	4,055	3,375
Present value valuation	141	144	7	-
Settlements	(236)	(186)	(56)	(63)
Revisions on cash flows estimates (i)	2,461	3,221	722	743
Translation adjustment	3,602	713	-	-
Balance at end of the year	21,929	15,961	4,728	4,055
Current	516	638	323	488
Non-current	21,413	15,323	4,405	3,567
	21,929	15,961	4,728	4,055
Long-term interest rates (per annum)				
Brazil	3.54%	3.36%	3.54%	3.36%
Canada	0.00%	0.40%		
Mozambique	5.67%	5.20%		
Other regions	0.0% - 4.73%	0.60% - 4.78%		

(i) In 2019, includes changes in discount rates and updating plans for mine closure, that also considers new legal requirements related to the decommissioning.

As at December 31, 2020, the Company has issued letters of credit and surety bonds for R\$3,379 in connection with the Asset retirement obligations for its Base Metals operations.

Accounting policy

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

The long-term liability is discounted at presented value using a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability and the unwinds are recorded in the income statement and is reduced by payments for mine closure and decommissioning of mining assets. The accrued amounts of these obligations are not deducted from the potential costs covered by insurance or indemnities.

Critical accounting estimates and judgments

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

26. Litigations

The Company is defendant in numerous legal actions in the ordinary course of business, including civil, tax, environmental and labor proceedings.

The Company makes use of estimates to recognize the amounts and the probability of outflow of resources, based on reports and technical assessments and on management's assessment. Provisions are recognized for probable losses of which a reliable estimate can be made.

Arbitral, legal and administrative decisions against the Company, new jurisprudence and changes of existing evidence can result in changes regarding the probability of outflow of resources and on the estimated amounts, according to the assessment of the legal basis.

a) Provision for legal proceedings

The Company has considered all information available to assess the likelihood of an outflow of resources and in the preparation on the estimate of the costs that may be required to settle the obligations.

Tax litigations - Mainly refers to the lawsuit filed in 2011 by Valepar (merged by Vale) seeking the right to exclude the amount of dividends received in the form of interest on stockholders' equity ("JCP") from the PIS and COFINS tax base. The amount reserved for this proceeding as at December 31, 2020 is R\$2,197 (2019: R\$2,160). This proceeding is guaranteed by a judicial deposit in the amount of R\$2,529 recorded at December 31, 2020 (2019: R\$2,483).

Civil litigations - Refers to lawsuits for: (i) indemnities for losses, payments and contractual fines due to contractual imbalance or non-compliance that are alleged by suppliers, and (ii) land claims referring to real estate Vale's operational activities.

Labor litigations - Refers to lawsuits for individual claims by in-house employees and service providers, primarily involving demands for additional compensation for overtime work, moral damages or health and safety conditions.

Environmental litigations - Refers mainly to proceedings for environmental damages and issues related to environmental licensing.

					Consolidated
	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2018	2,824	644	1,777	13	5,258
Additions and reversals, net	39	650	417	24	1,130
Payments	(126)	(233)	(436)	(1)	(796)
Indexation and interest	35	165	70	7	277
Translation adjustment	32	(13)	7	-	26
Balance at December 31, 2019	2,804	1,213	1,835	43	5,895
Additions and reversals, net	133	168	78	9	388
Payments	(128)	(154)	(304)	-	(586)
Indexation and interest	(416)	129	130	4	(153)
Translation adjustment	127	(2)	2	-	127
Balance at December 31, 2020	2,520	1,354	1,741	56	5,671
Current liabilities	40	76	337	2	455
Non-current liabilities	2,480	1,278	1,404	54	5,216
	2,520	1,354	1,741	56	5,671

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					Parent company
	Tax litigation (i)	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2018	2,346	467	1,661	9	4,483
Additions and reversals, net	38	518	395	24	975
Payments	(95)	(113)	(394)	(1)	(603)
Indexation and interest	36	132	72	7	247
Balance at December 31, 2019	2,325	1,004	1,734	39	5,102
Additions and reversals, net	136	53	112	6	307
Payments	(116)	(81)	(287)	-	(484)
Indexation and interest	65	114	128	5	312
Balance at December 31, 2020	2,410	1,090	1,687	50	5,237
Current liabilities	40	76	337	2	455
Non-current liabilities	2,370	1,014	1,350	48	4,782
	2,410	1,090	1,687	50	5,237

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

b) Contingent liabilities

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Tax litigations	35,914	32,408	32,902	29,474
Civil litigations	7,005	6,116	5,522	4,589
Labor litigations	2,926	3,116	2,846	3,025
Environmental litigations	4,717	4,410	3,837	4,239
Total	50,562	46,050	45,107	41,327

The main contingent liabilities, updated by applicable interest rates, for which the likelihood of loss is not considered remote are discussed as follows:

(b.i) CFEM-related proceedings:

The Company is engaged in numerous administrative and judicial proceedings related to the mining royalty known as CFEM. These proceedings arise out of a large number of assessments by the Brazilian National Mining Agency ("Agência Nacional de Mineração – ANM", former "DNPM"), which main discussions involve the deduction of insurance and transportation costs indicated in the corresponding invoice payment of royalties on pellet sales and CFEM charges on the revenues provided by our subsidiaries abroad. The Company estimates the possible losses resulting from these proceedings to be R\$10,730 as at December 31, 2020 (R\$7,715 as at December 31, 2019).

