FULLNET COMMUNICATIONS INC
Form 10-K
March 31, 2009

Table of Contents

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

(Mark One)

þ **ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2008

o **TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from __________ to __________

Commission File Number: 000-27031
FULLNET COMMUNICATIONS, INC.
(Name of small business issuer in its Charter)

OKLAHOMA	**73-1473361**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

201 Robert S. Kerr Avenue, Suite 210
Oklahoma City, Oklahoma 73102
(Address of principal executive offices)
(405) 236-8200
(Issuer s telephone number)
Securities registered under Section 12(b) of the Act: None
Securities registered under to Section 12(g) of the Act:
Title of class
Common Stock, $0.00001 Par Value

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No þ

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15 (d) of the Exchange Act. o

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act during the past 12 months (or for such shorter period that the registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes þ No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this Chapter) is not contained herein, and will not be contained, to the best of the registrant s knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. þ

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filed, a non-accelerated file, or a small reporting company.

Large accelerated filer o	Accelerated filer o	Non-accelerated filer o	Smaller reporting company þ

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No þ

The aggregate market value of the Common Stock held by non-affiliates computed by reference to the price at which the Common Stock was last sold, or the average bid and asked price of the Common Stock, as of the last business day (June 30, 2008) of registrant s completed second quarter was $220,409.

As of March 27, 2009, 7,425,565 shares of the registrant s common stock, $0.00001 par value, were outstanding.

FULLNET COMMUNICATIONS, INC.
FORM 10-K
For the Fiscal Year Ended December 31, 2008
TABLE OF CONTENTS

Table of Contents

Throughout this report the first personal plural pronoun in the nominative case form we and its objective case form us , its possessive and the intensive case forms our and ourselves and its reflexive form ourselves refer collectively to Fullnet Communications, Inc. and its subsidiaries, and its and their executive officers and directors.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING INFORMATION

This Annual Report on Form 10-K and the information incorporated by reference may include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act), and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). In particular, we direct your attention to Item 1. Business, Item 1A. Risk Factors, Item 2. Properties, Item 3. Legal Proceedings, Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations, and Item 8. Financial Statements and Supplementary Data. We intend the forward-looking statements to be covered by the safe harbor provisions for forward-looking statements in these sections. All statements regarding our expected financial position and operating results, our business strategy, our financing plans and the outcome of any contingencies are forward-looking statements. These statements can sometimes be identified by our use of forward-looking words such as may, believe, plan, will, anticipate, estimate, expect, intend and other phrases of similar meaning. Kı unknown risks, uncertainties and other factors could cause the actual results to differ materially from those contemplated by the statements. The forward-looking information is based on various factors and was derived using numerous assumptions.

Although we believe that our expectations that are expressed in these forward-looking statements are reasonable, we cannot promise that our expectations will prove to be correct. Our actual results could be materially different from our expectations, including the following:

- We may fail to prevail against AT&T on various disputed billings that total approximately $7,970,000;
- We may lose subscribers or fail to grow our subscriber base;
- We may not successfully integrate new subscribers or assets obtained through acquisitions;
- We may fail to compete with existing and new competitors;
- We may not be able to sustain our current growth;
- We may not adequately respond to technological developments impacting the Internet;
- We may experience a major system failure;
- We may not be able to find needed capital resources.

This list is intended to identify some of the principal factors that could cause actual results to differ materially from those described in the forward-looking statements included elsewhere in this report. These factors are not intended to represent a complete list of all risks and uncertainties inherent in our business, and should be read in conjunction with the more detailed cautionary statements included in this Report under the caption Item 1A. Risk Factors, our other Securities and Exchange Commission filings and our press releases.

Table of Contents

PART I

Item 1. Business

General

We are an integrated communications provider offering integrated communications and Internet connectivity to individuals, businesses, organizations, educational institutions and government agencies. Through our subsidiaries, we provide high quality, reliable and scalable Internet access, web hosting, equipment co-location and traditional telephone services. Our overall strategy is to become the dominant integrated communications provider for residents and small to medium-sized businesses in Oklahoma.

References to us in this Report include our subsidiaries: FullNet, Inc. (FullNet), FullTel, Inc. (FullTel), and FullWeb, Inc. (FullWeb). Our principal executive offices are located at 201 Robert S. Kerr Avenue, Suite 210, Oklahoma City, Oklahoma 73102, and our telephone number is (405) 236-8200. We also maintain Internet sites on the World Wide Web (WWW) at www.fullnet.net and www.fulltel.net. Information contained on our Websites is not, and should not be deemed to be, a part of this Report.

Company History

We were founded in 1995 as CEN-COM of Oklahoma, Inc., an Oklahoma corporation, to bring dial-up Internet access and education to rural locations in Oklahoma that did not have dial-up Internet access. We changed our name to FullNet Communications, Inc. in December 1995, and shifted our focus from offering dial-up services to providing wholesale and private label network connectivity and related services to other Internet service providers.

Our current business strategy is to become the dominant integrated communications provider in Oklahoma. We expect to grow through the acquisition of additional customers for our carrier-neutral co-location space and traditional telephone services, as well as through the acquisition of Internet service providers.

We market our carrier neutral co-location solutions in our network operations center to other competitive local exchange carriers, Internet service providers and web-hosting companies. Our co-location facility is carrier neutral, allowing customers to choose among competitive offerings rather than being restricted to one carrier. Our network operations center is Telco-grade and provides customers a high level of operative reliability and security. We offer flexible space arrangements for customers, 24-hour onsite support and both battery and generator backup.

Through FullTel, our wholly owned subsidiary, we are a fully licensed competitive local exchange carrier or CLEC in Oklahoma. At December 31, 2008 FullTel provided us with local telephone access in approximately 232 cities.

Our common stock trades on the OTC Bulletin Board under the symbol FULO. While our common stock trades on the OTC Bulletin Board, it is very thinly traded, and there can be no assurance that our stockholders will be able to sell their shares should they so desire. Any market for the common stock that may develop, in all likelihood, will be a limited one, and if such a market does develop, the market price may be volatile.

Mergers and Acquisitions

Our acquisition strategy is designed to leverage our existing network backbone and internal operations to enable us to enter new markets in Oklahoma, as well as to expand our presence in existing markets, and to benefit from economies of scale.

Table of Contents

Our Business Strategy

As an integrated communications provider, we intend to increase shareholder value by continuing to build scale through both acquisitions and internal growth and then leveraging increased revenues over our fixed-costs base. Our strategy is to meet the customer service requirements of retail, business, educational and government Internet users in our target markets, while benefiting from the scale advantages obtained through being a fully integrated backbone and broadband provider. The key elements of our overall strategy with respect to our principal business operations are as follows:

Target Strategic Acquisitions

The goal of our acquisition strategy is to accelerate market penetration by acquiring Internet service providers in Oklahoma communities and to acquire strategic Internet service providers in Oklahoma City and Tulsa. Additionally, we will continue to build upon our core competencies and expand our technical, customer service staff and sales force in Oklahoma communities. We evaluate acquisition candidates based on their compatibility with our overall business plan of penetrating rural and outlying markets as well as Oklahoma City and Tulsa. When a candidate is acquired, we will integrate our existing Internet, network connectivity and value-added services with the services offered by the acquired company and use either the local sales force or install our own dealer sales force to continue to increase market share. The types of acquisitions targeted by us include Internet service providers located in markets into which we want to expand or to which we may already provide private-label Internet connectivity. Other types of targeted acquisitions include local business-only Internet service providers in markets where we have established points of presence and would benefit from the acquired company s local sale and network solutions sales and technical staff and installed customer base through the potential increase in our network utilization. When assessing an acquisition candidate, we focus on the following criteria:

- Potential revenue and subscriber growth;
- Low subscriber turnover or churn rates;
- Density in the market as defined by a high ratio of subscribers to points of presence (POPs);
- Favorable competitive environment;
- Low density network platforms that can be integrated readily into our backbone network; and
- Favorable consolidation savings.

Generate Internal Sales Growth

We intend to expand our customer base by increasing our marketing efforts. At December 31, 2008, our direct sales force consisted of one individual in our Oklahoma City office coordinating all our business-to-business solutions sales. We currently have independent re-sellers responsible for their individual markets. Our sales force is supported in its efforts by technical engineers and our senior management. In addition, we are exploring other strategies to increase our sales, including other marketing partners such as electric cooperatives. We currently have one of the 20 local Oklahoma electric cooperatives as a marketing partner.

Grow Subscriber Base

We intend to grow our subscriber base through a combination of internal and acquisition driven growth. We anticipate that this growth will increase the density of our subscriber base within a service area utilizing our available network operations, customer support, back office functions and management overhead without further cost increase or with minimal cost increase. We expect our local markets to generate internal subscriber growth primarily by enhancing subscribers online experience, providing a sense of a national presence while maintaining local community content and developing a consumer recognized regional FullNet brand.

Increase Rural Area Market Share

We believe that the rural areas of Oklahoma are underserved by Internet service providers, and that significant profitable growth can be achieved in serving these markets by providing reliable Internet connectivity at a reasonable cost to the residents and businesses located in these areas. We believe we can obtain a significant Internet service provider and business-to-business market share in Oklahoma. To that end, through our wholly-owned subsidiary, FullTel, we became a licensed competitive local exchange carrier in Oklahoma. Since March 2003 when we installed our telephone switch, FullTel, as a competitive local exchange carrier, has provided local telephone numbers for Internet access.

Table of Contents

Enhance Subscribers Online Experience

We intend to maximize our subscriber retention and add new subscribers by enhancing our services in the following ways:

Ease of Use During the first quarter of 2001, we implemented a common, easy to use CD-ROM based software package that automatically configures all of the individual Internet access programs after a one-time entry by the user of a few required fields of information such as, name, user name and password.

Internet Access Services

We provide Internet access services to individual and small business subscribers located in Oklahoma on both a retail and wholesale basis. Through FullNet, we provide our customers with a variety of dial-up and dedicated connectivity, as well as direct access to a wide range of Internet applications and resources, including electronic mail. FullNet s full range of services includes:

Private label retail and business direct dial-up connectivity to the Internet and

Secure private networks through our backbone network

Our branded and private label Internet access services are provided through a statewide network with points-of-presence in 232 communities throughout Oklahoma. Points-of-presence are local telephone numbers through which subscribers can access the Internet. Our business services consist of high-speed Internet access services and other services that enable wholesale customers to outsource their Internet and electronic commerce activities. We had approximately 1,700 subscribers at December 31, 2008. Additionally, FullNet sells Internet access to other Internet service providers, who then resell Internet access to their own customers under their private label or under the FullNet brand name.

We intend to expand our subscriber base through a marketing campaign and through acquisitions. We are focusing our acquisition efforts on companies with forward-looking sales and marketing, high-quality customer service and solid local market dominance. See Item 1. Business Company History.

Currently, we offer the following two types of Internet connections:

Dial-Up Connections

The simplest connection to the Internet is the dial-up account. This method of service connects the user to the Internet through the use of a modem and standard telephone line. Currently, FullNet users can connect via dial-up at speeds up to 56 Kbps. We support these users through the use of sophisticated modem banks located in our facility in Oklahoma City that send data through a router and out to the Internet. We support the higher speed 56K, V.92 MOH and Integrated Services Digital Network connections with state-of-the-art digital modems. With a dial-up connection, a user can gain access to the Internet for e-mail, the World Wide Web, file transfer protocol, news groups, and a variety of other useful applications.

Leased Line Connections

Many businesses and some individuals have a need for more bandwidth to the Internet to support a network of users or a busy Website. We have the capacity to sell a leased line connection to users. This method of connection gives the user a full-time high-speed (up to 1.5 mbps) connection to the Internet. The leased line solution comes at greater expense to the user. These lines are leased through the telephone companies at a high installation and monthly fee.

We believe that our Internet access services provide customers with the following benefits:

Fast and Reliable Internet Access We have implemented a network architecture providing exceptional quality and consistency in Internet services, making us one of the recognized backbone leaders in the Oklahoma Internet service provider industry. We offer unlimited, unrestricted and reliable Internet access at a low monthly price. We have designed our network such that our users never have to worry about busy signals due to a lack of available modems. Dial-up access is available for the following modem speeds: 14.4K, 28.8K, 33.6K, K56Flex, 56K V.90, v.92 MOH, ISDN 64K and ISDN 128K. Our dial-up access supports all major platforms and operating systems, including MS Windows, UNIX(R), Mac OS, OS/2 and LINUX. This allows simplified access to all Internet applications, including the World Wide Web, email, and news and file transfer protocol.

Table of Contents

Cost-Effective Access We offer high quality Internet connectivity and enhanced business services at price points that are generally lower than those charged by other Internet service providers with national coverage. Additionally, we offer pre-bundled access services packages under monthly or prepaid plans.

Superior Customer Support We provide superior customer service and support, with customer care and technical personnel available by telephone and on-line 24 hours per day, 365 days per year.

CLEC Operations

Through FullTel, our wholly owned subsidiary, we are a fully licensed competitive local exchange carrier or CLEC in Oklahoma. CLECs are new phone companies evolved from the Telecommunications Act of 1996 (Telecommunications Act) that requires the incumbent local exchange carriers or ILECs, generally the regional Bell companies including AT&T, to provide CLECs access to their local facilities, and to compensate CLECs for traffic originated by ILECs and terminated on the CLECs network. By adding our own telephone switch and infrastructure to the existing telephone network in March 2003, we offer certain local Internet access for dial-up services in most of Oklahoma. As a CLEC, we may subscribe to and resell all forms of local telephone service in Oklahoma.

While Internet access is the core focus of growth for us, we plan to also provide traditional telephone service throughout Oklahoma.

A core piece of our marketing strategy is the cross pollination between our Internet activities and FullTel s local dial-up service. By organizing and funding FullTel, we gained local dial-up Internet access to approximately 80% of Oklahoma. In return, FullTel gained access to our entire Internet service provider customer base.

The FullTel data center telephone switching equipment was installed in March 2003. At which time, FullTel began the process of activating local access telephone numbers for every city in Oklahoma within the AT&T service area. At December 31, 2008, FullTel provided us with local telephone access in approximately 232 cities. However, our ability to fully take advantage of these opportunities will be dependent upon the availability of additional capital.

Sales and Marketing

We focus on marketing our services to two distinct market segments: enterprises (primarily small and medium size businesses) and consumers. By attracting enterprise customers who use the network primarily during the daytime, and consumer customers who use the network primarily at night, we are able to utilize our network infrastructure more cost effectively.

Competition

The market for Internet connectivity and related services is extremely competitive. We anticipate that competition will continue to intensify as the use of the Internet continues to expand and grow. The tremendous growth and potential market size of the Internet access market has attracted many new start-ups as well as existing businesses from a variety of industries. We believe a reliable network, knowledgeable salespeople and the quality of technical support currently are the primary competitive factors in our targeted market and that price is usually secondary to these factors.

Our current and prospective competitors include, in addition to other national, regional and local Internet service providers, long distance and local exchange telecommunications companies, cable television, direct broadcast satellite, wireless communications providers and online service providers. While we believe that our network, products and customer service distinguish us from these competitors, most of these competitors have significantly greater market presence, brand recognition, financial, technical and personnel resources than us.

Internet Service Providers

Our current primary competitors include other Internet service providers with a significant national presence that focuses on business customers, such as Cox Communications and AT&T. These competitors have greater market share, brand recognition, financial, technical and personnel resources than us. We also compete with regional and local Internet service providers in our targeted markets.

Telecommunications Carriers

The major long distance companies, also known as inter-exchange carriers, including AT&T, Verizon, and Sprint, offer Internet access services and compete with us. Reforms in the federal regulation of the telecommunications industry have created greater opportunities for ILECs, including the Regional Bell Operating Companies or RBOCs, and other competitive local exchange carriers, to enter the Internet connectivity market. In order to address the Internet connectivity requirements of the business customers of long distance and local carriers, we believe that there is a move toward horizontal integration by ILECs and CLECs through acquisitions or joint ventures with, and the wholesale purchase of, connectivity from Internet service providers. The MCI/WorldCom merger (and the prior WorldCom/MFS/UUNet consolidation), GTE s acquisition of BBN, the acquisition by ICG Communications, Inc. of Netcom, Global Crossing s acquisition of Frontier Corp. (and Frontier s prior acquisition of Global Center) and AT&T s purchase of IBM s global communications network are indicative of this trend. Accordingly, we expect that we will experience increased competition from the traditional telecommunications carriers. These telecommunication carriers, in addition to their greater network coverage, market presence, financial, technical and personnel resources also have large existing commercial customer bases.

Cable Companies, Direct Broadcast Satellite and Wireless Communications Companies

Many of the major cable companies are offering Internet connectivity, relying on the viability of cable modems and economical upgrades to their networks, including Media One and Time Warner Cablevision, Inc., Cox Communications and Tele-Communications, Inc. (TCI).