(b.ii) Assessments and legal proceedings related to PIS/COFINS:

The Company has received several tax assessments from the Brazilian federal tax authority contending that Vale incorrectly claimed PIS and COFINS tax credits. The tax authorities claim that (i) some credits deducted from the Company's payments of PIS and COFINS were not deductible and (ii) the Company has not submitted adequate evidence of certain other credits. The Company is contesting these assessments related to the credits taken from 2002 onwards. The Company estimates the possible losses resulting from these proceedings to be R\$5,602 as at December 31, 2020 (R\$5,442 as at December 31, 2019). The Company may receive other tax assessments in the future.

(b.iii) Value added tax on services and circulation of goods ("ICMS") tax assessments and legal proceedings:

The Company is engaged in several administrative and court proceedings relating to additional charges of ICMS by the tax authorities of different Brazilian states. In each of these proceedings, the tax authorities claim that (i) certain credits that have been deducted from Vale's payments of ICMS were not deductible; (ii) the Company failed to comply with certain accessory obligations; (iii) the Company is required to pay the ICMS on electricity purchases (iv) the Company is required to pay ICMS in connection with goods that we bring into the State of Para and (v) increase in ICMS on own transportation. The Company estimates the possible losses resulting from these proceedings to be R\$3,369 as at December 31, 2020 (R\$3,057 as at December 31, 2019).

(b.iv) Tax assessment notices on alleged non-deductibility of goodwill amortization:

The Company is a party in administrative proceedings relating tax assessment notices for collection of IRPJ and CSLL, including fine and interest, related to the periods between 2013 and 2016. These tax assessments are based on the alleged non-deductibility of goodwill amortization expenses recorded by Vale in the acquisition of CAEMI (merged by Vale). The disallowance of goodwill amortization expenses resulted in a reduction in the balance of tax losses recorded by the Company and in the collection of IRPJ and CSLL. The Company is discussing the charges at the administrative level and the potential loss is classified as possible in the amount of R\$1,558 as at December 31, 2020 (R\$1,445 as at December 31, 2019).

(b.v) Tax on Services ("ISS"):

The Company is party in a number of administrative and judicial proceedings related to the collection of ISS in several Brazilian municipalities. The tax authorities main allegations for those proceedings are: (i) the tax basis used for computing the tax payable was incorrect; (ii) failure to pay ISS related to third parties asset management services; and (iii) the incidence of ISS over own goods port handling services ("self-service"). As at December 31, 2020, the total amount of the possible loss, is R\$2,621 (R\$2,405 as at December 31, 2019).

(b.vi) Penalties on the undue deduction of tax credits:

Vale has received several assessments from the Brazilian federal tax authority ("RFB") imposing penalties resulting from the rejection by the tax authority of certain offsetting of federal debits. In these cases, the tax authority alleged that we offset taxes with improper tax credits, and issued assessments imposing fines in the amount of 50% of the amount that was unduly deducted. There is a leading case in Federal Supreme Court discussing the legal grounds for this charge, whose decision will affect all taxpayers who argue this thesis. At December 31, 2020, the total amount of fines imposed, which likelihood of loss is classified as possible, was R\$1,542 (R\$1,535 at December 31, 2019).

(b.vii) Assessments regarding the disallowance of JCP:

In addition to the tax contingent liabilities presented in the table above, on February 23, 2021 (subsequent event), Vale was assessed for collection of IRPJ, CSLL and penalties in the amount of R\$3,423 regarding the disallowance of the JCP expenses deducted from the 2017 taxable income. There was also a reduction in tax losses, with the corresponding tax impact of R\$698, including penalties and interest. The Company will file an administrative appeal and, based on its assessment of the tax treatment, it believes that the likelihood of loss is possible.

(b.viii) Public civil actions seeking for the suspension of the Company's environmental licenses:

The Company is engaged on public civil actions brought by associations representing the Kayapó and Xikrin indigenous communities, in the state of Pará, which seek to suspend the Company's environmental licenses for Onça Puma (nickel), Salobo (copper) and S11D (iron ore). Those associations claim, among other things, that during the environmental licensing process, the Company did not perform appropriate studies on the impacts from those operations over the surrounding indigenous communities, which were ordinarily processed and approved by the competent licensing bodies and they benefit from the legal presumption of legitimacy. The Company estimates the likelihood of loss on those proceedings as possible, however, the amount of a possible loss resulting from a possible interruption of these operations or compensatory measures to prevent the suspension of their environmental licenses cannot be reliably estimated.

c) Judicial deposits

	Consolidated		Parent company	
	December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Tax litigations	5,132	5,152	4,962	4,946
Civil litigations	441	346	325	223
Labor litigations	924	992	885	935
Environmental litigations	94	163	93	162
Brumadinho event (note 23)	-	5,976	-	5,976
Total	6,591	12,629	6,265	12,242

d) Guarantees contracted for legal proceedings

In addition to the above-mentioned tax, civil, labor and environmental judicial deposits, the Company contracted R\$11.3 billion in guarantees for its lawsuits, as an alternative to judicial deposits.

e) Contingent Assets

(e.i) Compulsory Loan

In 2015, the Company requested for the enforcement of the judicial decision 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 recognized by Eletrobrás as due and such requirement was granted by the court. In August 2020, the Company received R\$301 and the remaining amount is still under evaluation and, therefore, the contingent asset was not recognized in the Company's financial statements.

(e.ii) ICMS included in PIS and COFINS computation tax base

Vale has been discussing the issue regarding the exclusion of ICMS in PIS and COFINS tax basis in two judicial proceedings. In one of the proceedings, the Company has obtained a definitive favorable decision (res judicata) in relation to taxable events from March 2012 onwards, therefore the Company recognized a gain of R\$313 in the income statement for the year ended December 31, 2020, which was calculated based on the ICMS collected during the period in which Vale was supported by a definitive favorable decision. Since there is a leading case in the Supreme Court discussing this subject, the Company may recognize an additional gain of R\$72 (historical amount), if prevails the thesis that the ICMS credit should be the amount stated in the invoices.

The other lawsuit, estimated at an amount of R\$343 (historical amount) and related to taxable events from December 2001 to February 2012, has a favorable decision, but a final decision has not been issued. Therefore, the Company did not recognize this contingent asset as at December 31, 2020.

(e.iii) Arbitration related to Simandou

In 2010, the Company acquired a 51% interest in BSG Resources Limited G ("BSGR"), which held concession rights and permits for iron ore exploration in the Republic of Guinea. In 2014, the Republic of Guinea revoked these concessions based on evidence 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 the Company's part.

The arbitral tribunal in London ruled in the Company's favor and ordered BSGR to pay to the Company the amount of approximately R\$10,393 (US\$2 billion) (with interest and costs). BSGR went into administration in March 2018, and the Company 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.

The Company 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.

(e.iv) Tax Litigation in Canada

Vale Canada Limited ("VCL") and the Canadian tax agency, affiliated with the Canadian Department of Justice, have signed an agreement on a tax dispute related to the tax treatment of receipts and expenses incurred by the VCL in merger and acquisition transactions that occurred in 2006. In 2019, the Company recognized an asset in the amount of R\$889 (CAD221 million), which corresponded to the amount due from the income tax refund, including estimated interest. In 2020, the Company recognized an additional amount of R\$84 (CAD21 million) related to interest. The total amount has been paid in full to the company.

Accounting policy

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

Critical accounting estimates and judgments

Litigations are contingent by nature, that is, it will be resolved when one or more future event occurs or fails to occur. Typically, the occurrence or not of such events is outside of the Company's control. Legal uncertainties involve the application of significant estimates and judgments by management regarding the potential outcomes of future events.

27. Employee benefits

a) Employee postretirements obligations

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

Benefit plan Vale Mais (“Vale Mais”) and benefit plan Valiaprev (“Valiaprev”) - Certain Company’s employees are participants of Vale Mais and Valiaprev plans with components of defined benefits (specific coverage for death, pensions and disability allowances) and components of defined contributions (for programmable benefits). The defined benefits plan is subject to actuarial evaluations. The defined contribution plan represents a fixed amount held on behalf of the participants. Both Vale Mais and Valiaprev were overfunded as at December 31, 2020 and 2019.

Defined benefit plan (“Plano BD”) - The Plano BD has been closed to new entrants since the year 2000, when the Vale Mais plan was implemented. It is a plan that has defined benefit characteristics, covering almost exclusively retirees and their beneficiaries. It was overfunded as of December 31, 2020 and 2019 and the contributions made by the Company are not material.

“Abono complementação” benefit plan - The Company sponsors a specific group of former employees entitled to receive additional benefits from Valia regular payments plus post-retirement benefits that covers medical, dental and pharmaceutical assistance. The contributions made by the Company finished in 2014. The “abono complementação” benefit was overfunded as at December 31, 2020 and 2019.

Other benefits - The Company sponsors medical plans for employees that meet specific criteria and for employees who use the “abono complementação” benefit. Although those benefits are not specific retirement plans, actuarial calculations are used to calculate future commitments. As those benefits are related to health care plans they have the nature of underfunded benefits, and are presented as underfunded plans as at December 31, 2020 and 2019.

The Foreign plans are managed in accordance with their region. They are divided between plans in Canada, United States of America, United Kingdom, Indonesia, New Caledonia, Japan and Taiwan. Pension plans in Canada are composed of a defined benefit and defined contribution component. Currently the defined benefit plans do not allow new entrants. The foreign defined benefit plans are underfunded as at December 31, 2020 and 2019.