The companies that own these broadband networks could prevent us from delivering Internet access through the wire and cable connections that they own. Our ability to compete with telephone and cable television companies that are able to support broadband transmissions, and to provide better Internet services and products, may depend on future regulation to guarantee open access to the broadband networks. However, in January 1999, the Federal Communications Commission declined to take any action to mandate or otherwise regulate access by Internet service providers to broadband cable facilities at this time. It is unclear whether and to what extent local and state regulatory agencies will take any initiatives to implement this type of regulation, and whether they will be successful in establishing their authority to do so. Similarly, the Federal Communications Commission is considering proposals that could limit the right of Internet service providers to connect with their customers over broadband local telephone lines. In addition to competing directly in the Internet service provider market, both cable and television facilities operators are also aligning themselves with certain Internet service providers who would receive preferential or exclusive use of broadband local connections to end users. As high-speed broadband facilities increasingly become the preferred mode by which customers access the Internet, if we are unable to gain access to these facilities on reasonable terms, our business, financial condition and results of operations could be materially adversely affected.

Online Service Providers

The dominant online service providers, including America Online, Incorporated, Comcast, AT&T, Road Runner, Verizon and Earthlink, have all entered the Internet access business by engineering their current proprietary networks to include Internet access capabilities. We compete to a lesser extent with these service providers, which currently are primarily focused on the consumer marketplace and offer their own content, including chat rooms, news updates, searchable reference databases, special interest groups and shopping.

However, America Online s merger with Time-Warner, its acquisition of Netscape Communications Corporation and related strategic alliance with Sun Microsystems enable it to offer a broader array of Internet -based services and products that could significantly enhance its ability to appeal to the business marketplace and, as a result, compete more directly with Internet service providers like us. CompuServe has also announced that it will target Internet connectivity for the small to medium sized business market.

We believe that our ability to attract business customers and to market value-added services is a key to our future success. However, there can be no assurance that our competitors will not introduce comparable services or products at similar or more attractive prices in the future or that we will not be required to reduce our prices to match competition. Recently, many competitive ISPs have shifted their focus from individual customers to business customers.

Moreover, there can be no assurance that more of our competitors will not shift their focus to attracting business customers, resulting in even more competition for us. There can be no assurance that we will be able to offset the effects of any such competition or resulting price reductions. Increased competition could result in erosion of our market share and could have a material adverse effect on our business, financial condition and results of operations.

Government Regulations

The following summary of regulatory developments and legislation is not complete. It does not describe all present and proposed federal, state, and local regulation and legislation affecting the Internet service provider and telecommunications industries. Existing federal and state regulations are currently subject to judicial proceedings, legislative hearings, and administrative proposals that could change, in varying degrees, the manner in which our businesses operate. We cannot predict the outcome of these proceedings or their impact upon the Internet service provider and telecommunications industries or upon our business.

The provision of Internet access service and the underlying telecommunications services are affected by federal, state, local and foreign regulation. The Federal Communications Commission or FCC exercises jurisdiction over all facilities of, and services offered by, telecommunications carriers to the extent that they involve the provision, origination or termination of jurisdictionally interstate or international communications. The state regulatory commissions retain jurisdiction over the same facilities and services to the extent they involve origination or termination of jurisdictionally intrastate communications. In addition, as a result of the passage of the Telecommunications Act, state and federal regulators share responsibility for implementing and enforcing the domestic pro-competitive policies of the Telecommunications Act. In particular, state regulatory commissions have substantial oversight over the provision of interconnection and non-discriminatory network access by ILECs. Municipal authorities generally have some jurisdiction over access to rights of way, franchises, zoning and other matters of local concern.

Our Internet operations are not currently subject to direct regulation by the FCC or any other U.S. governmental agency, other than regulations applicable to businesses generally. However, the FCC continues to review its regulatory position on the usage of the basic network and communications facilities by Internet service providers. Although in an April 1998 Report, the FCC determined that Internet service providers should not be treated as telecommunications carriers and therefore should not be regulated, it is expected that future Internet service provider regulatory status will continue to be uncertain. Indeed, in that report, the FCC concluded that certain services offered over the Internet, such as phone-to-phone Internet telephony, may be functionally indistinguishable from traditional telecommunications service offerings, and their non-regulated status may have to be reexamined.

Changes in the regulatory structure and environment affecting the Internet access market, including regulatory changes that directly or indirectly affect telecommunications costs or increase the likelihood of competition from RBOCs or other telecommunications companies, could have an adverse effect on our business. Although the FCC has decided not to allow local telephone companies to impose per-minute access charges on Internet service providers, and the reviewing court has upheld that decision, further regulatory and legislative consideration of this issue is likely. In addition, some telephone companies are seeking relief through state regulatory agencies. The imposition of access charges would affect our costs of serving dial-up customers and could have a material adverse effect on our business, financial condition and results of operations.

In addition to our Internet service provider operations, we have focused attention on acquiring telecommunications assets and facilities, which is a regulated activity. Fulltel, our subsidiary, has received competitive local exchange carrier or CLEC certification in Oklahoma. The Telecommunications Act requires CLECs not to prohibit or unduly restrict resale of their services; to provide dialing parity, number portability, and nondiscriminatory access to telephone numbers, operator services, directory assistance, and directory listings; to afford access to poles, ducts, conduits, and rights-of-way; and to establish reciprocal compensation arrangements for the transport and termination of telecommunications traffic. In addition to federal regulation of CLECs, the states also impose regulatory obligations on CLECs. While these obligations vary from state to state, most states require CLECs to file a tariff for their services and charges; require CLECs to charge just and reasonable rates for their services, and not to discriminate among similarly-situated customers; to file periodic reports and pay certain fees; and to comply with certain services standards and consumer protection laws. As a provider of domestic basic telecommunications services, particularly competitive local exchange services, we could become subject to further regulation by the FCC or another regulatory agency, including state and local entities.

Table of Contents

The Telecommunications Act has caused fundamental changes in the markets for local exchange services. In particular, the Telecommunications Act and the related FCC promulgated rules mandate competition in local markets and require that ILECs interconnect with CLECs. Under the provisions of the Telecommunications Act, the FCC and state public utility commissions share jurisdiction over the implementation of local competition: the FCC was required to promulgate general rules and the state commissions were required to arbitrate and approve individual interconnection agreements. The courts have generally upheld the FCC in its promulgation of rules, including a January 25, 1999 U.S. Supreme Court ruling which determined that the FCC has jurisdiction to promulgate national rules in pricing for interconnection.

In July 2000, the Eighth Circuit Court issued a decision on the earlier remand from the Supreme Court and rejected, as contrary to the Telecommunications Act, the use of hypothetical network costs, including total element long-run incremental costs methodology (TELRIC), which the FCC had used in developing certain of its pricing rules. The Eighth Circuit Court also vacated the FCC s pricing rules related to unbundled network elements (UNEs), termination and transport, but upheld its prior decision that ILECs universal service subsidies should not be included in the costs of providing network elements. Finally, the Eighth Circuit Court also vacated the FCC s rules requiring that: (1) ILECs recombine unbundled network elements for competitors in any technically feasible combination; (2) all preexisting interconnection agreements be submitted to the states for review; and (3) the burden of proof for retention of a rural exemption be shifted to the ILEC. The FCC sought review of the Eighth Circuit Court s invalidation of TELRIC and was granted certiorari. On May 13, 2002, the Supreme Court reversed certain of the Eighth Circuit Court s findings and affirmed that the FCC s rules concerning forward looking economic costs, including TELRIC, were proper under the Telecommunications Act. The Supreme Court also restored the FCC s requirement that the ILEC s combine UNEs for competitors when they are unable to do so themselves.

In November 1999, the FCC released an order making unbundling requirements applicable to all ILEC network elements uniformly. UNE-P is created when a competing carrier obtains all the network elements needed to provide service from the ILEC. In December 1999, the FCC released an order requiring the provision of unbundled local copper loops enabling CLECs to offer competitive Digital Subscriber Loop Internet access. The FCC reconsidered both orders in its first triennial review of its policies on UNEs completed in early 2003, as further discussed below.

On August 21, 2003, the FCC released the text of its Triennial Review Order. In response to the remand of the United States Court of Appeals for the District of Columbia circuit, the FCC adopted new rules governing the obligations of ILECs to unbundle the elements of their local networks for use by competitors. The FCC made national findings of impairment or non-impairment for loops, transport and, most significantly, switching. The FCC delegated to the states the authority to engage in additional fact finding and make alternative impairment findings based on a more granular impairment analysis including evaluation of applicability of FCC-established triggers. The FCC created mass market and enterprise market customer classifications that generally correspond to the residential and business markets, respectively. The FCC found that CLECs were not impaired without access to local circuit switching when serving enterprise market customers on a national level. CLECs, however, were found to be impaired on a national level without access to local switching when serving mass market customers. State commissions had 90 days to ask the FCC to waive the finding of no impairment without switching for enterprise market customers. The FCC presumption that CLECs are impaired without access to transport, high capacity loops and mass market switching is subject to a more granular nine month review by state commissions pursuant to FCC-established triggers and other economic and operational criteria.

The FCC also opened a further notice of proposed rulemaking to consider the pick and choose rules under which a competing carrier may select from among the various terms of interconnection offered by an ILEC in its various interconnection agreements. Comments have been filed, but the FCC has not issued a decision.

The Triennial Review Order also provided that:

ILECs are not required to unbundle packet switching as a stand-alone network element.

Two key components of the FCC s TELRIC pricing rules were clarified. First, the FCC clarified that the risk-adjusted cost of capital used in calculating UNE prices should reflect the risks associated with a competitive market. Second, the FCC declined to mandate the use of any particular set of asset lives for depreciation, but clarified that the use of an accelerated depreciation mechanism may present a more accurate method of calculating economic depreciation.

CLECs continue to be prohibited from avoiding any liability under contractual early termination clauses in the event a CLEC converts a special access circuit to an UNE.

We are monitoring the Oklahoma state commission proceedings and participating where necessary as the commission undertakes the 90 day and nine month analyses to establish rules or make determinations as directed by the Triennial Review Order. In addition, numerous petitions and appeals have been filed in the courts and with the FCC challenging many of the findings in the Triennial Review Order and seeking a stay on certain portions of the order. The appeals have been consolidated in the D.C. Circuit Court of Appeals. Oral arguments were heard on January 28, 2004. On March 2, 2004, a three-judge panel in the D.C. Circuit Court of Appeals overturned the FCC s Triennial Review Order with regard to network unbundling rules. A majority of the FCC Commissioners is seeking a court-ordered stay and plan to appeal the ruling to the Supreme Court. Until all of these proceedings are concluded, the impact of this order, if any, on our CLEC operations cannot be determined.

An important issue for CLECs is the right to receive reciprocal compensation for the transport and termination of Internet traffic. We believe that, under the Telecommunications Act, CLECs are entitled to receive reciprocal compensation from ILECs. However, some ILECs have disputed payment of reciprocal compensation for Internet traffic, arguing that Internet service provider traffic is not local traffic. Most states have required ILECs to pay CLECs reciprocal compensation. However, in October 1998, the FCC determined that dedicated digital subscriber line service is an interstate service and properly tariffed at the interstate level. In February 1999, the FCC concluded that at least a substantial portion of dial-up Internet service provider traffic is jurisdictionally interstate. The FCC also concluded that its jurisdictional decision does not alter the exemption from access charges currently enjoyed by Internet service providers. The FCC established a proceeding to consider an appropriate compensation mechanism for interstate Internet traffic. Pending the adoption of that mechanism, the FCC saw no reason to interfere with existing interconnection agreements and reciprocal compensation arrangements. The FCC order has been appealed. In addition, there is a risk that state public utility commissions that have previously considered this issue and ordered the payment of reciprocal compensation by the ILECs to the CLECs may be asked by the ILECs to revisit their determinations, or may revisit their determinations on their own motion. To date, at least one ILEC has filed suit seeking a refund from a carrier of reciprocal compensation that the ILEC had paid to that carrier. There can be no assurance that any future court, state regulatory or FCC decision on this matter will favor our position. An unfavorable result may have an adverse impact on our potential future revenues as a CLEC. Reciprocal compensation is unlikely to be a significant or a long-term revenue source for us.

As we become a competitor in local exchange markets, we will become subject to state requirements regarding provision of intrastate services. This may include the filing of tariffs containing rates and conditions. As a new entrant, without market power, we expect to face a relatively flexible regulatory environment. Nevertheless, it is possible that some states could require us to obtain the approval of the public utilities commission for the issuance of debt or equity or other transactions that would result in a lien on our property used to provide intrastate services.

Item 1A. Risk Factors.

This Report includes forward looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. Although we believe that our plans, intentions and expectations reflected in such forward looking statements are reasonable, we can give no assurance that such plans, intentions or expectations will be achieved. Important factors that could cause actual results to differ materially from our forward looking statements are set forth below and elsewhere in this Report. All forward looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements set forth below.

Necessity of Obtaining an Acceptable Successor Interconnection Agreement. We are dependent upon obtaining certain services from AT&T (formerly SBC) pursuant to our interconnection agreement with them. We along with many other telecommunications companies in Oklahoma are currently a party to one or more proceedings before the Oklahoma Corporation Commission (the OCC) relating to the terms of our interconnection agreements with AT&T and an anticipated successor to these interconnection agreements. Failure to obtain an acceptable successor interconnection agreement would have a material adverse effect on our business prospects, financial condition and results of operation.

Necessity of Prevailing Against AT&T on Disputed Invoices. AT&T (formerly SBC) has invoiced us for various amounts that total approximately $7,970,000. AT&T stopped invoicing the us for these monthly services and simply sent monthly Inter Company Billing Statements reflecting the balance of approximately $7,970,000 with no further additions. The last Inter Company Billing Statement we received was dated December 15, 2007 and reflected a balance of approximately $7,970,000. We believe that AT&T has no basis for these charges, are reviewing them with our attorneys and plan to vigorously dispute them. However, failure to prevail in the dispute of these invoices would have a material adverse effect on our business prospects, financial condition and results of operation.

Limited Operating History. We have a relatively limited operating history upon which an evaluation of our prospects can be made. Consequently, the likelihood of our success must be considered in view of all of the risks, expenses and delays inherent in the establishment and growth of a new business including, but not limited to, expenses, complications and delays which cannot be foreseen when a business is commenced, initiation of marketing activities, the uncertainty of market acceptance of new services, intense competition from larger more established competitors and other factors. Our ability to achieve profitability and growth will depend on successful development and commercialization of our current and proposed services. No assurance can be given that we will be able to introduce our proposed services or market our services on a commercially successful basis.

Table of Contents

Necessity of Additional Financing. In order for us to have any opportunity for significant commercial success and profitability, we must successfully obtain additional financing, either through borrowings, additional private placements or an initial public offering, or some combination thereof. Although we are actively pursuing a variety of funding sources, there can be no assurance that we will be successful in such pursuit.

Limited Marketing Experience. We have limited experience in developing and commercializing new services based on innovative technologies, and there is limited information available concerning the potential performance of our hardware or market acceptance of our proposed services. There can be no assurance that unanticipated expenses, problems or technical difficulties will not occur which would result in material delays in product commercialization or that our efforts will result in successful product commercialization.

Uncertainty of Products/Services Development. Although considerable time and financial resources were expended in the development of our services and products, there can be absolutely no assurance that problems will not develop which would have a material adverse effect on us. We will be required to commit considerable time, effort and resources to finalize our product/service development and adapt our products and services to satisfy specific requirements of potential customers. Continued system refinement, enhancement and development efforts are subject to all of the risks inherent in the development of new products/services and technologies, including unanticipated delays, expenses, technical problems or difficulties, as well as the possible insufficiency of funds to satisfactorily complete development, which could result in abandonment or substantial change in commercialization. There can be no assurance that development efforts will be successfully completed on a timely basis, or at all, that we will be able to successfully adapt our hardware or software to satisfy specific requirements of potential customers, or that unanticipated events will not occur which would result in increased costs or material delays in development or commercialization. In addition, the complex technologies planned to be incorporated into our products and services may contain errors that become apparent subsequent to commercial use. Remedying such errors could delay our plans and cause us to incur substantial additional costs.

New Concept; Uncertainty of Market Acceptance and Commercialization Strategy. As is typical in the case of a new business concept, demand and market acceptance for a newly introduced product or service is subject to a high level of uncertainty. Achieving market acceptance for this new concept will require significant efforts and expenditures by us to create awareness and demand by consumers. Our marketing strategy and preliminary and future marketing plans may be unsuccessful and are subject to change as a result of a number of factors, including progress or delays in our marketing efforts, changes in market conditions (including the emergence of potentially significant related market segments for applications of our technology), the nature of possible license and distribution arrangements which may or may not become available to us in the future and economic, regulatory and competitive factors. There can be no assurance that our strategy will result in successful product commercialization or that our efforts will result in initial or continued market acceptance for our proposed products.