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

i. Change in benefit obligation

	Consolidated			Parent company		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Benefit obligation as at December 31, 2018	13,638	15,226	4,956	13,638	1,296	963
Service costs	26	218	38	26	-	-
Interest costs	1,203	606	234	1,203	113	85
Benefits paid	(1,684)	(990)	(244)	(1,684)	(105)	(77)
Participant contributions	-	4	-	-	5	-
Effect of changes in the actuarial assumptions	2,965	1,440	690	2,965	352	249
Translation adjustment	-	1,314	392	-	-	-
Benefit obligation as at December 31, 2019	16,148	17,818	6,066	16,148	1,661	1,220
Service costs	38	268	92	38	(2)	-
Interest costs	1,123	681	328	1,123	114	160
Benefits paid	(1,793)	(1,266)	(270)	(1,793)	(168)	(86)
Participant contributions	-	2	-	-	2	-
Effect of changes in the actuarial assumptions	622	(613)	809	622	43	1,123
Translation adjustment	-	7,183	1,982	-	-	-
Benefit obligation as at December 31, 2020	16,138	24,073	9,007	16,138	1,650	2,417

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ii. Evolution of assets fair value

	Consolidated			Parent company		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Fair value of plan assets as at December 31, 2018	18,355	12,681	-	18,355	627	-
Interest income	1,640	487	-	1,640	53	-
Employer contributions	107	223	244	107	26	77
Participant contributions	-	3	-	-	4	-
Benefits paid	(1,684)	(981)	(244)	(1,684)	(105)	(77)
Return on plan assets (excluding interest income)	2,965	1,493	-	2,965	53	-
Translation adjustment	-	1,113	-	-	-	-
Others	(3)	-	-	(3)	-	-
Fair value of plan assets as at December 31, 2019	21,380	15,019	-	21,380	658	-
Interest income	1,503	545	-	1,503	43	-
Employer contributions	(217)	272	270	(217)	23	186
Participant contributions	-	2	-	-	2	-
Benefits paid	(1,793)	(1,262)	(270)	(1,793)	(167)	(186)
Return on plan assets (excluding interest income)	(247)	1,794	-	(247)	7	-
Translation adjustment	-	4,374	-	-	-	-
Fair value of plan assets as at December 31, 2020	20,626	20,744	-	20,626	566	-

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

	Consolidated					
	Plans in Brazil					
	December 31, 2020			December 31, 2019		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	5,232	-	-	4,717	-	-
Interest income	376	-	-	432	-	-
Changes on asset ceiling	(1,120)	-	-	83	-	-
Balance at end of the year	4,488	-	-	5,232	-	-
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(16,138)	(1,650)	(2,417)	(16,148)	(1,661)	(1,219)
Fair value of assets	20,626	566	-	21,380	658	-
Effect of the asset ceiling	(4,488)	-	-	(5,232)	-	-
Liabilities	-	(1,084)	(2,417)	-	(1,003)	(1,219)
Current liabilities	-	(167)	(255)	-	(26)	(82)
Non-current liabilities	-	(917)	(2,162)	-	(977)	(1,137)
Liabilities	-	(1,084)	(2,417)	-	(1,003)	(1,219)

	Consolidated					
	Foreign plan					
	December 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	-	(22,423)	(6,590)	-	(16,157)	(4,846)
Fair value of assets	-	20,178	-	-	14,360	-
Liabilities	-	(2,245)	(6,590)	-	(1,797)	(4,846)
Current liabilities	-	(36)	(244)	-	(24)	(185)
Non-current liabilities	-	(2,209)	(6,346)	-	(1,773)	(4,661)
Liabilities	-	(2,245)	(6,590)	-	(1,797)	(4,846)

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	Consolidated					
	December 31, 2020			December 31, 2019		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	5,232	-	-	4,717	-	-
Interest income	376	-	-	432	-	-
Changes on asset ceiling	(1,120)	-	-	83	-	-
Balance at end of the year	4,488	-	-	5,232	-	-
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(16,138)	(24,073)	(9,007)	(16,148)	(17,818)	(6,066)
Fair value of assets	20,626	20,744	-	21,380	15,019	-
Effect of the asset ceiling	(4,488)	-	-	(5,232)	-	-
Liabilities	-	(3,329)	(9,007)	-	(2,799)	(6,066)
Current liabilities	-	(204)	(499)	-	(50)	(306)
Non-current liabilities	-	(3,125)	(8,508)	-	(2,749)	(5,760)
Liabilities	-	(3,329)	(9,007)	-	(2,799)	(6,066)

	Parent company Plans in Brazil					
	December 31, 2020			December 31, 2019		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	5,232	-	-	4,717	-	-
Interest income	376	-	-	432	-	-
Changes on asset ceiling	(1,120)	-	-	83	-	-
Balance at end of the year	4,488	-	-	5,232	-	-
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(16,138)	(1,650)	(2,417)	(16,148)	(1,661)	(1,219)
Fair value of assets	20,626	566	-	21,380	658	-
Effect of the asset ceiling	(4,488)	-	-	(5,232)	-	-
Liabilities	-	(1,084)	(2,417)	-	(1,003)	(1,219)
Current liabilities	-	(167)	(255)	-	(26)	(82)
Non-current liabilities	-	(917)	(2,162)	-	(977)	(1,137)
Liabilities	-	(1,084)	(2,417)	-	(1,003)	(1,219)

iv. Costs recognized in the income statement

	Consolidated								
	Year ended December 31,								
	2020			2019			2018		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Service cost	37	268	89	25	218	38	19	379	139
Interest on expense on liabilities	1,123	681	328	1,203	606	223	1,052	596	220
Interest income on plan assets	(1,503)	(545)	-	(1,640)	(487)	-	(1,519)	(481)	-
Interest expense on effect of (asset ceiling)/ onerous liability	376	-	-	432	-	-	462	-	-
Total of cost, net	33	404	417	20	337	261	14	494	359

	Parent company					
	Year ended December 31,					
	2020			2019		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Service cost	37	(2)	-	25	-	-
Interest on expense on liabilities	1,123	114	(160)	1,203	113	74
Interest income on plan assets	(1,503)	(44)	-	(1,640)	(53)	-
Interest expense on effect of (asset ceiling)/ onerous liability	375	-	-	432	-	-
Total of cost, net	32	68	(160)	20	60	74

v. Costs recognized in the statement of comprehensive income

	Consolidated								
	Year ended December 31,								
	2020			2019			2018		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	(695)	(1,852)	(960)	(640)	(1,812)	(494)	(545)	(1,642)	(626)
Effect of changes actuarial assumptions	(622)	(1,579)	(1,321)	(2,965)	(1,389)	(694)	(2,417)	643	100
Return on plan assets (excluding interest income)	(248)	1,794	-	2,965	1,452	-	1,831	(540)	17
Change of asset ceiling	1,120	-	-	(83)	-	-	478	-	-
Others	-	45	74	-	-	-	-	-	-
	250	260	(1,247)	(83)	63	(694)	(108)	103	117
Deferred income tax	(85)	(76)	462	28	(32)	251	37	(27)	(31)
Others comprehensive income	165	184	(785)	(55)	31	(443)	(71)	76	86
Translation adjustments	-	(402)	(125)	-	(71)	(23)	-	(230)	(45)
Transfers/ disposal/ others	5	(8)	-	-	-	-	(24)	(16)	91
Accumulated other comprehensive income	(525)	(2,078)	(1,870)	(695)	(1,852)	(960)	(640)	(1,812)	(494)

	Parent company					
	Year ended December 31,					
	2020			2019		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	(695)	(547)	(442)	(640)	(358)	(278)
Effect of changes actuarial assumptions	(622)	(43)	(1,123)	(2,965)	(352)	(249)
Return on plan assets (excluding interest income)	(248)	7	-	2,965	65	-
Change of asset ceiling	1,120	-	-	(83)	-	-
Others	-	-	72	-	-	-
	250	(36)	(1,051)	(83)	(287)	(249)
Deferred income tax	(85)	12	382	28	98	85
Others comprehensive income	165	(24)	(669)	(55)	(189)	(164)
Transfers/ disposal/ others	5	(8)	-	-	-	-
Accumulated other comprehensive income	(525)	(579)	(1,111)	(695)	(547)	(442)

vi. Risks related to plans

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

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

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

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

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

vii. Actuarial and economic assumptions and sensitivity analysis

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

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

The following assumptions were adopted in the assessment:

	Brazil		
	December 31, 2020		
	Overfunded pension plans	Underfunded pension plans	Other benefits
	December 31, 2020	December 31, 2019	December 31, 2019
Discount rate to determine benefit obligation	6.62% - 7.18%	6.50%	6.16% - 7.17%
Nominal average rate to determine expense/ income	6.62% - 7.18%	6.50%	N/A
Nominal average rate of salary increase	3.80%	6.00%	N/A
Nominal average rate of benefit increase	3.80%	6.00%	N/A
Immediate health care cost trend rate	N/A	N/A	6.35% - 6.91%
Ultimate health care cost trend rate	N/A	N/A	6.35% - 6.91%
Nominal average rate of price inflation	3.31% - 3.80%	3.50%	3.25% - 3.80%

	Foreign	
	December 31, 2020	
	Underfunded pension plans	Other benefits
	December 31, 2020	December 31, 2019
Discount rate to determine benefit obligation	2.43%	2.62%
Nominal average rate to determine expense/ income	3.04%	3.57%
Nominal average rate of salary increase	3.21%	N/A
Nominal average rate of benefit increase	3.00%	N/A
Immediate health care cost trend rate	N/A	5.35%
Ultimate health care cost trend rate	N/A	4.56%
Nominal average rate of price inflation	2.08%	N/A

For the sensitivity analysis, the Company applies the effect of 1.0% in nominal discount rate to the present value of the Company's actuarial liability. The effects of this analysis on the Company's actuarial liability and assumptions adopted are as follows:

	Consolidated		
	December 31, 2020		
	Overfunded pension plans	Underfunded pension plans	Other benefits
	December 31, 2020	December 31, 2020	December 31, 2020
Nominal discount rate - 1% increase			
Effect on actuarial liability balance	14,747	21,121	7,844
Assumptions made	7.62%	4.20%	4.64%
Nominal discount rate - 1% reduction			
Effect on actuarial liability balance	17,791	27,518	10,467
Assumptions made	5.62%	2.20%	2.64%

viii. Assets of pension plans

Brazilian plan assets as at December 31, 2020 and 2019 includes respectively (i) investments in a portfolio of Vale's stock and other instruments in the amount of R\$105 and R\$107, which are presented as "Investments funds – Equity" and (ii) Brazilian Federal Government securities in the amount of R\$18,773 and R\$18,231, which are presented as "Debt securities governments" and "Investments funds – Fixed"