Competition; Technological Obsolescence. The markets for our products and services are characterized by intense competition and an increasing number of potential new market entrants who have developed or are developing potentially competitive products and services. We will face competition from numerous sources, certain of which may have substantially greater financial, technical, marketing, distribution, personnel and other resources than us, permitting such companies to implement extensive marketing campaigns, both generally and in response to efforts by additional competitors to enter into new markets and market new products and services. In addition, our product and service markets are characterized by rapidly changing technology and evolving industry standards that could result in product obsolescence and short product life cycles. Accordingly, our ability to compete will be dependent upon our ability to complete the development of our products and to introduce our products and/or services into the marketplace in a timely manner, to continually enhance and improve our software and to successfully develop and market new products. There can be no assurance that we will be able to compete successfully, that competitors will not develop technologies or products that render our products and/or services obsolete or less marketable or that we will be able to successfully enhance our products or develop new products and/or services.

Risks Relating to the Internet. Businesses reliant on the Internet may be at risk due to inadequate development of the necessary infrastructure, including reliable network backbones or complementary services, high-speed modems and security procedures. The Internet has experienced, and is expected to continue to experience, significant growth in the number of users and amount of traffic. There can be no assurance that the Internet infrastructure will continue to be able to support the demands placed on it by sustained growth. In addition, there may be delays in the development and adoption of new standards and protocols, the inability to handle increased levels of Internet activity or due to increased government regulation. If the necessary Internet infrastructure or complementary services are not developed to effectively support growth that may occur, our business, results of operations and financial condition would be materially adversely affected.

Potential Government Regulations. We are subject to state commission, Federal Communications Commission and court decisions as they relate to the interpretation and implementation of the Telecommunications Act, the interpretation of Competitive Local Exchange Carrier interconnection agreements in general and our interconnection agreements in particular. In some cases, we may become bound by the results of ongoing proceedings of these bodies or the legal outcomes of other contested interconnection agreements that are similar to agreements to which we are a party. The results of any of these proceedings could have a material adverse effect on our business, prospects, financial condition and results of operations.

Table of Contents

Dependence on Key Personnel. Our success depends in large part upon the continued successful performance of our current executive officers and key employees, Messrs. Timothy J. Kilkenny, Roger P. Baresel and Jason C. Ayers, for our continued research, development, marketing and operation. Although we have employed, and will employ in the future, additional qualified employees as well as retaining consultants having significant experience, if Messrs. Kilkenny, Baresel or Ayers fail to perform any of their duties for any reason whatsoever, our ability to market, operate and support our products/services will be adversely affected. While we are located in areas where the available pool of people is substantial, there is also significant competition for qualified personnel.

Limited Public Market. During February 2000, our common stock began trading on the OTC Bulletin Board under the symbol FULO. While our common stock continues to trade on the OTC Bulletin Board, there can be no assurance that our stockholders will be able to sell their shares should they so desire. Any market for the common stock that may develop, in all likelihood, will be a limited one, and if such a market does develop, the market price may be volatile.

No Payment of Dividends on Common Stock. We have not paid any dividends on our common stock. For the foreseeable future, we anticipate that all earnings, if any, which may be generated from our operations, will be used to finance our growth and that cash dividends will not be paid to holders of the common stock.

Penny Stock Regulation. Broker-dealer practices in connection with transactions in penny stocks are regulated by certain penny stock rules adopted by the SEC. Penny stocks generally are equity securities with a price of less than $5.00 (other than securities registered on certain national securities exchanges or quoted on the NASDAQ system). The penny stock rules require a broker-dealer, prior to a transaction in a penny stock not otherwise exempt from the rules, to deliver a standardized risk disclosure document that provides information about penny stocks and the nature and level of risks in the penny stock market. The broker-dealer also must provide the customer with current bid and offer quotations for the penny stock, the compensation of the broker-dealer and its salesperson in the transaction, and, if the broker dealer is the sole market-maker, the broker-dealer must disclose this fact and the broker-dealer s presumed control over the market, and monthly account statements showing the market value of each penny stock held in the customer s account. In addition, broker-dealers who sell such securities to persons other than established customers and accredited investors (generally, those persons with assets in excess of $1,000,000 or annual income exceeding $200,000 or $300,000 together with their spouse), must make a special written determination that the penny stock is a suitable investment for the purchaser and receive the purchaser s written agreement to the transaction. Consequently, these requirements may have the effect of reducing the level of trading activity, if any, in the secondary market for a security that is or becomes subject to the penny stock rules. Our common stock is subject to the penny stock rules at the present time, and consequently our stockholders will find it more difficult to sell their shares.

Employees

As of December 31, 2008, we had 13 employees employed in engineering, sales, marketing, customer support and related activities and general and administrative functions. None of our employees are represented by a labor union, and we consider our relations with our employees to be good. We also engage consultants from time to time with respect to various aspects of our business.

Item 1B. Unresolved Staff Comments.

We do not have any unresolved staff comments to report.

Item 2. Properties

We maintain our executive office in approximately 13,000 square feet at 201 Robert S. Kerr Avenue, Suite 210 in Oklahoma City, at an effective annual rental rate of $10.20 per square foot. These premises are occupied pursuant to a ten-year lease that expires December 31, 2009.

Item 3. Legal Proceedings

As a provider of telecommunications, we are affected by regulatory proceedings in the ordinary course of our business at the state and federal levels. These include proceedings before both the Federal Communications Commission and the Oklahoma Corporation Commission (OCC). In addition, in our operations we rely on obtaining many of our underlying telecommunications services and/or facilities from incumbent local exchange carriers or other carriers pursuant to interconnection or other agreements or arrangements. In January 2007, we concluded a regulatory proceeding pursuant to the Federal Telecommunications Act of 1996 before the OCC relating to the terms of our interconnection agreement with Southwestern Bell Telephone, L.P. d/b/a AT&T, which succeeds a prior interconnection agreement. The OCC approved this agreement in May 2007. This agreement may be affected by regulatory proceedings at the federal and state levels, with possible adverse impacts on us. We are unable to accurately predict the outcomes of such regulatory proceedings at this time, but an unfavorable outcome could have a material adverse effect on our business, financial condition or results of operations.

Item 4. Submission of Matters to a Vote of Security Holders

No matters were submitted to a vote of security holders during the fourth quarter of 2008.

PART II

Item 5. Market for Registrant s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Our common stock is traded in the over-the-counter market and is quoted on the OTC Bulletin Board under the symbol FULO. The closing sale prices reflect inter-dealer prices without adjustment for retail markups, markdowns or commissions and may not reflect actual transactions. The following table sets forth the high and low closing sale prices of our common stock during the calendar quarters presented as reported by the OTC Bulletin Board.

	Common Stock Closing Sale Prices High	Low
2008 Calendar Quarter Ended:		
March 31	$ .04	$ .04
June 30	.04	.04
September 30	.02	.01
December 31	.03	.02
2007 Calendar Quarter Ended:		
March 31	$ .19	$ .03
June 30	.08	.03
September 30	.05	.03
December 31	.06	.03

Number of stockholders

The number of beneficial holders of record of our common stock as of the close of business on March 27, 2009 was approximately 110.

Dividend Policy

To date, we have declared no cash dividends on our common stock, and do not expect to pay cash dividends in the near term. We intend to retain future earnings, if any, to provide funds for operations and the continued expansion of our business.

Securities Authorized for Issuance under Equity Compensation Plans

The following table sets forth as of December 31, 2008, information related to each category of equity compensation plan approved or not approved by our shareholders, including individual compensation arrangements with our non-employee directors. We do not have any equity compensation plans that have been approved by our shareholders. All of our outstanding stock option grants and warrants were pursuant to individual compensation arrangements and exercisable for the purchase of our common stock shares.

Plan Category	Number of Shares Underlying Unexercised Options and Warrants	Weighted-Average Exercise Price of Outstanding Options and Warrants	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans

Equity compensation plans approved by our shareholders:			
None	Not Applicable	Not Applicable	Not Applicable
Equity compensation plans not approved by our shareholders:			
Stock option grants to non-employee directors		$	
Stock options granted to employees	2,447,704	$ .53	
Warrants and certain stock options issued to non-employees	326,000	$ .47	
Total	2,773,704	$ .52	

Recent Sales of Unregistered Securities

Stock options exercisable for the purchase of 684,430 shares of our common stock were exercised in March 2008 for $28,049. These common stock shares were offered and sold pursuant to Rule 506 of Regulation D of the Securities Act, and no commissions and fees were paid. With respect to the foregoing common stock transaction, we relied on Sections 4(2) and 3(b) of the Securities Act of 1933 and applicable registration exemptions of Rules 504 and 506 of Regulation D and applicable state securities laws.

Item 6. Selected Financial Data.

As a smaller reporting company, we are not required and have not elected to report any information under this item (see Item 8. Financial Statements and Supplementary Data.).

Item 7. Management s Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion should be read in conjunction with our Consolidated Financial Statements and notes thereto included in Part II, Item 8 of this Report. The results shown herein are not necessarily indicative of the results to be expected in any future periods. This discussion contains forward-looking statements based on current expectations that involve risks and uncertainties. Actual results and the timing of events could differ materially from the forward-looking statements as a result of a number of factors. For a discussion of the factors that could cause actual results to differ materially from the forward-looking statements, see Item 1A. Risk Factors and our other periodic reports and documents filed with the Securities and Exchange Commission.

Overview

We are an integrated communications provider offering integrated communications and Internet connectivity to individuals, businesses, organizations, educational institutions and government agencies. Through our subsidiaries, we provide high quality, reliable and scalable Internet access, web hosting, equipment co-location, and traditional telephone service.

Our overall strategy is to become the dominant integrated communications provider for residents and small to medium-sized businesses in Oklahoma. We believe that the rural areas of Oklahoma are underserved by Internet service providers, and that significant profitable growth can be achieved in serving these markets by providing reliable Internet connectivity and value-added services at a reasonable cost to the residents and businesses located in these areas. We believe we can obtain a significant Internet service provider and business-to-business market share in Oklahoma. Our wholly-owned subsidiary, FullTel, is a licensed competitive local exchange carrier or CLEC and provides local telephone numbers for Internet access.

The market for Internet connectivity and related services is extremely competitive. We anticipate that competition will continue to intensify. The tremendous growth and potential market size of the Internet access market has attracted many new start-ups as well as existing businesses from a variety of industries. We believe that a reliable network, knowledgeable sales people and the quality of technical support currently are the primary competitive factors in our targeted market and that price is usually secondary to these factors.

As a provider of telecommunications, we are affected by regulatory proceedings in the ordinary course of our business at the state and federal levels. These include proceedings before both the Federal Communications Commission and the Oklahoma Corporation Commission (OCC). In addition, in our operations we rely on obtaining many of our underlying telecommunications services and/or facilities from incumbent local exchange carriers or other carriers pursuant to interconnection or other agreements or arrangements. In January 2007, we concluded a regulatory proceeding pursuant to the Federal Telecommunications Act of 1996 before the OCC relating to the terms of our interconnection agreement with Southwestern Bell Telephone, L.P. d/b/a AT&T, which succeeds a prior interconnection agreement. The OCC approved this agreement in May 2007. This agreement may be affected by regulatory proceedings at the federal and state levels, with possible adverse impacts on us. We are unable to accurately predict the outcomes of such regulatory proceedings at this time, but an unfavorable outcome could have a material adverse effect on our business, financial condition or results of operations.

During September 2005, we received an invoice from AT&T (formerly SBC) of approximately $230,000 for services alleged to have been rendered to us between June 1, 2004 and June 30, 2005. Since then, we have received a number of additional invoices from AT&T which cover services through February 2007 and total approximately $7,970,000. AT&T stopped invoicing us for these monthly services and simply sent monthly Inter Company Billing Statements reflecting the balance of approximately $7,970,000 with no further additions. The last Inter Company Billing Statement we received was dated December 15, 2007 and reflected a balance of approximately $7,970,000. The alleged services were eventually identified by AT&T as Switched Access services. We formally notified AT&T in writing that we dispute these invoices and requested that AT&T withdraw and/or credit all of these invoices in full. AT&T has not responded to our written dispute. We believe AT&T has no basis for these charges. Therefore, we have not recorded any expense or liability related to these billings. However, failure to prevail in the dispute of these invoices would have a material adverse effect on our business prospects, financial condition and results of operation.

Table of Contents

Results of Operations

The following table sets forth certain statement of operations data as a percentage of revenues for the years ended December 31, 2008 and 2007:

	For the Years Ended December 31,			
	2008		2007	
	Amount	Percentage of revenues	Amount	Percentage of revenues
Revenues:				
Access service revenues	$ 532,661	28.2%	$ 643,155	33.9%
Co-location and other revenues	1,353,890	71.8	1,252,413	66.1
Total revenues	1,886,551	100.0	1,895,568	100.0
Operating costs and expenses:				
Cost of access service revenues	235,638	12.5	233,931	12.3
Cost of co-location and other revenues	321,196	17.0	322,922	17.0
Selling, general and administrative expenses	1,371,259	72.7	1,334,285	

Other operating expenses, net

5(c)

(1,613

)

(1,338

)

(937

)

(1,163

)

(893

)

(5,890

)

(5,438

)

(5,360

)

480

1,805

Impairment and disposal of non-current assets

16, 19 and 20

(3,523

)

(1,025

)

(4,168

)

(792

)

(549

)

Operating income

43,869
34,812
23,962
41,770
31,966

Financial income

6

1,549

1,532

606

282

364

Financial expenses

6

(8,394

)

(10,512

)

(9,295

)

(7,673

)

(9,503

)

Other financial items

6

(11,213

)

(670

)

14,991

(10,059

)

(222

)

Equity results and other results in associates and joint ventures

16 and 22

(693

)

(277

)

(3,242

)

(693

)

(277

)

Income before income taxes

25,118

24,885

27,022

23,627

22,328

Income taxes

8

Current tax

(2,806

)

(2,664

)

(3,307

)

(1,172

)

(1,158

)

Deferred tax

3,772

(1,943
)

(6,260
)

3,512

(957
)

966

(4,607
)

(9,567
)

2,340

(2,115
)

Net income from continuing operations	
	26,084
	20,278
	17,455
	25,967
	20,213
Net income (loss) attributable to noncontrolling interests	

117

65

(6

)

Net income from continuing operations attributable to Vale s stockholders

25,967

20,213

17,461

25,967

20,213

Discontinued operations

14

Loss from discontinued operations

(310

)

(2,608

)

(4,159

)

(310

)

(2,586

)

Loss attributable to noncontrolling interests

(22

)

(9

)

Loss from discontinued operations attributable to Vale s stockholders

(310

)

(2,586

)

(4,150

)

(310

)

(2,586

)

Net income

25,774

17,670

13,296

25,657

17,627

Net income (loss) attributable to noncontrolling interests

117

43

(15

)

Net income attributable to Vale s stockholders

25,657

17,627

13,311

25,657

17,627

Earnings per share attributable to Vale s stockholders:

Basic and diluted earnings per share:

9

Common share (R$)

4.95
3.39
2.56
4.95
3.39

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

Table of Contents

Statement of Comprehensive Income

In millions of Brazilian reais

	Consolidated			Parent company	
	Year ended December 31				
	2018	2017	2016	2018	2017
Net income	**25,774**	**17,670**	**13,296**	**25,657**	**17,627**
Other comprehensive income (loss):					
Items that will not be reclassified subsequently to the income statement					
Retirement benefit obligations	142	(164)	(266)	(112)	(125)
Fair value adjustment to investment in equity securities	275			228	
Equity results in associates and joint ventures				301	(39)
Transfer to reserve	(51)			(51)	
Total items that will not be reclassified subsequently to the income statement, net of tax	**366**	**(164)**	**(266)**	**366**	**(164)**
Items that may be reclassified subsequently to the income statement					
Translation adjustments	14,541	3,337	(14,188)	14,244	3,309
Cash flow hedge			36		
Net investments hedge	(1,958)	(310)	4	(1,958)	(310)
Transfer of realized results to net income	(257)	(34)	(276)	(112)	
Total of items that may be reclassified subsequently to the income statement, net of tax	**12,326**	**2,993**	**(14,424)**	**12,174**	**2,999**
Total comprehensive income (loss)	**38,466**	**20,499**	**(1,394)**	**38,197**	**20,462**
Comprehensive income (loss) attributable to noncontrolling interests	269	37	(923)		
Comprehensive income (loss) attributable to Vale s stockholders	**38,197**	**20,462**	**(471)**		
From continuing operations	38,181	20,568	(13)		
From discontinued operations	16	(106)	(458)		
	38,197	**20,462**	**(471)**		

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.