Foreign plan assets as at December 31, 2020 and 2019 includes Canadian Government securities in the amount of R\$3,575 and R\$2,551, respectively.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated



ix. Overfunded pension plans

Assets by category are as follows:

	Consolidated and Parent Company							
	December 31, 2020				December 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Debt securities - Corporate	-	219	-	219	-	192	-	192
Debt securities - Government	9,563	-	-	9,563	10,947	-	-	10,947
Investments funds - Fixed Income	11,649	-	-	11,649	10,755	-	-	10,755
Investments funds - Equity	2,057	-	-	2,057	2,241	-	-	2,241
International investments	164	-	-	164	111	-	-	111
Structured investments - Private Equity funds	-	-	653	653	-	-	632	632
Structured investments - Real estate funds	642	-	28	670	643	-	70	713
Real estate	-	-	1,325	1,325	-	-	1,301	1,301
Loans to participants	-	-	545	545	-	-	567	567
Total	24,075	219	2,551	26,845	24,697	192	2,570	27,459
Funds not related to risk plans (i)				(6,219)				(6,079)
Fair value of plan assets at end of year				20,626				21,380

(i) Financial investments not related to coverage of overfunded pension plans. Funds are related to the Company's unconsolidated entities and former employees.

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

	December 31, 2020				
	Private equity funds	Real estate funds	Real estate	Loans to participants	Total
Balance as at December 31, 2018	615	57	1,314	622	2,608
Return on plan assets	32	-	31	78	141
Assets purchases	3	13	16	185	217
Assets sold during the year	(18)	-	(60)	(318)	(396)
Balance as at December 31, 2019	632	70	1,301	567	2,570
Return on plan assets	94	(42)	46	99	197
Assets purchases	4	3	52	609	668
Assets sold during the year	(77)	(3)	(74)	(730)	(884)
Balance as at December 31, 2020	653	28	1,325	545	2,551

x. Underfunded pension plans

Assets by category are as follows:

	Consolidated							
	December 31, 2020				December 31, 2019			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	-	530	-	530	-	226	-	226
Equity securities	8,135	-	-	8,135	5,681	8	-	5,689
Debt securities - Corporate	-	2,697	-	2,697	-	2,044	-	2,044
Debt securities - Government	688	3,586	-	4,274	628	2,555	-	3,183
Investments funds - Fixed Income	188	821	-	1,009	196	1,366	-	1,562
Investments funds - Equity	5	1,820	-	1,825	7	544	-	551
Structured investments - Private Equity funds	-	-	1,299	1,299	-	-	855	855
Real estate	-	-	28	28	-	-	221	221
Loans to participants	-	-	12	12	-	-	12	12
Others	-	-	935	935	9	-	667	676
Total	9,016	9,454	2,274	20,744	6,521	6,743	1,755	15,019

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

	Private equity funds	Real estate	Loans to participants	Others	Consolidated Total
Balance as at December 31, 2018	825	196	13	638	1,672
Return on plan assets	44	16	-	20	80
Assets purchases	73	-	(2)	-	71
Assets sold during the year	(129)	(1)	-	(16)	(146)
Translation adjustment	42	10	1	25	78
Balance as at December 31, 2019	855	221	12	667	1,755
Return on plan assets	5	(5)	-	-	-
Assets purchases	104	-	-	-	104
Assets sold during the year	(171)	-	-	-	(171)
Translation adjustment	506	(188)	-	269	587
Balance as at December 31, 2020	1,299	28	12	936	2,274

xi. Disbursement of future cash flow

Vale expects to disburse R\$298 in 2021 in relation to pension plans and other benefits.

xii. Expected benefit payments

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

	December 31, 2020		
	Overfunded pension plans	Underfunded pension plans	Other benefits
2021	1,119	1,240	87
2022	1,142	1,232	92
2023	1,163	1,237	98
2024	1,181	1,241	103
2025	1,196	1,237	108
2026 and thereafter	6,116	6,104	620

b) Profit sharing program ("PLR")

The Company recorded as cost of goods sold and services rendered and other operating expenses related to the profit sharing program R\$1,821 and R\$1,135, R\$1,860 for the years ended on December 31, 2020, 2019 and 2018, respectively.

c) Long-term compensation plan

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

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

For PSU program, the eligible executives have the opportunity to receive during a four year-vesting cycle, an award equivalent to the market value of a determined number of common shares and conditioned to Vale's performance factor measured based on indicators of total return to the shareholders ("TSR") and Environmental, Social, and Governance ("ESG"). It is comprised by 80% of TSR metrics and 20% of ESG indicators.

This award is paid in cash and can occur in cumulative installments of 20% (at the end of 2nd year), 30% (at the end of 3rd year) and 50% (at the end of 4th year), conditioned to the performance factor of each year.

Liabilities of the plans are measured at fair value at every reporting period, based on market rates. Compensation costs incurred are recognized by the defined vesting period of three or four years. For the years ended December 31, 2020, 2019 and 2018 the Company recognized in the income statement the amounts of R\$389, R\$152 and R\$351, respectively, related to long-term compensation plan.