Table of Contents

Statement of Cash Flows

In millions of Brazilian reais

	Consolidated			Parent company	
		Year ended December 31			
	2018	2017	2016	2018	2017
Cash flow from operating activities:					
Income before income taxes from continuing operations	25,118	24,885	27,022	23,627	22,328
Adjusted for:					
Equity results from subsidiaries				(4,195)	(5,277)
Equity results and other results in associates and joint ventures	693	277	3,242	693	277
Impairment and disposal of non-current assets	3,523	1,025	4,168	792	549
Depreciation, amortization and depletion	12,240	11,842	12,107	6,059	5,604
Financial results, net	18,058	9,650	(6,302)	17,450	9,361
Changes in assets and liabilities:					
Accounts receivable	(1,012)	3,983	(9,863)	(5,762)	15,301
Inventories	(2,994)	(1,030)	616	(174)	(612)
Suppliers and contractors	(1,414)	691	768	(642)	670
Provision - Payroll, related charges and others remunerations	349	1,236	435	514	980
Proceeds from cobalt and gold stream transactions	2,603		1,683		
Other assets and liabilities, net	(482)	(2,702)	1,854	717	163
	56,682	**49,857**	**35,730**	**39,079**	**49,344**
Interest on loans and borrowings paid (note 21)	(4,023)	(5,373)	(5,894)	(5,769)	(5,911)
Derivatives paid, net	(250)	(763)	(5,604)	(381)	(577)
Interest on participative stockholders debentures paid	(400)	(428)	(268)	(400)	(428)
Income taxes (including settlement program)	(4,089)	(3,322)	(2,827)	(1,932)	(2,351)
Net cash provided by operating activities from continuing operations	**47,920**	**39,971**	**21,137**	**30,597**	**40,077**
Cash flow from investing activities:					
Capital expenditures	(13,899)	(12,236)	(17,343)	(8,200)	(8,413)
Additions to investments	(79)	(292)	(875)	(1,515)	(1,895)
Proceeds from disposal of assets and investments	4,959	2,926	1,785	492	23
Dividends and interest on capital received	922	739	669	2,836	2,645
Others investments activities, net (1)	7,173	(1,827)	(794)	5,810	(8,435)
Proceeds from gold stream transaction			885		
Net cash used in investing activities from continuing operations	**(924)**	**(10,690)**	**(15,673)**	**(577)**	**(16,075)**
Cash flow from financing activities:					
Loans and borrowings from third-parties (note 21)	4,584	6,223	25,667	4,584	2,014
Payments of loans and borrowings from third-parties (note 21)	(28,149)	(28,878)	(26,630)	(15,372)	(21,058)
	(12,415)	(4,667)	(857)	(12,415)	(4,667)

Dividends and interest on capital paid to stockholders					
Dividends and interest on capital paid to noncontrolling interest	(635)	(404)	(972)		
Share buyback program (note 30)	(3,858)			(3,858)	
Transactions with noncontrolling stockholders	(56)	(305)	(69)		
Net cash used in financing activities from continuing operations	**(40,529)**	**(28,031)**	**(2,861)**	**(27,061)**	**(23,711)**
Net cash used in discontinued operations (note 14)	**(157)**	**(817)**	**(527)**		
Increase in cash and cash equivalents	**6,310**	**433**	**2,076**	**2,959**	**291**
Cash and cash equivalents in the beginning of the year	14,318	13,891	14,022	1,876	1,203
Effect of exchange rate changes on cash and cash equivalents	2,170	38	(2,207)		
Effects of disposals of subsidiaries and merger, net of cash and cash equivalents	(385)	(44)			382
Cash and cash equivalents at end of the year	**22,413**	**14,318**	**13,891**	**4,835**	**1,876**
Non-cash transactions:					
Additions to property, plant and equipment - capitalized loans and borrowing costs	704	1,179	2,291	700	1,176

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

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

Table of Contents

Statement of Financial Position

In millions of Brazilian reais

		Consolidated		Parent company	
	Notes	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Assets					
Current assets					
Cash and cash equivalents		22,413	14,318	4,835	1,876
Accounts receivable	10	10,261	8,602	17,333	9,560
Other financial assets	13	1,683	6,689	360	409
Inventories	11	17,216	12,987	4,775	4,601
Prepaid income taxes		2,104	2,584	1,938	2,378
Recoverable taxes	12	3,422	3,876	2,024	2,091
Others		2,157	1,780	2,096	1,542
		59,256	**50,836**	**33,361**	**22,457**
Non-current assets held for sale	14		11,865		7,082
		59,256	**62,701**	**33,361**	**29,539**
Non-current assets					
Judicial deposits	28(c)	6,649	6,571	6,274	6,110
Other financial assets	13	12,180	10,690	5,276	1,865
Prepaid income taxes		2,107	1,754		
Recoverable taxes	12	2,913	2,109	2,281	2,062
Deferred income taxes	8(a)	26,767	21,959	17,536	14,200
Others		1,015	882	1,163	810
		51,631	**43,965**	**32,530**	**25,047**
Investments	16	12,495	11,802	139,510	117,387
Intangibles	18	30,850	28,094	15,622	13,471
Property, plant and equipment	19	187,481	181,535	103,816	102,978
		282,457	**265,396**	**291,478**	**258,883**
Total assets		**341,713**	**328,097**	**324,839**	**288,422**
Liabilities					
Current liabilities					
Suppliers and contractors		13,610	13,367	7,342	7,503
Loans and borrowings	21	3,889	5,633	2,523	4,378
Other financial liabilities	13	6,213	3,260	5,083	4,413
Taxes payable	8(d)	2,519	2,307	2,238	1,991
Provision for income taxes		813	1,175	206	
Liabilities related to associates and joint ventures	22	1,120	1,080	1,120	1,080
Provisions	26	5,278	4,610	3,331	2,904
Dividends and interest on capital	30(d)		4,742		4,439

Others		1,843	3,284	2,743	2,552
		35,285	**39,458**	**24,586**	**29,260**
Liabilities associated with non-current assets held for sale	14		3,899		
		35,285	**43,357**	**24,586**	**29,260**
Non-current liabilities					
Loans and borrowings	21	56,039	68,759	23,082	28,966
Other financial liabilities	13	10,511	9,575	71,740	54,955
Taxes payable	8(d)	15,179	16,176	14,876	15,853
Deferred income taxes	8(a)	5,936	5,687		
Provisions	26	27,491	23,243	9,758	6,900
Liabilities related to associates and joint ventures	22	3,226	2,216	3,226	2,216
Deferred revenue - Gold stream		6,212	6,117		
Others		8,151	4,861	7,168	6,514
		132,745	**136,634**	**129,850**	**115,404**
Total liabilities		**168,030**	**179,991**	**154,436**	**144,664**
Stockholders equity	30				
Equity attributable to Vale s stockholders		170,403	143,758	170,403	143,758
Equity attributable to noncontrolling interests		3,280	4,348		
Total stockholders equity		**173,683**	**148,106**	**170,403**	**143,758**
Total liabilities and stockholders equity		**341,713**	**328,097**	**324,839**	**288,422**

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

Table of Contents

Statement of Changes in Equity

In millions of Brazilian reais

	Share capital	Results on conversion of shares	Capital reserve	Net ownership changes in subsidiaries	Profit reserves	Treasury stocks	Unrealized fair value gain (losses)	Cumulative translation adjustments	Retained earnings	Equity attributable to Vale s stockholders	Equity attributa to noncontrollin interests
Balance at December 31, 2015	**77,300**	**50**		**(1,881)**	**3,846**	**(2,746)**	**(3,873)**	**58,464**		**131,160**	**8,2**
Net income (loss)									**13,311**	**13,311**	**(**
Other comprehensive income:											
Retirement benefit obligations							(263)			(263)	
Cash flow hedge							26			26	
Available-for-sale financial instruments							4			4	
Translation adjustments							367	(13,916)		(13,549)	(9
Transactions with stockholders:											
Dividends and interest on capital of Vale s stockholders									(3,459)	(3,459)	
Dividends of noncontrolling interest											(9
Acquisitions and disposal of noncontrolling interest				11						11	
Capitalization of noncontrolling interest advances											
Appropriation to undistributed retained earnings					9,852				(9,852)		
Balance at December 31, 2016	**77,300**	**50**		**(1,870)**	**13,698**	**(2,746)**	**(3,739)**	**44,548**		**127,241**	**6,4**
Net income									**17,627**	**17,627**	

Other comprehensive income:											
Retirement benefit obligations							(164)			(164)	
Net investments hedge								(310)		(310)	
Translation adjustments							(9)	3,318		3,309	
Transactions with stockholders:											
Dividends and interest on capital of Vale s stockholders					(2,065)				(4,721)	(6,786)	
Dividends of noncontrolling interest											(6
Acquisitions and disposal of noncontrolling interest				(793)						(793)	(1,6
Capitalization of noncontrolling interest advances											1
Appropriation to undistributed retained earnings					12,906				(12,906)		
Merger of Valepar (note 30)			3,634							3,634	
Balance at December 31, 2017	**77,300**	**50**	**3,634**	**(2,663)**	**24,539**	**(2,746)**	**(3,912)**	**47,556**		**143,758**	**4,3**
Net income									**25,657**	25,657	**1**
Other comprehensive income:											
Retirement benefit obligations				(51)			142			91	
Fair value adjustment to investment in equity securities							275			275	
Net investments hedge								(1,958)		(1,958)	
Translation adjustments							247	13,885		14,132	1
Transactions with stockholders:											
Dividends and interest on capital of Vale s stockholders									(7,694)	(7,694)	
Dividends of noncontrolling interest											(6
Acquisitions and disposal of											(7

noncontrolling interest											
Capitalization of noncontrolling interest advances											
Appropriation to undistributed retained earnings					17,963				(17,963)		
Share buyback program						(3,858)				(3,858)	
Balance at December 31, 2018	**77,300**	**50**	**3,634**	**(2,714)**	**42,502**	**(6,604)**	**(3,248)**	**59,483**		**170,403**	**3,2**

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

14

Table of Contents

Value Added Statement

In millions of Brazilian Reais

	Consolidated		Parent company	
	Year ended December 31			
	2018	2017	2018	2017
Generation of value added from continuing operations				
Gross revenue				
Revenue from products and services	136,005	110,007	82,301	65,049
Impairment and disposal of non-current assets	(3,523)	(1,025)	(792)	(549)
Revenue from the construction of own assets	12,620	6,449	8,031	5,857
Expected credit losses	(26)	(14)	(5)	4
Other revenues	7,639	663	3,338	419
Less:				
Acquisition of products	(1,901)	(1,728)	(761)	(652)
Material, service and maintenance	(35,592)	(27,022)	(19,878)	(16,796)
Oil and gas	(5,682)	(4,199)	(3,725)	(2,872)
Energy	(3,335)	(3,108)	(1,700)	(1,470)
Freight	(15,972)	(10,717)	(158)	(106)
Other costs and expenses	(10,172)	(7,681)	(7,158)	(3,027)
Gross value added	**80,061**	**61,625**	**59,493**	**45,857**
Depreciation, amortization and depletion	(12,240)	(11,842)	(6,059)	(5,604)
Net value added	**67,821**	**49,783**	**53,434**	**40,253**
Received from third parties				
Equity results from entities	(693)	(277)	3,502	5,366
Equity results from discontinued operations				(2,952)
Financial income	1,549	1,532	282	364
Monetary and exchange variation of assets	1,455	500	2,242	443
Total value added from continuing operations to be distributed	**70,132**	**51,538**	**59,460**	**43,474**
Value added from discontinued operations to be distributed	58	1,534		
Total value added to be distributed	**70,190**	**53,072**	**59,460**	**43,474**
Personnel	9,367	7,673	4,975	3,702
Taxes and contributions	11,543	6,553	5,866	6,528
Current income tax	2,806	2,664	1,172	1,158
Deferred income tax	(3,772)	1,943	(3,512)	957
Financial expense (excludes capitalized interest)	9,244	11,325	8,176	8,483
Monetary and exchange variation of liabilities	11,662	2,630	11,712	1,950
Other remunerations of third party funds	3,508	1,058	5,414	3,069
Reinvested net income	25,657	17,627	25,657	17,627
Net income attributable to noncontrolling interest	117	65		
Distributed value added from continuing operations	**70,132**	**51,538**	**59,460**	**43,474**

Distributed value added from discontinued operations	58	1,534		
Distributed value added	**70,190**	**53,072**	**59,460**	**43,474**

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

1. Corporate information

Vale S.A. and its direct and indirect subsidiaries (Vale or Company) are global producers of iron ore and iron ore pellets, key raw materials for steelmaking, and producers of nickel, which is used to produce stainless steel and metal alloys employed in the production of several products. The Company also produces copper, metallurgical and thermal coal, manganese ore, ferroalloys, platinum group metals, gold, silver and cobalt. The information by segment is presented in note 4.

Vale S.A. (the Parent Company) is a public company headquartered in the city of Rio de Janeiro, Brazil with securities traded on the stock exchanges of São Paulo B3 S.A. (VALE3), New York - NYSE (VALE), Paris - NYSE Euronext (VALE3) and Madrid LATIBEX (XVALO).

On December 22, 2017 after the conversion of the class A preferred shares into common shares, the Company migrated to the special listing segment of B3 S.A. (*Novo Mercado*) (further details in note 30).

2. Basis for preparation of the financial statements

a) Statement of compliance

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

b) Basis of presentation

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

The issue of these financial statements was authorized by the Board of Directors on March 27, 2019.

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$). For presentation purposes, these financial statements are presented in Brazilian Reais.

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

	Closing rate			Average rate for the year ended		
	2018	**2017**	**2016**	**2018**	**2017**	**2016**
US Dollar (US$)	3.8748	3.3080	3.2591	3.6558	3.1925	3.4833
Canadian dollar (CAD)	2.8451	2.6344	2.4258	2.8190	2.4618	2.6280
Euro (EUR or)	4.4390	3.9693	3.4384	4.3094	3.6088	3.8543

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

d) Significant accounting policies

Significant and relevant accounting policies for the understanding of the recognition and measurement basis used in the preparation of these financial statements were included in the respective notes. The accounting polices applied in the preparations of these financial statements are consistent with those adopted and disclosed in the financial statements of prior years, except for new accounting policies related to the application of IFRS 9 Financial Instruments and IFRS 15 Revenue from Contracts with Customers, which were adopted by the Company from January 1, 2018.

The nature and effect of the changes as a result of adoption of these new accounting standards are described below:

IFRS 9 Financial Instrument This standard addresses the classification and measurement of financial assets and liabilities, new impairment model and new rules for hedge accounting. The Company applied IFRS 9 prospectively, with an initial application date of January 1, 2018. The Company has not restated the comparative information, which continues to be reported under IAS 39 - Financial Instruments. The main changes are described below:

Classification and measurement - Under IFRS 9, debt instruments are subsequently measured at fair value through profit or loss (FVTPL), through amortized cost, or fair value through other comprehensive income (FVOCI). The classification is based on the Company s business model for managing the assets and whether the instruments contractual cash flows represent solely payments of principal and interest (SPPI) on the principal amount outstanding.

On the date of initial application of IFRS 9, the Company has assessed which business models apply to the financial assets held by the Company and has classified its financial instruments into the appropriate IFRS 9 categories. The reclassification of the financial instruments of the Company on January 1, 2018 were as follows:

	Measurement category		Carrying amount		
	IAS 39	**IFRS 9**	**IAS 39**	**IFRS 9**	**Difference**
Financial assets					
Current					
Financial investments		FVTPL	61	61	

	Loans and receivables			
Derivative financial instruments	FVTPL	FVTPL	351	351
Accounts receivable	Loans and receivables	Amortized cost	8,602	8,602
Related parties	Loans and receivables	Amortized cost	6,277	6,277
Non-current				
Derivative financial instruments	FVTPL	FVTPL	1,497	1,497
Loans	Loans and receivables	Amortized cost	498	498
Related parties	Loans and receivables	Amortized cost	8,695	8,695
Financial liabilities				
Current				
Suppliers and contractors	Loans and receivables	Amortized cost	13,367	13,367
Derivative financial instruments	FVTPL	FVTPL	344	344
Loans and borrowings	Loans and receivables	Amortized cost	5,633	5,633
Related parties	Loans and receivables	Amortized cost	2,916	2,916
Non-current				
Derivative financial instruments	FVTPL	FVTPL	2,269	2,269
Loans and borrowings	Loans and receivables	Amortized cost	68,759	68,759
Related parties	Loans and receivables	Amortized cost	3,226	3,226
Participative stockholders debentures	Loans and receivables	Amortized cost	4,080	4,080

These reclassifications have no impact on the measurement categories. The financial instruments that were classified as Loans and receivables under IAS 39 did meet the IFRS 9 criteria for classification at amortized cost, because these financial instruments are held within a business model whose objective is to hold to collect the cash flows, which represent solely payments of principal and interest. The derivatives held for trading are required to be held as FVTPL under IFRS 9, therefore there were no changes in relation to these instruments from the adoption of IFRS 9.

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

For accounts receivables, the Company has applied the standard s simplified approach and has calculated ECLs based on lifetime expected credit losses and the identified loss is deemed not significant. The Company has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the economic environment and by any financial guarantees related to these accounts receivables.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

At each reporting date, the Company assesses whether financial assets carried at amortized cost are credit-impaired. Information about the Company s exposure to credit risk is set out in note 33.

The new impairment approach of IFRS 9 did not have a significant impact to the Company for the year ended December 31, 2018.

Hedge accounting - The Company has elected to adopt the new general hedge accounting model in IFRS 9. The changes introduced by IFRS 9 relating to hedge accounting currently have no impact, as the Company does not currently apply cash flow or fair value hedge accounting. The Company currently applies the net investment hedge for which there are no changes introduced by this new standard (note 25).

IFRS 15 Revenue from Contracts with Customers This standard establishes a comprehensive framework for determining whether, how much and when revenue is recognized. It replaced IAS 18 Revenue, IAS 11 Construction Contracts and related interpretations. The Company has adopted the new standard using the modified retrospective method. Accordingly, the comparative information presented has not been restated.

The Company has assessed its revenue streams and the nature and effect of the changes as a result of adoption of IFRS 15 is described below:

• Sales of products - Under IFRS 15, there is no significant impact on the timing of products revenue recognition, since usually the transfer of risks and rewards and the transfer of control under the sales contracts are at the same point in time.

• Shipping services - A 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. According to the previous standard (IAS 18), the revenue from shipping services was recognized upon loading, as well as the related costs, and was not considered a separate service.

Under IFRS 15, the provision of shipping services for CFR and CIF contracts should be considered as a separate performance obligation in which a proportion of the transaction price would be allocated and recognized over time as the shipping services are provided. The impact on the timing of revenue recognition of the proportion that would have been allocated to the shipping service to the Company s income statement for the year ended December 31, 2018 is deemed not significant. Therefore, such revenue has not been presented separately in these financial statements.

• Provisionally priced commodities sales - Under IFRS 9 and 15, the treatment of the provisional pricing mechanisms embedded within the provisionally priced commodities sales remains unmodified. Therefore, these revenues are recognized based on the estimated fair value of the total consideration receivable, and the provisionally priced sales mechanism embedded within these sale arrangements has the character of a derivative. The fair value of the sales price adjustment is recognized as operational revenue in the income statement.

Overall, there was no material impact on the Company s financial statement from the IFRS 15 adoption for the year ended December 31, 2018.

e) Accounting standards issued but not yet effective

• **IFRS 16 Lease** IFRS 16 was issued in January 2016. It will result in vast majority of leases being recognized in the balance sheet by lessees, as the distinction between operating and finance leases is removed. Under the new standard, an asset (the right to use the leased item) and a financial liability to pay rentals are recognized. There are recognition exemptions for short-term leases and leases of low-value items.

The Company will apply the standard from its mandatory adoption date of January 1, 2019. Vale will apply the simplified transition approach and will not restate comparative amounts for the year prior to first adoption. Right-of-use assets will be measured at the amount of the lease liability on adoption.

As at December 31, 2018, the Company has non-cancellable operating lease commitments in the nominal amount of R$9,676 (note 32). The Company has set up a project team which has reviewed these leasing commitments over the last year in light of the new lease accounting rules in IFRS 16. Of these commitments, the Company expects to recognize right-of-use assets and lease liabilities an amount ranging from R$6.8 billion to R$7.9 billion at present value on January 1, 2019, an amount ranging from R$900 to R$1 billion on current liabilities and R$5.9 billion to R$6.9 billion on non-current liabilities.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

The actual impacts of adopting the standard may be subject to further changes because the Company has not finalized the testing, assessment of controls over its new IT systems and the new accounting policies are subject to change until the Company presents its first financial statements from the date of initial application.

The Company has not early adopted any standards and interpretations that have been issued or amended but are not yet effective for the year ended December 31, 2018. Therefore, there are no other standards that are not yet effective and that would be expected to have a material impact on the entity in the current or future reporting periods.

f) 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 the estimates.

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

Note	Significant estimates and judgments
7	Deferred revenue
8	Deferred income taxes
16	Consolidation
19	Mineral reserves and mines useful life
20	Impairment of non-current assets
22	Liabilities related to associates and joint ventures
24	Fair values estimate
27	Asset retirement obligations
28	Litigation
29	Employee post-retirement obligations

19

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

3. Brumadinho s dam failure

On January 25, 2019 (subsequent event), a breach has been experienced in the Dam I of the Córrego do Feijão mine, which belongs to the Paraopebas Complex in the Southern System, located in Brumadinho, Minas Gerais, Brasil (Brumadinho dam). This dam was inactive since 2016 (without additional tailings disposal) and there was no other operational activity in this structure.

Due to the dam failure, 306 people lost their lives or are missing and ecosystems were affected. Around 11.7 million metric tons of iron ore waste were contained in the Brumadinho dam. It is not yet known the exact volume of iron ore waste that was released due to the dam failure. The tailings contained in the Dam I have caused an impact of around 270 km in extension, destroying some of Vale s facilities, affecting local communities and disturbing the environment. The Paraopeba river and its ecosystems have also been impacted by the event.

The Company has not been sparing efforts to support the victims and to mitigate and recover the social and environmental damages resulting from the breach of the dam. Vale has provided support in multiple ways, aiming to ensure the humanitarian assistance to those affected by the dam breach.

To determine the causes for the event, Vale has engaged a panel of independent experts. Furthermore, the Company established three Extraordinary Independent Consulting Committees to support the Board of Directors, which are composed by independent members that are unrelated to the management or to the Company s operations to ensure that the initiatives by the committees be unbiased. Following are the committees:

(i) The Extraordinary Independent Consulting Committee for Investigation (CIAEA), dedicated to investigating the causes and responsibilities for the Brumadinho dam breach;

(ii) The Extraordinary Independent Consulting Committee for Support and Recovery (CIAEAR), dedicated to follow-up on the measures taken to support the victims and the recovery of the areas affected by the breach of the Brumadinho dam, assuring that all necessary resources will be applied; and

(iii) The Extraordinary Independent Consulting Committee for Dam Safety (CIAESB), which will provide support to the Board of Directors in questions related to the diagnosis of safety conditions, management and risk mitigation related to Vale s tailings dams, also providing recommendations of actions to strengthen safety conditions of those dams.

In addition, Vale has determined the suspension (i) of the variable remuneration of its executives; (ii) the Shareholder s Remuneration Policy and (iii) any other resolution related to shares buyback. The Company paid the shareholders in anticipation of the remuneration for the year, the amount of R$7,694 in September 2018, approved by the Board of Directors on July 25, 2018. This payment was higher than the minimum mandatory remuneration for the year ended December 31, 2018 and consequently no additional dividends to shareholders is required (note 30).

a) Financial impacts arising from the dam failure

The Company has concluded for the purpose of these financial statements that the dam breach and the following events are not a condition that existed at the end of the reporting period, and therefore does not require adjustments in the book values recognized in the financial statements prepared for the year ended December 31, 2018. Therefore, all accounting impacts will be recorded in 2019.

At the current stage of the investigations, assessments of the causes and possible third parties lawsuits, it is not possible to have a reliable measure of all cost that the Company may incur for the purpose of disclosure in the financial statements. The amounts that are being disclosed took into consideration the best estimates by the Company´s management.

i) Operation stoppages and de-characterization of the upstream dams

On January 29, 2019 the Company has informed the market and Brazilian authorities its decision to speed up the plan to de-characterize all of its tailings dams built by the upstream method (same method as Brumadinho dam), located in Brazil. The de-characterizing means that the structure will be dismantled and will no longer have its original operational characteristics.

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

The Company is developing specific studies for the de-characterization of these dams which will be submitted for approval by the relevant authorities when concluded, in accordance with regulations and legal requirements. The estimate on January 29, 2019, based on a preliminary assessment, resulted in a total amount of R$5 billion assuming the removal and reprocessing of all tailings contained in the upstream dams, followed by the fully recovery of the sites in the de-characterization method.

Before the event, the decommissioning plans of these dams were based on a method which aimed to ensure the physical and chemical stability of the structures, not necessarily, in all cases, removing and reprocessing the tailings contained in the dams. Since the event, the Company has been working on an individual detailed engineering plans to each of these dams to allow the total de-characterization of the structures. The Company is still developing the revised estimate for the costs to de-characterize the upstream dams and, therefore, the additional amount to the provision that will be recognized and disclosed in 2019 could not be reliably estimated.

In order to carry out safely the de-characterization of the dams, the Company has temporarily stopped the production of the units where the upstream dams are located, as already disclosed to the market. The stoppage results in a reduction in production of approximately 40 million tons of iron ore on annual basis.

In addition, the Company has other operations that are temporarily suspended due to judicial decisions or technical analysis performed by the Company on the dams, which represents a potential reduction in sales of 52.8 million tons of iron ore. The Company is working on legal and technical measures to resume these operations.

For reference, the Company sold 365 million tons of iron ore and pellets in 2018.

Due to the dam failure and review undertaken on the safety requirements for other dams in the Minas Gerais region, when necessary people were placed in temporary accommodation.

ii) Assets write-offs

Following the event and the decision to speed up the de-characterization of the upstream dams, the Company will write-off assets of the Córrego do Feijão mine and those related to the upstream dams in Brazil, resulting in a loss of R$480 in 2019, which will impact the Company s balance sheet and income statement.

iii) Framework Agreements

The Company has been working together with the authorities and society to remediate the environmental and social impacts of the event. As a result, the Company has started negotiations and entered into agreements with the relevant authorities and affected people.

Public Ministry of Labor

On February 15, 2019, Vale entered into a preliminary agreement with the Public Ministry of Labor to indemnify the direct and third-party employees of the Córrego do Feijão mine who were affected by the termination of this operation. Under the terms of the agreement, Vale will maintain the jobs of its direct employees until December 31, 2019 and will either assist terminated third party employees with a replacement or pay their salaries until December 31, 2019.

The Company will also keep paying wages regularly to the missing people until the authorities have considered them as fatal victims of the event and will pay to the families of the fatal victims an amount equivalent to two thirds of their wages until December 31, 2019 or until Vale reaches the final agreement with the Public Ministry of Labor.

Under the terms proposed by Vale and considering the uncertainties related to the necessary procedures to estimate the amount to be spent, including the number of individuals entitled to indemnification, the Company has estimated that this agreement will result in a provision of approximately R$850 in 2019.

Moreover, the Company will provide a lifelong medical insurance benefit to the widows and widowers and a similar benefit to the dependents of the victims until they are 22 years old. Due to the preliminary stage of this agreement and considering the complexity of an actuarial estimate, it is not possible yet to determine a range of outcomes or reliable estimates and, therefore, the amount of the provision related to this obligation could not be estimated. The Company expects to have this information during the course of 2019.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Brazilian Federal Government, State of Minas Gerais, Public Prosecutors and Public Defendants

On a judicial hearing that took place on February 20, 2019, in the scope of the public civil action n ° 5010709-36.2019.8.13.0024, in process of the 6th Public Treasury Lower Court of Belo Horizonte, Vale entered into a preliminary agreement with the State of Minas Gerais, Federal Government and representatives of Public Authorities in which the Company commits to make emergency indemnification payments to the residents of Brumadinho and the communities that are located up to one kilometer from the Paraopeba river bed, from Brumadinho to the city of Pompéu, subject to registration.

Due to this agreement, the Company will anticipate indemnification to each family member through monthly payments during a 12-month period, which changes based, among other factors, on the age of the beneficiary. The Company has initially estimated a provision ranging from R$1 billion to R$2 billion related to these payments, depending on the number of beneficiaries that will be registered.

The agreement also includes the following measures: (i) independent technical assistance to support on the individual indemnities of those affected, if requested; and (ii) reimbursement or direct funding of the extraordinary expenses of the State of Minas Gerais and its governmental bodies due to the dam failure, including transportation, accommodation and food expenses of the employees involved in the rescue and other emergency actions. The respective amounts are still being estimated by the State of Minas Gerais and will be presented in Court.

iv) Donations and other incurred expenses

Donations

Vale has offered donations of R$100 thousand to each of the families with missing members or affected by fatalities, R$50 thousand to families that resided in the Self-Saving Zone (ZAS) near to Brumadinho dam, R$15 thousand to business owners of the region and R$5 thousand for each family that resided in the ZAS of Sul Superior dam, which belongs to the Gongo Soco mine, in Barão de Cocais. The estimated amount spent to date is around R$62. These humanitarian donations will not be subject to any compensation with eventual indemnification obligations that the Company may have with its beneficiaries.

Vale also entered into an agreement with the Brumadinho city in which the Company will donate to the city an amount of approximately R$80 over the next 2 years.

Environment and fauna

The Company is building a retention dike for the tailings on the affected areas. The Company has also installed anti-turbidity barriers for sediment retention alongside the Paraopeba River. In addition, Vale has mobilized cleaning, de-sanding and dredging the Paraopeba river channel.

Daily collection points of water and barriers for sediment retention were installed alongside the Paraopeba River, Três Maias reservoir and São Francisco river.

Vale also has set up an exclusive structure for treatment of the rescued animals, enabling emergency care and recovery before the animals are authorized, after veterinarian assessment, to be returned to their tutors.

Furthermore, the Company has agreed to pay the administrative fines imposed by the State Secretary for Environment and Sustainable Development SEMAD MG, in the total approximated amount of R$99.

The Company has incurred the following expenses up to the present moment:

	2019
Incurred expenses	
Administrative sanctions	99
Donations to the affected people and to the city	62
Drilling and infrastructure	20
Environmental recovery	17
Medical aid and other materials	9
Fuel and transportation	8
Others (*)	85
	300

(*) Includes expenses with communication, accommodation, humanitarian assistance, equipment, legal services, water, food aid, taxes, among others.

Off the events identified at this stage, a significant portion has not been disbursed or measured. The total costs incurred with Vale s employees dedicated to providing support with matters related to the event (including wages), equipment and materials were not measured yet.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

b) Contingencies and other legal matters

Vale is subject to significant contingencies due to the Brumadinho dam failure. Vale has already been named on several judicial and administrative proceedings brought by authorities and affected people and is currently under investigations. New contingencies are expected to come in the future. Vale is still evaluating these contingencies and will recognize a provision based on the stage of these claims. Due to the preliminary stage of the investigations and claims, it is not possible to determine a range of reliable results or estimates of potential exposure related to dam breach at this point in time.

Lawsuits

On January 27, 2019, following the injunctions granted upon the requests of the Public Prosecutors of the State of Minas Gerais and the State of Minas Gerais, the Company had restricted R$11 billion on its bank accounts to take the necessary measures to reassure the stability of the other dams of the Córrego do Feijão Mine Complex, provide accommodation and assistance to the affected people, remediate environmental impacts, among other obligations.

On January 31, 2019, the Public Ministry of Labor filed a Public Civil Action and a couple of preliminary injunctions were granted determining the freezing of R$1.6 billion on the Company s bank accounts to secure the indemnification of direct and third-party employees that worked in the Córrego de Feijão mine at the time of the Brumadinho dam breach.

On March 18, 2019 the Public Prosecutor of the State of Minas Gerais filed a Public Civil Action and a preliminary injunction was granted to freeze R$1 billion of the Company s assets, aiming to grant funds that could be required to indemnify for losses that may arise from the evacuation of the community of Sebastião de Águas Claras Macacos community.

On March 25, 2019, the Public Prosecutor of the State of Minas Gerais filed a Public Civil Action and a preliminary injunction was granted to freeze R$2.95 billion of the Company s assets, to grant funds that might be required to indemnify for losses that may arise from evacuation of the communities in Gongo Soco, Barão de Cocais.

In total, approximately R$16.9 billion of the Company s assets were blocked, of which approximately R$468 were freeze on the Company s bank accounts, R$12.6 billion were converted into judicial deposits and R$3.75 billion was guaranteed using 75,312,728 treasury shares out of the 158,216,372 treasury shares held by Vale as at December 31, 2018.

Other collective and individual claims related to the Brumadinho dam breach were filed. Some collective claims were extinguished by the applicable court.

Administrative sanctions

In addition, the Company was notified of the imposition of administrative fines by Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA), in the amount of R$250 and a daily fine of R$100 thousand, drawn up on February 7, 2019, which Vale has presented defenses against all of them. In addition, the Brumadinho Municipal Department of the Environment has also imposed fines totaling approximately R$108, which the Company has also presented a defense.

U.S. Securities class action suits

Vale and certain of its current officers have been named as defendants in securities class action complaints in Federal Courts in New York brought by holders of Vale s securities under U.S. federal securities laws. The complaints allege that Vale made false and misleading statements or omitted to make disclosures concerning the risks and potential damage of a breach of the dam in the Córrego de Feijão mine. The plaintiffs have not specified an amount of alleged damages in these complaints. Vale intends to defend these actions and mount a full defense against these claims. As a consequence of the preliminary nature of these proceedings, it is not possible to determine a range of outcomes or reliable estimates of the potential exposure at this time, and the amount of provision that will be recognized in 2019 could not be estimated.