Accounting policy

Employee benefits

i. Current benefits – wages, vacations and related taxes

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

ii. Current benefits – profit sharing program

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

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

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

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

The Company has several retirement plans for its employees.

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

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

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

Critical accounting estimates and judgments

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

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

28. Stockholders' equity

a) Share capital

As at December 31, 2020, the share capital was R\$77,300 corresponding to 5,284,474,782 shares issued and fully paid without par value. The Board of Directors may, regardless of changes to by-laws, issue new common shares (up to the total authorized shares), including the capitalization of profits and reserves to the extent authorized.

	December 31, 2020		
Stockholders	Common shares	Golden shares	Total
Shareholders with more than 5% of total capital	1,940,863,859	-	1,940,863,859
Litela	519,733,209	-	519,733,209
Capital World Investors	298,099,389	-	298,099,389
Bradespar	293,907,266	-	293,907,266
Mitsui&co	286,347,055	-	286,347,055
Blackrock, Inc	272,614,219	-	272,614,219
Capital Research Global Investors	270,162,721	-	270,162,721
Non-Brazilian investors	1,887,304,559	-	1,887,304,559
Brazilian investors	1,301,742,524	-	1,301,742,524
Golden shares	-	12	12
Total outstanding (without shares in treasury)	5,129,910,942	12	5,129,910,954
Shares in treasury	154,563,828	-	154,563,828
Total capital	5,284,474,770	12	5,284,474,782

The Company used 1,628,485 from its treasury shares (2019:2,024,059) for the share-based payment program of its executives (Matching program), in the amount of R\$68 (2019:R\$84) recognized as "Treasury shares utilized in the year" in the Statement of Changes in Equity for the year ended December 31, 2020.

The Company holds shares in treasury for future sale, cancellation or for the Matching program. These shares are recorded in a specific account as a reduction of stockholders' equity at their acquisition value and carried at cost. These programs are approved by the Board of Directors with a determined terms and numbers of shares.

b) Company's remuneration policy

On July 29, 2020, the Board of Directors approved the resumption of the stockholders' remuneration policy, which was suspended as a result of the Brumadinho dam failure. This policy set a semi-annual payment that is calculated by applying 30% of Adjusted EBITDA less sustaining capital expenditures, subject to availability of profit reserves as required by the Brazilian corporate law.

In addition, the Board of Directors approved the payment of dividends in the amount of R\$18,637 on September 30, 2020. Of that amount, R\$12,350, equivalent to R\$2.407510720 per share, is the remuneration for the first half of 2020, in connection with the Company's remuneration policy. This amount was paid from the Company's profit reserves as presented below in "Profit Reserves".

The remaining amount of R\$6,287 relates to the interest on stockholder's equity declared in December 2019, corresponding to the gross amount of R\$7,253, equivalent to R\$1.414364369 per share. The income tax in amount of R\$966 was paid in 2019.

c) Profit distribution

	2020
Net income of the year	26,713
Appropriation to legal reserve	(1,336)
Appropriation to tax incentive reserve	(9)
Net income after appropriations to legal reserve and tax incentive reserve	25,368
Minimum mandatory remuneration	6,342
Additional Stockholders' remuneration (i)	15,524
Appropriation to investments reserve	3,502

(i) Interim dividends calculated based on the September 30, 2020 balance sheet.

(c.i) Stockholder's remuneration

On February 25, 2021 (subsequent event), based on the Company's dividends policy, the Board of Directors approved the stockholder's remuneration in the amount of R\$21,866, equivalent to R\$4,262,386,983 per share, to be paid on March 15, 2021, of which R\$4,288 will be in the form of interest on stockholders' equity and R\$17,578 in the form of dividends.

Of the total amount, R\$6,342 represents the minimum mandatory remuneration for 2020 year end, based on the Company's by-laws, which determines 25% of net income, after appropriations to legal reserve and tax incentive reserve, as the minimum remuneration to stockholders. This amount is recorded as a liability under "Dividends payable" as at December 31, 2020. The remaining amount of R\$15,524 was approved as an additional remuneration to the Company's stockholders and is presented in Equity as "additional remuneration reserve" as at December 31, 2020.

(c.ii) Profit reserves

	Legal reserve	Tax incentive reserve	Investments reserve	Additional remuneration reserve	Total of profit reserves
Balance as at December 31, 2018	6,675	3,418	32,409	-	42,502
Allocation of loss	-	-	(6,672)	-	(6,672)
Dividends and interest on capital of Vale's stockholders	-	-	(7,253)	-	(7,253)
Balance as at December 31, 2019	6,675	3,418	18,484	-	28,577
Allocation of income	1,336	9	3,502	15,524	20,371
Dividends and interest on capital of Vale's stockholders	-	-	(12,350)	-	(12,350)
Balance as at December 31, 2020	8,011	3,427	9,636	15,524	36,598

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

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

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

Additional remuneration reserve - Results from the remuneration proposed by Management that exceeds the mandatory minimum remuneration of 25% of the adjusted net income.