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

4. Information by business segment and by geographic area

The Company operated the following reportable segments during this year: Ferrous Minerals, Coal, Base Metals and Fertilizers (presented as discontinued operations). 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 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, ferroalloys, other ferrous products and its logistic services.

Coal comprise of the production and extraction of metallurgical and thermal coal 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 their by-products (gold and silver).

Fertilizers (Discontinued operations) - include the production of potash, phosphate, nitrogen and other fertilizer products (note 14).

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) special events (note 4b).

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

In 2018, the Company has allocated general and corporate expenses to Others as these are not directly related to the performance of each business segment. The comparative periods were restated to reflect this change in the allocation criteria.

	Consolidated Year ended December 31, 2018						
	Net operating revenue	**Cost of goods sold and services rendered**	**Selling, administrative and other operating expenses**	**Research and evaluation**	**Pre operating and operational stoppage**	**Dividends received and interest from associates and joint ventures**	**Adjusted 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**
Coal	**6,025**	**(5,811)**	**(33)**	**(75)**		**511**	**617**
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**
Others	1,089	(961)	(2,738)	(584)	(76)	204	(3,066)
Total of continuing operations	**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**

24

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Consolidated Year ended December 31, 2017						
	Net operating revenue	Cost of goods sold and services rendered	Selling, administrative and other operating expenses	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted LAJIDA (EBITDA)
Ferrous minerals							
Iron ore	59,206	(25,438)	32	(281)	(576)	100	33,043
Iron ore Pellets	18,043	(9,191)	(29)	(62)	(23)	263	9,001
Ferroalloys and manganese	1,501	(890)	(26)		(12)		573
Other ferrous products and services	1,541	(978)	39	(6)	(2)	63	657
	80,291	**(36,497)**	**16**	**(349)**	**(613)**	**426**	**43,274**
Coal	**5,003**	**(4,326)**	**(39)**	**(45)**	**(14)**	**574**	**1,153**
Base metals							
Nickel and other products	14,914	(10,985)	(149)	(155)	(238)		3,387
Copper	7,052	(3,126)	(49)	(43)			3,834
	21,966	**(14,111)**	**(198)**	**(198)**	**(238)**		**7,221**
Others	**1,272**	**(1,197)**	**(2,522)**	**(494)**	**(28)**	**313**	**(2,656)**
Total of continuing operations	**108,532**	**(56,131)**	**(2,743)**	**(1,086)**	**(893)**	**1,313**	**48,992**
Discontinued operations (Fertilizers)	**5,572**	**(5,124)**	**(327)**	**(39)**	**(80)**	**10**	12
Total	**114,104**	**(61,255)**	**(3,070)**	**(1,125)**	**(973)**	**1,323**	**49,004**

	Consolidated Year ended December 31, 2016						
	Net operating revenue	Cost of goods sold and services rendered	Selling, administrative and other operating expenses	Research and evaluation	Pre operating and operational stoppage	Dividends received and interest from associates and joint ventures	Adjusted LAJIDA (EBITDA)
Ferrous minerals							
Iron ore	54,187	(22,817)	(894)	(308)	(521)	35	29,682
Iron ore Pellets	13,198	(6,932)	(121)	(45)	(77)	359	6,382
	1,031	(793)		(1)	(39)		198

Ferroalloys and manganese							
Other ferrous products and services	1,513	(933)	(13)	(5)	(12)		550
	69,929	**(31,475)**	**(1,028)**	**(359)**	**(649)**	**394**	**36,812**
Coal	**2,882**	**(3,090)**	**248**	**(50)**	**(137)**		**(147)**
Base metals							
Nickel and other products	15,504	(11,145)	2	(268)	(399)	13	3,707
Copper	5,770	(3,198)	(51)	(17)			2,504
Other base metals products			480				480
	21,274	**(14,343)**	**431**	**(285)**	**(399)**	**13**	**6,691**
Others	**548**	**(889)**	**(1,963)**	**(404)**	**(4)**	**262**	(2,450)
Total of continuing operations	**94,633**	**(49,797)**	**(2,312)**	**(1,098)**	**(1,189)**	**669**	**40,906**
Discontinued operations (Fertilizers)	**6,470**	**(5,315)**	**(298)**	**(75)**	**(58)**	**12**	**736**
Total	**101,103**	**(55,112)**	**(2,610)**	**(1,173)**	**(1,247)**	**681**	**41,642**

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

From continuing operations

	Consolidated Year ended December 31		
	2018	**2017**	**2016**
Net income from continuing operations	**26,084**	**20,278**	**17,455**
Depreciation, depletion and amortization	12,240	11,842	12,107
Income taxes	(966)	4,607	9,567
Financial results, net	18,058	9,650	(6,302)
LAJIDA (EBITDA)	**55,416**	**46,377**	**32,827**
Items to reconciled LAJIDA (EBITDA) adjusted			
Equity results and other results in associates and joint ventures, net of dividends received	2,126	1,590	3,911
Special events (note 4b)	3,523	1,025	4,168
Adjusted LAJIDA (EBITDA) from continuing operations	**61,065**	**48,992**	**40,906**

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

From discontinued operations

	Consolidated Year ended December 31		
	2018	**2017**	**2016**
Loss from discontinued operations	**(310)**	**(2,608)**	**(4,159)**
Depreciation, depletion and amortization		4	1,197
Income taxes	(134)	(324)	(2,134)
Financial results, net	18	89	(69)
LAJIDA (EBITDA)	**(426)**	**(2,839)**	**(5,165)**
Items to reconciled LAJIDA (EBITDA) adjusted			
Equity results in associates and joint ventures, net of dividends received		18	2
Impairment of non-current assets	415	2,833	5,899
Adjusted LAJIDA (EBITDA) from discontinued operations	**(11)**	**12**	**736**

b) Special events occurred during the year

Special events are gains or losses recognized in the Company s operating results that are not related to the performance of the business segments. The Company excludes special events from adjusted LAJIDA (EBITDA) to keep the segment performance analysis comparable with prior periods.

The special events identified by the Company are as follows:

	Consolidated Year ended December 31		
	2018	**2017**	**2016**
Result in disposal of assets (note 19)	(1,283)	(1,580)	(228)
Nacala Logistic Corridor (note 16)		1,438	
Impairment and onerous contracts (note 20)	(2,240)	(883)	(3,940)
Total	**(3,523)**	**(1,025)**	**(4,168)**

c) **Assets by segment**

	Consolidated					
	December 31, 2018			December 31, 2017		
	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangible (i)	Product inventory	Investments in associates and joint ventures	Property, plant and equipment and intangible (i)
Ferrous minerals	8,562	7,030	121,572	5,859	6,358	119,429
Coal	461	1,228	6,157	271	1,048	5,686
Base metals	4,443	54	82,515	3,336	43	78,080
Others	45	4,183	8,087	20	4,353	6,434
Total	**13,511**	**12,495**	**218,331**	**9,486**	**11,802**	**209,629**

	Consolidated Year ended December 31								
	2018			2017			2016		
	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	5,793	2,925	6,109	3,821	4,732	5,463	3,081	8,303	5,299
Coal	492	82	921	235	141	934	502	1,634	632
Base metals	4,442	119	4,934	3,069	162	5,076	3,659	14	5,717
Others	20	26	276	11	65	369	8	142	459
Total	**10,747**	**3,152**	**12,240**	**7,136**	**5,100**	**11,842**	**7,250**	**10,093**	**12,107**

(i) Goodwill is allocated mainly to ferrous minerals and base metals segments in the amount of R$7,133 and R$7,022 in December 31, 2018 and R$7,133 and R$6,460 in December 31, 2017, respectively.

(ii) Cash outflows.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

	Consolidated							
	December 31, 2018				December 31, 2017			
	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	10,089	22,764	113,252	146,105	9,900	20,615	113,162	143,677
Canada		7,578	38,381	45,959		7,005	36,277	43,282
Americas, except Brazil and Canada	957			957	663			663
Europe			1,419	1,419			1,303	1,303
Indonesia		3	10,757	10,760			9,220	9,220
Asia, except Indonesia	1,449		3,972	5,421	1,239		3,638	4,877
Australia							149	149
New Caledonia			10,833	10,833			9,809	9,809
Mozambique		505	5,653	6,158		472	5,067	5,539
Oman			3,211	3,211		2	2,873	2,875
Other regions			3	3			37	37
Total	**12,495**	**30,850**	**187,481**	**230,826**	**11,802**	**28,094**	**181,535**	**221,431**

e) Net operating revenue by geographic area

	Consolidated				
	Year ended December 31, 2018				
	Ferrous minerals	Coal	Base metals	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	1,603	6,559		16,316
Middle East/Africa/Oceania	9,450	548	91		10,089
Japan	7,597	608	1,861		10,066
China	53,120		3,163		56,283
Asia, except Japan and China	6,648	2,817	4,011		13,476
Brazil	9,365	449	1,001	1,045	11,860

Net operating revenue	**102,842**	**6,025**	**24,527**	**1,089**	**134,483**

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

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Accounting policy

Vale recognizes revenue when the control of a good or service transfers to a customer of an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Net revenue excludes any applicable sales taxes.

Depending on the contract, sales revenue can 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. Service revenues are recognized in the amount by which the services are rendered and accepted by the customer.

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 and were not changed from previous years. 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.

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

As of December 31, 2018, the Company had 27 million tons (2017: 33 million tons) provisionally priced based on iron ore forward prices and 78 thousand tons (2017: 106 thousand tons) provisionally priced based on copper forward prices. The final price of these sales will be determined during the first quarter of 2019. A 10% change in the price of iron ore realized on the provisionally priced sales, with all other factors held constant, would increase or reduce net income by R$719. A 10% change in the price of copper realized on the provisionally priced sales, with all other factors held constant, would increase or reduce net income by R$218.

5. Costs and expenses by nature

a) Cost of goods sold and services rendered

	Consolidated			Parent company	
	Year ended December 31				
	2018	2017	2016	2018	2017
Personnel	8,346	7,332	7,222	4,615	3,986
Materials and services	14,554	12,183	10,808	6,248	5,504
Fuel oil and gas	5,646	4,197	4,280	3,703	2,869
Maintenance	10,253	9,899	9,487	7,250	6,926
Energy	3,301	3,078	2,406	1,688	1,463
Acquisition of products	1,883	1,728	1,762	760	652
Depreciation and depletion	11,719	11,126	11,346	5,693	5,078
Freight	15,972	10,717	8,641	158	106
Others	9,527	6,997	5,191	8,936	6,743
Total	**81,201**	**67,257**	**61,143**	**39,051**	**33,327**
Cost of goods sold	79,074	65,300	59,409	37,601	31,991
Cost of services rendered	2,127	1,957	1,734	1,450	1,336
Total	**81,201**	**67,257**	**61,143**	**39,051**	**33,327**

b) Selling and administrative expenses

	Consolidated			Parent company	
	Year ended December 31				
	2018	2017	2016	2018	2017
Personnel	771	747	727	490	514
Services	338	259	248	180	152
Depreciation and amortization	225	292	414	115	185
Others	583	399	366	174	108
Total	**1,917**	**1,697**	**1,755**	**959**	**959**

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

c) Other operating expenses, net

	Consolidated			Parent company	
			Year ended December 31		
	2018	**2017**	**2016**	**2018**	**2017**
Provision for litigation	681	540	487	464	423
Profit sharing program	674	476	252	435	307
Others	258	322	198	264	163
Total	**1,613**	**1,338**	**937**	**1,163**	**893**

6. Financial result

	Consolidated			Parent company	
			Year ended December 31		
	2018	**2017**	**2016**	**2018**	**2017**
Financial income					
Short-term investments	661	560	336	149	208
Others	888	972	270	133	156
	1,549	**1,532**	**606**	**282**	**364**
Financial expenses					
Loans and borrowings gross interest	(4,301)	(5,418)	(6,152)	(4,953)	(5,606)
Capitalized loans and borrowing costs	704	1,179	2,291	700	1,176
Participative stockholders debentures	(1,871)	(1,982)	(1,456)	(1,871)	(1,982)
Interest on REFIS	(737)	(1,262)	(1,787)	(698)	(1,236)
Others	(2,189)	(3,029)	(2,191)	(851)	(1,855)
	(8,394)	**(10,512)**	**(9,295)**	**(7,673)**	**(9,503)**
Other financial items					
Net foreign exchange gains (losses) on loans and borrowings	(9,721)	(802)	17,734	(9,104)	(678)
Derivative financial instruments	(1,006)	1,460	4,172	(589)	1,285
Other net foreign exchange gains (losses)	1,484	(698)	(6,388)	1,177	(191)
Net indexation losses	(1,970)	(630)	(527)	(1,543)	(638)
	(11,213)	**(670)**	**14,991**	**(10,059)**	**(222)**
Financial results, net	**(18,058)**	**(9,650)**	**6,302**	**(17,450)**	**(9,361)**

a) Hedge in foreign operations

As at January 1, 2017, Vale S.A., which the functional currency is Reais, designated its debts in US$ and Euro, as an instrument in a hedge of its investment in foreign operations (Vale International S.A. and Vale International Holding GmbH; hedging objects) to mitigate part of the foreign exchange risk on financial statements. Further details are disclosed in note 25.

b) Net investment in the foreign operation

From January 1, 2019 (subsequent event), the Company will consider certain long-term loans payable to Vale International S.A., for which settlement is neither planned nor likely to occur in the foreseeable future, as part of its net investment in the foreign operation. The foreign exchange differences arising on the monetary item, forming part of the net investment in the foreign operation, will be recognized in other comprehensive income and reclassified from stockholders equity to income statement on disposal or partial disposal of the net investment. Therefore, upon adoption the effect of net foreign exchange gains or losses in the income statement is expected to reduce.

Accounting policy

Transactions in foreign currencies - 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.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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 extracted as a by-product from the Voisey s Bay mine, in Canada, starting on January 1, 2021. Furthermore, the Company restarted the Voisey s Bay underground mine expansion project, which is going to increase the expected useful life of Voisey s Bay mine from 2023 to 2034. The first year of underground production is expected to be 2021, when the current operations on the open pit mine begin to ramp down.

Upon completion of the transaction, the Company received an upfront payment of R$2,603 (US$690 million) in cash, R$1,471 (US$390 million) from Wheaton and R$1,132 (US$300 million) from Cobalt 27, which has been recorded as other non-current liabilities. Vale will receive additional payments of 20%, on average, of the market reference price for cobalt, for each pound of finished cobalt delivered.

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

Gold streaming

In August 2016, the Company made an amended to 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.

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 deferred revenue (liability) related to the services for gold extraction on the portion in which Vale operates as an agent for Wheaton gold extraction.

The Company recognized R$480 in the income statement for the year ended December 31, 2016, related to the sale of mineral rights from the additional transaction in August 2016.

Critical accounting estimates and judgments

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

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

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

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

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

8. Income taxes

a) Deferred income tax assets and liabilities

	Consolidated		Parent company	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Taxes losses carryforward	**18,917**	**14,791**	**10,654**	**6,994**
Temporary differences:				
Employee post retirement obligations	2,610	2,263	822	586
Provision for litigation	1,586	1,510	1,524	1,435
Timing differences arising on assets	4,857	4,195	3,671	3,319
Fair value of financial instruments	2,084	1,816	2,084	1,816
Allocated goodwill	(9,022)	(8,048)		
Goodwill amortization	(1,527)	(948)	(1,527)	(948)
Others	1,326	693	308	998
	1,914	**1,481**	**6,882**	**7,206**
Total	**20,831**	**16,272**	**17,536**	**14,200**
Assets	26,767	21,959	17,536	14,200
Liabilities	(5,936)	(5,687)		
	20,831	**16,272**	**17,536**	**14,200**

Changes in deferred tax are as follows:

	Consolidated			Parent company
	Assets	Liabilities	Deferred taxes, net	Deferred taxes, net
Balance at December 31, 2016	**23,931**	**5,540**	**18,391**	**15,299**
Utilization of taxes losses carryforward	(6,615)		(6,615)	(3,316)
Timing differences arising on assets	335		335	421
Fair value of financial instruments	1,222		1,222	(105)
Allocated goodwill		(369)	369	
Others	2,746		2,746	2,043
Effect in income statement	**(2,312)**	**(369)**	**(1,943)**	**(957)**
Transfers between asset and liabilities	131	131		
Translation adjustment	118	350	(232)	

Other comprehensive income	(233)	35	(268)	224
Effect of discontinued operations				
Effect in income statement	324		324	(366)
Balance at December 31, 2017	**21,959**	**5,687**	**16,272**	**14,200**
Taxes losses carryforward	2,822		2,822	3,660
Timing differences arising on assets	598		598	352
Fair value of financial instruments	538		538	538
Allocated goodwill		(159)	159	
Others	(345)		(345)	(1,038)
Effect in income statement	**3,613**	**(159)**	**3,772**	**3,512**
Transfers between asset and liabilities	(253)	(253)		
Translation adjustment	1,011	579	432	
Other comprehensive income	429	82	347	(191)
Effect of discontinued operations				
Effect in income statement	48		48	15
Transfer to net assets held for sale	(40)		(40)	
Balance at December 31, 2018	**26,767**	**5,936**	**20,831**	**17,536**

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 or by the Parent Company.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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		
	2018	2017	2016	2018	2017
Income before income taxes	**25,118**	**24,885**	**27,022**	**23,627**	**22,328**
Income taxes at statutory rates - 34%	**(8,540)**	**(8,461)**	**(9,187)**	**(8,033)**	**(7,592)**
Adjustments that affect the basis of taxes:					
Income tax benefit from interest on stockholders equity	3,174	2,329	291	3,174	2,329
Tax incentives	2,112	1,175	1,130	1,529	750
Equity results	389	99	378	1,811	1,903
Additions (reversals) of tax loss carryforward (i)	5,814	315	(952)	4,189	(962)
Unrecognized tax losses of the year	(1,711)	(1,389)	(2,465)		
Nondeductible effect of impairment	(92)	(138)	(325)		
Others	(180)	1,463	1,563	(330)	1,457
Income taxes	**966**	**(4,607)**	**(9,567)**	**2,340**	**(2,115)**

(i) In 2018, the Company recognized tax loss carryforward from tax losses of subsidiary abroad.

c) Tax incentives

In Brazil, Vale has tax incentives to partially reduce the income tax generated by the operations conducted in the North and Northeast regions that includes iron ore, manganese, copper and nickel. The incentive is calculated based on the taxable income of the incentive activity (tax operating income) and takes into account the allocation of tax operating income into different incentives applicable to different tranches of production during the periods specified for each product, usually 10 years. Most of our 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, the amount equivalent to 30% 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, Superintendência de Desenvolvimento da Amazônia (SUDAM) and/or the Superintendência de Desenvolvimento do Nordeste (SUDENE). The reinvestment subsidy is accounted in retained earnings reserve account, which restricts the distribution as dividends to stockholders. This tax incentive will expire in 2023.

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

d) Income taxes - Settlement program (REFIS)

The balance mainly relates to REFIS to settle most of the claims related to the collection of income tax and social contribution on equity gains of foreign subsidiaries and affiliates from 2003 to 2012. As December 31, 2018, the balance of R$16,852 (R$1,673 as current and R$15,179 as non-current) is due in 118 remaining monthly installments, bearing interest at the SELIC rate (Special System for Settlement and Custody), while at December 31, 2017, the balance was R$17,780 (R$1,604 as current and R$16,176 as non-current).

As at December 31, 2018, the SELIC rate was 6.50% per annum (7.00% per annum at December 31, 2017).

Accounting policy

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

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

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

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Critical accounting estimates and judgments

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

9. Basic and diluted earnings per share

The basic and diluted earnings per share are presented below:

	Year ended December 31		
	2018	2017	2016
Net income (loss) attributable to Vale s stockholders:			
Net income from continuing operations	25,967	20,213	17,461
Loss from discontinued operations	(310)	(2,586)	(4,150)
Net income	**25,657**	**17,627**	**13,311**
Thousands of shares			
Weighted average number of shares outstanding - common shares	5,182,445	5,197,432	5,197,432
Basic and diluted earnings per share from continuing operations:			
Common share (R$)	5.01	3.89	3.36
Basic and diluted loss per share from discontinued operations:			
Common share (R$)	(0.06)	(0.50)	(0.80)
Basic and diluted earnings per share:			
Common share (R$)	4.95	3.39	2.56

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

10. Accounts receivable

	Consolidated		Parent company	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Accounts receivable	10,502	8,802	17,398	9,627
Expected credit loss	(241)	(200)	(65)	(67)
	10,261	**8,602**	**17,333**	**9,560**
Revenue related to the steel sector - %	**85.50%**	**82.90%**		

	Consolidated			Parent company	
	Year ended December 31				
	2018	2017	2016	2018	2017
Impairment of accounts receivable recorded in the income statement	(26)	(14)	(16)	(5)	4

There is no customer that individually represents over 10% of 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 consists of financial assets initially recognized at fair value and subsequently measured at amortized cost, except for component of provisionally priced commodities sales that are subsequently measured at fair value through profit or loss (FVTPL).

The portion of accounts receivables measured at amortized cost is subsequently measured using the effective interest (EIR) method and it is subject to impairment. The Company has established a provision matrix that is based on its historical credit loss experience, adjusted for forward-looking factors specific to the economic environment and by any financial guarantees related to these accounts receivables.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Commercial credit risk management - For the commercial credit exposure, which arises from sales to final customers, the risk management area, in accordance with the current delegation level, approves or 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.

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

11. Inventories

	Consolidated		Parent company	
	December 31, 2018	**December 31, 2017**	**December 31, 2018**	**December 31, 2017**
Finished products	10,847	7,324	3,169	2,796
Work in progress	2,664	2,162	183	273
Consumable inventory	3,705	3,501	1,423	1,532
Total	**17,216**	**12,987**	**4,775**	**4,601**

	Consolidated			Parent company	
	Year ended December 31				
	2018	**2017**	**2016**	**2018**	**2017**
Reversal (provision) for net realizable value	14	(284)	(649)	77	(170)

Finished and work in progress product inventory by segments is presented in note 4(c).

Accounting policy

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

12. Recoverable taxes

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

	Consolidated		Parent company	
	December 31, 2018	**December 31, 2017**	**December 31, 2018**	**December 31, 2017**
Value-added tax	3,151	2,934	1,425	1,561
Brazilian federal contributions	3,134	2,909	2,839	2,517
Others	50	142	41	75
Total	**6,335**	**5,985**	**4,305**	**4,153**
Current	3,422	3,876	2,024	2,091
Non-current	2,913	2,109	2,281	2,062
Total	**6,335**	**5,985**	**4,305**	**4,153**

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

13. Other financial assets and liabilities

	Consolidated			
	Current		Non-Current	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Other financial assets				
Financial investments	125	61		
Loans			589	498
Derivative financial instruments (note 25)	149	351	1,520	1,497
Investments in equity securities (note 14)			3,823	
Related parties - Loans (note 31)	1,409	6,277	6,248	8,695
	1,683	**6,689**	**12,180**	**10,690**
Other financial liabilities				
Derivative financial instruments (note 25)	1,821	344	1,335	2,269
Related parties (note 31)	4,392	2,916	3,722	3,226
Participative stockholders debentures			5,454	4,080
	6,213	**3,260**	**10,511**	**9,575**

	Parent company			
	Current		Non-Current	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Other financial assets				
Financial investments	4	4		
Loans			18	18
Derivative financial instruments (note 25)	116	199	1,471	1,268
Investments in equity securities			3,334	
Related parties	240	206	453	579
	360	**409**	**5,276**	**1,865**
Other financial liabilities				
Derivative financial instruments (note 25)	1,506	311	1,245	2,113
Related parties	3,577	4,102	65,041	48,762
Participative stockholders debentures			5,454	4,080
	5,083	**4,413**	**71,740**	**54,955**

Participative stockholders debentures

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

A total of 388,559,056 debentures were issued with a par value of R$0.01 (one cent of Brazilian Real) and are inflation-indexed to the General Market Price Index (IGP-M), as set forth in the Issue Deed. The Company paid as remuneration the amount of R$529 and R$467, respectively, for the year ended December 31, 2018 and 2017.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

	Consolidated December 31, 2017 Fertilizers
Assets	
Accounts receivable	297
Inventories	1,522
Other current assets	363
Investments in associates and joint ventures	274
Property, plant and equipment and Intangible	7,110
Other non-current assets	2,299
Total assets	**11,865**
Liabilities	
Suppliers and contractors	1,070
Other current liabilities	711
Other non-current liabilities	2,118
Total liabilities	**3,899**
Net non-current assets held for sale	**7,966**

a) Fertilizers (discontinued operations)

In January 2018, the Company and The Mosaic Company (Mosaic) concluded the transaction entered in December 2016, to sell (i) the phosphate assets located in Brazil, except for those located in Cubatão, Brazil; (ii) the control of Compañia Minera Miski Mayo S.A.C., in Peru; (iii) the potassium assets located in Brazil; and (iv) the potash projects in Canada. The Company received R$3,495 (US$1,080 million) in cash and 34.2 million common shares, corresponding to 8.9% of Mosaic s outstanding common shares after the issuance of these shares totaling R$2,907 (US$899 million), based on the Mosaic s quotation at closing date of the transaction and a loss of R$184 was recognized in the income statement from discontinued operations.

Mosaic s shares received were accounted for as a financial investment measured at fair value through other comprehensive income. The Company recognized a gain of R$392 (R$275, net of tax) for the year ended December 31, 2018, in other comprehensive income as Fair value adjustment to investment in equity securities .

b) Cubatão (part of the fertilizer segment)

In November 2017, the Company entered into an agreement with Yara International ASA to sell its assets located in Cubatão, Brazil. In May 2018, the transaction was concluded and the Company received R$882 (US$255 million) in cash and a loss of R$231 was recognized in the income statement from discontinued operations.

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

Income statement

	Consolidated Year ended December 31		
	2018	**2017**	**2016**
Discontinued operations			
Net operating revenue	397	5,572	6,470
Cost of goods sold and services rendered	(393)	(5,124)	(6,495)
Operating expenses	(15)	(450)	(448)
Impairment of non-current assets	(415)	(2,833)	(5,899)
Operating loss	**(426)**	**(2,835)**	**(6,372)**
Financial Results, net	(18)	(89)	69
Equity results in associates and joint ventures		(8)	10
Loss before income taxes	**(444)**	**(2,932)**	**(6,293)**
Income taxes	134	324	2,134
Loss from discontinued operations	**(310)**	**(2,608)**	**(4,159)**
Loss attributable to noncontrolling interests		(22)	(9)
Loss attributable to Vale s stockholders	**(310)**	**(2,586)**	**(4,150)**

36

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Statement of cash flow

	Consolidated Year ended December 31		
	2018	**2017**	**2016**
Discontinued operations			
Cash flow from operating activities			
Loss before income taxes	(444)	(2,932)	(6,293)
Adjustments:			
Equity results in associates and joint ventures		8	(10)
Depreciation, amortization and depletion		4	1,197
Impairment of non-current assets	415	2,833	5,899
Others	18		(69)
Increase (decrease) in assets and liabilities	(110)	356	(226)
Net cash provided by (used in) operating activities	**(121)**	**269**	**498**
Cash flow from investing activities			
Additions to property, plant and equipment	(36)	(978)	(995)
Others		(1)	29
Net cash used in investing activities	**(36)**	**(979)**	**(966)**
Cash flow from financing activities			
Loans and borrowings			
Repayments		(107)	(59)
Net cash used in financing activities		**(107)**	**(59)**
Net cash used in discontinued operations	**(157)**	**(817)**	**(527)**

Accounting policy

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

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

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

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

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

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

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

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

15. Subsidiaries

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

	Location	Main activity/Business	% Ownership	% Voting capital	% Noncontrolling interest
Direct and indirect subsidiaries					
Companhia Portuária da Baía de Sepetiba	Brazil	Iron ore	100.0%	100.0%	0.0%
Mineração Corumbaense Reunida S.A.	Brazil	Iron ore and manganese	100.0%	100.0%	0.0%
Minerações Brasileiras Reunidas S.A. (MBR)	Brazil	Iron ore	62.5%	98.3%	37.5%
Salobo Metais S.A.	Brazil	Copper	100.0%	100.0%	0.0%
PT Vale Indonesia	Indonesia	Nickel	59.2%	59.2%	40.8%
Vale International Holdings GmbH	Austria	Holding and research	100.0%	100.0%	0.0%
Vale Canada Limited	Canada	Nickel	100.0%	100.0%	0.0%
Vale International S.A.	Switzerland	Trading and holding	100.0%	100.0%	0.0%
Vale Malaysia Minerals Sdn. Bhd.	Malaysia	Iron ore	100.0%	100.0%	0.0%
Vale Manganês S.A.	Brazil	Manganese and ferroalloys	100.0%	100.0%	0.0%
Vale Moçambique S.A.	Mozambique	Coal	80.7%	80.7%	19.3%
Vale Nouvelle Caledonie S.A.S.	New Caledonia	Nickel	95.0%	95.0%	5.0%
Vale Oman Distribution Center LLC	Oman	Iron ore and pelletizing	100.0%	100.0%	0.0%
Vale Oman Pelletizing Company LLC	Oman	Pelletizing	70.0%	70.0%	30.0%

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

	Location	Main activity/Business	% Ownership	% Voting capital	% Noncontrolling interest
Direct and indirect subsidiaries					
Compañia Minera Miski Mayo S.A.C.	Peru	Fertilizers	40.0%	51.0%	60.0%
Vale Fertilizantes S.A.	Brazil	Fertilizers	100.0%	100.0%	0.0%
Vale Cubatão Fertilizantes Ltda.	Brazil	Fertilizers	100.0%	100.0%	0.0%

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.

The entities over which the Company has joint control (joint ventures) or significant influence, but not control (associates) are presented in note 16. Those investments are accounted for using the equity method. For interests in joint arrangements not classified as joint ventures (joint operations), the Company recognizes its share of assets, liabilities and net income.

Unrealized gains on downstream or upstream transactions between the Company and its associates and joint ventures are eliminated 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 as described in note 17.

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 Results from operation with 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 exchange differences that were recognized in equity are recognized in the income of statement.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

16. Investments

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

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

a) Changes during the year

Changes in investments in associates and joint ventures as follows:

	Consolidated					
	2018			2017		
	Associates	Joint ventures	Total	Associates	Joint ventures	Total
Balance at January 1st,	**4,774**	**7,028**	**11,802**	**4,683**	**7,363**	**12,046**
Additions (i)		79	79	1	291	292
Translation adjustment	147	119	266	66	(14)	52
Equity results in income statement	169	976	1,145	184	118	302
Equity results in statement of comprehensive income					(466)	(466)

Dividends declared	(2)	(1,055)	(1,057)	(181)	(725)	(906)
Transfer from non-current assets held for sale (ii)	280		280			
Others	35	(55)	(20)	21	461	482
Balance at December 31,	**5,403**	**7,092**	**12,495**	**4,774**	**7,028**	**11,802**

(i) Refers to the Coal segment and others in the amounts of R$35 and R$44, respectively, on December 31, 2018 and R$237 and R$55, respectively, on December 31, 2017.

(ii) Refers to 18% interest held by Vale Fertilizantes at Ultrafertil which was transferred to Vale as part of the settlement in January 2018 (note 14).

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

b) Acquisitions and divestitures

2018

Ferrous Resources Limited In December 2018, the Company entered into an agreement to purchase the control of Ferrous Resources Limited, a company that currently owns and operates iron ore mines closely located to Company s operations in Minas Gerais, Brazil. The purchase price is R$2,131 (US$550 million) and the conclusion of transaction is expected to occur in 2019, subject to conditions precedent.

New Steel - In January 2019 (subsequent event), the Company acquired for the total consideration of R$1,937 (US$500 million) the control of New Steel Global NV, a company that develops innovative iron ore beneficiation technologies and currently owns patents of dry processing concentration in 56 countries.

39

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

2017

Nacala Logistic Corridor In March 2017, the Company concluded the transaction with Mitsui & Co., Ltd. (Mitsui) to transfer 50% of its stake of 66.7% in Nacala Logistic Corridor, which comprises entities that holds railroads and port concessions located in Mozambique and Malawi, and sell 15% participation in the holding entity of Vale Moçambique, which holds the Moatize Coal Project, for the amount of R$2,186 (US$690 million).

After the completion of the transaction, the Company (i) holds 81% of Vale Moçambique and retains the control of the Moatize Coal Project and (ii) shares control of the Nacala Logistic Corridor structure (Nacala BV), with Mitsui.

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

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

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

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

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

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

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

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

After the conclusion of the transaction, Vale has outstanding loan balances with the related parties Nacala BV and Pangea Emirates Ltd due to the deconsolidation of Nacala Logistic Corridor, as disclosed in note 31.