d) Others reserves

	Retirement benefit obligations	Fair value adjustment to investment in equity securities	Results on conversion of shares	Net ownership changes in subsidiaries	Total of other reserves
Balance as at December 31, 2018	(2,945)	798	(1,051)	(2,714)	(5,912)
Other comprehensive income	(486)	(735)	-	-	(1,221)
Translation adjustment	(94)	144	-	-	50
Acquisitions and disposal of noncontrolling interest	-	-	-	1,410	1,410
Balance as at December 31, 2019	(3,525)	207	(1,051)	(1,304)	(5,673)
Other comprehensive income	(436)	641	-	-	205
Translation adjustment	(533)	(125)	-	-	(658)
Acquisitions and disposal of noncontrolling interest	-	-	-	(1,181)	(1,181)
Balance as at December 31, 2020	(4,494)	723	(1,051)	(2,485)	(7,307)

e) Shareholders Agreement

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

On the date of the merger of Valepar into Vale, August 14, 2017, the former Controlling Shareholders of Valepar executed a new shareholders' agreement ("Vale Agreement") that binds only 20% of the totality of Vale's common shares issued by Vale, with no provision for renewal, in order to provide stability to the Company and adjust its corporate governance structure during the transition period to become a dispersed capital company. The Vale Agreement expired on November 10, 2020, therefore, the votes, belonging to the shareholders who signed the Vale Agreement are no longer bound by an agreement.

Accounting policy

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

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

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

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

29. 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.

a) Transactions with related parties

	Consolidated			
	Year ended December 31, 2020			
	Joint Ventures	Associates	Major stockholders	Total
Net operating revenue	1,945	1,233	964	4,142
Cost and operating expenses	(4,897)	(127)	-	(5,024)
Financial result	64	9	(255)	(182)

	Consolidated			
	Year ended December 31, 2019			
	Joint Ventures	Associates	Major stockholders	Total
Net operating revenue	1,480	1,164	809	3,453
Cost and operating expenses	(6,883)	(127)	-	(7,010)
Financial result	207	(3)	(126)	78

	Consolidated			
	Year ended December 31, 2018			
	Joint Ventures	Associates	Major stockholders	Total
Net operating revenue	1,275	1,128	759	3,162
Cost and operating expenses	(8,365)	(136)	-	(8,501)
Financial result	406	-	(428)	(22)

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 logistics costs for using the Nacala Logistic Corridor.

b) Outstanding balances with related parties

	December 31, 2020				December 31, 2019			
	Joint Ventures	Associates	Major stockholders (iii)	Total	Joint Ventures	Associates	Major stockholders (iii)	Total
Assets								
Cash and cash equivalents	-	-	10,820	10,820	-	-	5,578	5,578
Accounts receivable	565	236	11	812	367	88	19	474
Dividends receivable	101	-	-	101	335	25	-	360
Loans (i)	5,800	-	-	5,800	7,737	-	-	7,737
Derivatives financial instruments	-	-	12	12	-	-	169	169
Other assets	354	8	-	362	262	-	-	262
				-				-
Liabilities								
Supplier and contractors	627	54	181	862	1,218	113	149	1,480
Loans (ii)	-	7,440	4,907	12,347	-	5,511	6,804	12,315
Derivatives financial instruments	-	-	1,255	1,255	-	-	259	259
Other liabilities	1,222	-	-	1,222	2,293	-	-	2,293

(i) Refers to the loan with Nacala BV., which carries interest at the average rate of 8.2% p.a. and maturity at 2034. In 2020, the Company recognized an impairment of this receivable in the amount of R\$4,106 (note 18).

(ii) Mainly relates to Vale Moçambique's loan payable to an entity controlled by one of its non-controlling shareholders, which carries interest at 5.83% p.a. and maturity at 2034.

(iii) Refers to regular financial instruments with large financial institutions of which the stockholders were part of the controlling "shareholders' agreement", which has expired on November 10, 2020 (note 28(e)).

c) The key management personnel remuneration

	Year ended December 31,		
	2020	2019	2018
Short-term benefits			
Wages	47	30	28
Direct and indirect benefits	74	41	36
Profit sharing program ("PLR")	37	3	31
	158	74	95
Long-term benefits			
Shares based	-	-	10
Severance	37	18	68
	195	92	173

The amounts described above include the Board of Directors and the Executive Officers and are presented on a cash basis.

30. Commitments

a) Contractual obligations

Mainly relates to agreements for the acquisition of fuel, energy and the acquisition of raw materials and services. The required and non-cancelable minimum payments related to contractual obligations as at December 31, 2020 are as follows:

	Consolidated	
	December 31, 2020	December 31, 2019
Purchase obligations	36,328	22,207
Purchase energy	15,306	14,380
Total minimum payments required	51,634	36,587

b) Financial guarantees provided

As at December 31, 2020 and 2019, corporate financial guarantees provided by the Company (within the limit of its direct or indirect interest) for certain associates and joint ventures were R\$8,091 and R\$6,671, respectively. The fair value of this financial guarantees in December 31, 2020 and 2019 totaled R\$4,558 and R\$2,116, respectively, and is recorded in the balance sheet as "Others non-current liabilities".