2016

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Investments (continued)

			Investments		**Equity results in the income statement**			**Dividends received (i)**		
					Year ended December 31			**Year ended December 31**		
	% ownership	**% voting capital**	**December 31, 2018**	**December 31, 2017**	**2018**	**2017**	**2016**	**2018**	**2017**	**2016**
Subsidiaries										
Aços Laminados do Pará S.A.	100.00	100.00	91	97	(6)	(247)				
Biopalma da Amazônia S.A.	98.96	98.96	761	994	(562)	(173)	59			
Companhia Portuária da Baía de Sepetiba	100.00	100.00	276	267	161	142	318	143	318	455
Mineração Corumbaense Reunida S.A.	100.00	100.00			(73)	(682)	(117)			
Minerações Brasileiras Reunidas S.A.	58.93	98.32	5,760	5,417	752	731	716	866	542	1,329
Minerações Brasileiras Reunidas S.A. - Goodwill			4,060	4,060						
Salobo Metais S.A.	100.00	100.00	10,716	9,535	2,384	1,564	598	1,094	417	258
Tecnored Desenvolvimento Tecnológico S.A.	100.00	100.00	76	45	(60)	(24)	(38)			
Vale International Holdings GmbH	100.00	100.00	7,372	7,830	(1,808)	(609)	(2,694)			
Vale Canada Limited (ii)	100.00	100.00	20,260	17,125	(569)	(2,988)	(4,889)			
Vale International S.A.	100.00	100.00	65,927	41,389	4,054	7,649	12,709			
Vale Malaysia Minerals Sdn. Bhd.	100.00	100.00	5,210	4,243	226	273	394			
Vale Manganês S.A.	100.00	100.00	711	679	32	84	(81)			
Vale Shipping Holding Pte. Ltd.	100.00	100.00	1,476	9,334	301	29	32			
Valepar - Goodwill			3,073	3,073						
Others			1,246	1,497	(637)	(472)	(504)	7	791	71
			127,015	**105,585**	**4,195**	**5,277**	**6,503**	**2,110**	**2,068**	**2,113**
Joint Ventures										
Aliança Geração de Energia S.A.	55.00	55.00	1,882	1,889	81	86	157	88	93	137

Aliança Norte Energia Participações S.A.	51.00	51.00	628	529	54	(7)	(21)			
California Steel Industries, Inc.	50.00	50.00	958	663	289	135	107	114	88	13
Companhia Coreano-Brasileira de Pelotização	50.00	50.00	404	295	253	161	61	121	62	90
Companhia Hispano-Brasileira de Pelotização	50.89	51.00	323	270	200	132	50	86	53	95
Companhia Ítalo-Brasileira de Pelotização	50.90	51.00	312	263	219	128	56	122	54	33
Companhia Nipo-Brasileira de Pelotização	51.00	51.11	575	453	460	295	101	255	96	141
Companhia Siderúrgica do Pecém	50.00	50.00		867	(867)	(849)	135			
MRS Logística S.A.	48.16	46.75	1,922	1,711	264	219	201	106	95	34
Others			88	90	23	(183)	27	2		1
			7,092	**7,030**	**976**	**117**	**874**	**894**	**541**	**544**
Associates										
Henan Longyu Energy Resources Co., Ltd.	25.00	25.00	1,228	1,048	58	63	(18)			
Mineração Rio Grande do Norte S.A.	40.00	40.00	360	333	6	43	172		136	111
VLI S.A.	37.60	37.60	3,319	3,202	119	94	120	28	62	
Zhuhai YPM Pellet Co.	25.00	25.00	87	76	2					
Others			409	113	(16)	(15)	(37)			14
			5,403	**4,772**	**169**	**185**	**237**	**28**	**198**	**125**
Total of joint ventures and associates			**12,495**	**11,802**	**1,145**	**302**	**1,111**	**922**	**739**	**669**
Total			**139,510**	**117,387**	**5,340**	**5,579**	**7,614**	**3,032**	**2,807**	**2,782**

(i) Dividends received by the Parent Company during the year ended at December 31, 2018 and 2017 were R$2.836 and R$2,644, respectively.

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

c) Summarized financial information

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

	December 31, 2018					
		Joint ventures			Associates	
	Aliança Geração de Energia	CSP	Pelletizing (i)	MRS Logística	Henan Longyu	VLI S.A.
Current assets	720	2,684	3,736	1,017	4,278	2,632
Non-current assets	3,635	11,875	1,147	7,074	1,520	15,257
Total assets	**4,355**	**14,559**	**4,883**	**8,091**	**5,798**	**17,889**
Current liabilities	321	3,764	1,693	1,392	787	2,109
Non-current liabilities	612	10,795	6	2,709	101	6,954
Total liabilities	**933**	**14,559**	**1,699**	**4,101**	**888**	**9,063**
Stockholders equity	**3,422**		**3,184**	**3,990**	**4,910**	**8,826**
Net income (loss)	**148**	**(1,734)**	**2,229**	**549**	**233**	**317**

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

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

The stand-alone financial statements of those entities may differ from the financial information reported herein, which is prepared considering Vale s accounting policies including eventual goodwill, provisional price adjustment and others.

Accounting policy

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

The joint operations are recorded in the financial statements to represent the Company s contractual rights and obligations.

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

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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 has concluded that the Company does not have a sufficiently dominant voting interest to have the power to direct the activities of the entity. As a result, these entities are accounted under equity method due to shareholder s agreements where relevant decisions are shared with other parties.

17. Noncontrolling interest

a) Summarized financial information

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

	December 31, 2018					
	MBR	**PTVI**	**VNC**	**Vale Moçambique S.A.**	**Others (i)**	**Total**
Current assets	2,252	1,802	785	1,174		
Non-current assets	9,684	6,074	7,447	6,620		
Related parties Stockholders	2,794	429	217	85		
Total assets	**14,730**	**8,305**	**8,449**	**7,879**		
Current liabilities	723	639	546	1,211		
Non-current liabilities	1,092	594	990	308		
Related parties - Stockholders	765		2,967	33,829		
Total liabilities	**2,580**	**1,233**	**4,503**	**35,348**		

Stockholders equity	12,150	7,072	3,946	(27,469)		
Equity attributable to noncontrolling interests	**4,860**	**2,953**	**196**	**(4,998)**	**269**	**3,280**
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	**587**				**48**	**635**

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

	December 31, 2017						
	MBR	**PTVI**	**VNC**	**Vale Moçambique S.A.**	**Compañia Mineradora Miski Mayo S.A.C. (i)**	**Others (ii)**	**Total**
Current assets	1,349	1,305	827	1,261	225		
Non-current assets	10,061	5,247	6,767	5,467	1,481		
Related parties Stockholders	1,954	486	382	837	19		
Total assets	**13,364**	**7,038**	**7,976**	**7,565**	**1,725**		
Current liabilities	561	423	469	419	117		
Non-current liabilities	953	784	728	107	319		
Related parties - Stockholders	747	10	4,363	27,231	32		
Total liabilities	**2,261**	**1,217**	**5,560**	**27,757**	**468**		
Stockholders equity	11,103	5,821	2,416	(20,192)	1,257		
Equity attributable to noncontrolling interests	**4,441**	**2,431**	**121**	**(3,641)**	**754**	**242**	**4,348**
Net income (loss)	1,385	(49)	(1,827)	(2,110)	(37)		
Net income (loss) attributable to noncontrolling interests	**554**	**(20)**	**(91)**	**(332)**	**(22)**	**(46)**	**43**
Dividends paid to noncontrolling interests	**361**					**43**	**404**

(i) Discontinued operations

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

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	December 31, 2016						
	MBR	**PTVI**	**VNC**	**Vale Moçambique S.A.**	**Compañia Mineradora Miski Mayo S.A.C. (i)**	**Others (ii)**	**Total**
Net income (loss)	1,393	6	(2,627)	(1,928)	16		
Net income (loss) attributable to noncontrolling interests	**572**	**3**	**(131)**	**(96)**	**9**	**(372)**	**(15)**
Dividends paid to noncontrolling interests	**886**				**38**	**48**	**972**

(i) Discontinued operation

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

The stand-alone financial statements of those entities may differ from the financial information reported herein, which is prepared considering Vale s accounting policies including eventual goodwill, provisional price adjustment and others.

18. Intangibles

Changes in intangibles are as follows:

	Consolidated				
	Goodwill	**Concessions**	**Right of use**	**Software**	**Total**
Balance at December 31, 2016	**10,041**	**10,759**	**480**	**1,115**	**22,395**
Additions		3,140		81	3,221
Disposals		(30)			(30)
Amortization		(671)	(7)	(456)	(1,134)
Translation adjustment	479	38	33	19	569
Merger of Valepar (note 30)	3,073				3,073
Balance at December 31, 2017	**13,593**	**13,236**	**506**	**759**	**28,094**
Cost	13,593	16,787	798	5,141	36,319

Accumulated amortization		(3,551)	(292)	(4,382)	(8,225)
Balance at December 31, 2017	**13,593**	**13,236**	**506**	**759**	**28,094**
Additions		3,046		22	3,068
Disposals		(99)		(8)	(107)
Amortization		(494)	(6)	(356)	(856)
Translation adjustment	562	48	30	11	651
Balance at December 31, 2018	**14,155**	**15,737**	**530**	**428**	**30,850**
Cost	14,155	19,539	778	3,574	38,046
Accumulated amortization		(3,802)	(248)	(3,146)	(7,196)
Balance at December 31, 2018	**14,155**	**15,737**	**530**	**428**	**30,850**

	Parent company			
	Concessions	**Right of use**	**Software**	**Total**
Balance at December 31, 2016	**10,278**	**118**	**918**	**11,314**
Additions	2,778		69	2,847
Disposals	(22)			(22)
Amortization	(261)	(7)	(400)	(668)
Balance at December 31, 2017	**12,773**	**111**	**587**	**13,471**
Cost	16,245	223	4,110	20,578
Accumulated amortization	(3,472)	(112)	(3,523)	(7,107)
Balance at December 31, 2017	**12,773**	**111**	**587**	**13,471**
Additions	3,031		8	3,039
Disposals	(96)		(8)	(104)
Amortization	(468)	(6)	(310)	(784)
Balance at December 31, 2018	**15,240**	**105**	**277**	**15,622**
Cost	18,945	223	2,431	21,599
Accumulated amortization	(3,705)	(118)	(2,154)	(5,977)
Balance at December 31, 2018	**15,240**	**105**	**277**	**15,622**

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

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

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

Accounting policy

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

The estimated useful lives are as follows:

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

19. Property, plant and equipment

Changes in property, plant and equipment are as follows:

	Consolidated							
	Land	Building	Facilities	Equipment	Mineral properties	Others	Constructions in progress	Total
Balance at December 31, 2016	**2,360**	**34,790**	**30,866**	**22,141**	**27,312**	**24,494**	**38,653**	**180,616**
Additions (i)							10,867	10,867
Disposals	(2)	(37)	(181)	(214)	(490)	(684)	(503)	(2,111)
Assets retirement obligation					1,382			1,382
Depreciation, amortization and depletion		(1,871)	(2,351)	(2,596)	(1,971)	(2,407)		(11,196)
Impairment (note 20)	(65)			(110)	(429)		(279)	(883)
Translation adjustment	293	326	454	63	1,237	572	(85)	2,860
Transfers	(211)	6,820	10,198	3,519	2,958	5,129	(28,413)	
Balance at December 31, 2017	**2,375**	**40,028**	**38,986**	**22,803**	**29,999**	**27,104**	**20,240**	**181,535**
Cost	2,375	63,392	60,509	42,490	57,794	41,223	20,240	288,023
Accumulated depreciation		(23,364)	(21,523)	(19,687)	(27,795)	(14,119)		(106,488)
Balance at December 31, 2017	**2,375**	**40,028**	**38,986**	**22,803**	**29,999**	**27,104**	**20,240**	**181,535**
Additions (i)							10,451	10,451
Disposals	(43)	(177)	(338)	(917)	(28)	(291)	(340)	(2,134)
Assets retirement obligation					1,686			1,686
Depreciation, amortization and depletion		(1,922)	(2,378)	(3,080)	(1,904)	(2,370)		(11,654)
Impairment (note 20)		(39)	(70)	(82)		(119)	(403)	(713)
Translation adjustment	85	1,531	1,241	1,754	1,848	883	968	8,310
Transfers	42	3,013	6,095	4,348	1,330	2,968	(17,796)	
Balance at December 31, 2018	**2,459**	**42,434**	**43,536**	**24,826**	**32,931**	**28,175**	**13,120**	**187,481**
Cost	2,459	70,779	68,238	48,140	64,773	45,331	13,120	312,840
Accumulated depreciation		(28,345)	(24,702)	(23,314)	(31,842)	(17,156)		(125,359)
Balance at December 31, 2018	**2,459**	**42,434**	**43,536**	**24,826**	**32,931**	**28,175**	**13,120**	**187,481**

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Parent company							
	Land	Building	Facilities	Equipment	Mineral properties	Others	Constructions in progress	Total
Balance at December 31, 2016	**1,684**	**20,945**	**20,416**	**8,479**	**4,122**	**16,499**	**29,911**	**102,056**
Additions (i)							6,195	6,195
Disposals	(1)		(70)	(66)		(96)	(366)	(599)
Assets retirement obligation					269			269
Depreciation, amortization and depletion		(755)	(1,092)	(1,098)	(267)	(1,731)		(4,943)
Transfers	56	5,125	7,950	2,401	1,243	3,533	(20,308)	
Balance at December 31, 2017	**1,739**	**25,315**	**27,204**	**9,716**	**5,367**	**18,205**	**15,432**	**102,978**
Cost	1,739	30,456	34,144	16,482	7,088	27,735	15,432	133,076
Accumulated depreciation		(5,141)	(6,940)	(6,766)	(1,721)	(9,530)		(30,098)
Balance at December 31, 2017	**1,739**	**25,315**	**27,204**	**9,716**	**5,367**	**18,205**	**15,432**	**102,978**
Additions (i)							5,062	5,062
Disposals	(41)	(20)	(280)	(141)	(7)	(90)	(173)	(752)
Assets retirement obligation					1,966			1,966
Depreciation, amortization and depletion		(854)	(1,274)	(1,269)	(292)	(1,749)		(5,438)
Transfers	37	2,118	4,943	1,698	655	2,874	(12,325)	
Balance at December 31, 2018	**1,735**	**26,559**	**30,593**	**10,004**	**7,689**	**19,240**	**7,996**	**103,816**
Cost	1,735	33,136	38,554	17,307	9,731	30,883	7,996	139,342
Accumulated depreciation		(6,577)	(7,961)	(7,303)	(2,042)	(11,643)		(35,526)
Balance at December 31, 2018	**1,735**	**26,559**	**30,593**	**10,004**	**7,689**	**19,240**	**7,996**	**103,816**

(i) Includes capitalized borrowing costs.

Disposals of assets

The Company recognized a loss of R$1,283 and R$1,144 in the income statement as Impairment and disposal of non-current assets for the year ended December 31, 2018 and 2017, respectively, due to non-viable projects and operating assets written off through sale or obsolescence.

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

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

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

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.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

20. Impairment and onerous contracts

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

Segments by class of assets	Assets or cash-generating unit	Income statement Impairment (reversals) 2018	2017	2016
Property, plant and equipment and intangible				
Iron ore	North system			(536)
Coal	Australia			91
Base metals nickel	Stobie (VCL)		428	
Base metals nickel	Newfoundland (VNL)			2,112
Base metals nickel	Nouvelle Caledonie (VNC)			952
Several segments	Other assets	713	455	460
Impairment of non-current assets		**713**	**883**	**3,079**
Onerous contracts		1,527		861
Impairment of non-current assets and onerous contracts		**2,240**	**883**	**3,940**

a) Impairment of non-financial assets

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

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

The cash flows were discounted using a post-tax discount rate ranging from 6% to 10%, which represents an estimate of the rate that a market participant would apply having regard to the time value of money and the risks specific to the asset. The Company used its weighted average cost of capital (WACC) as a starting point for determining the discount rates, with appropriate adjustments for the risk profile of the countries in which the individual CGU operates.

Iron ore and pellets - During 2018, the Company did not identify any changes in the circumstances or indicators that would require reassessment of the carrying amount of the iron ore and pellets CGUs. Of the total goodwill (note 18), R$7,133 is allocated to the group of ferrous mineral CGUs. The impairment analysis based on FVLCD model demonstrates that there was no impairment loss in relation to the individual CGUs or goodwill.

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

Coal - Based on the 2018 impairment triggering assessment, the Company has identified trigger of impairment in the Mozambique CGU driven by the lower than planned production volumes during the year. The Company carried out an impairment test based on FVLCD model and concluded that there were no changes in the impairment recognized in 2015.

In 2016, the mining plans for the coal assets in Australia were revised and an impairment loss of R$91 was recognized in the income statement.

Nickel (Onça Puma) - In September 2017, the Federal Court granted an injunction suspending the nickel mining operations at Onça Puma (base metals segment). The Company has appealed this decision to seek a suspension of this injunction, but it is not possible to anticipate when Onça Puma activities will resume. On the assumption that the Company will be able to operate this asset in the future, the Company carried out an impairment test based on FVLCD model assuming different returning of operations scenarios and concluded that no impairment loss should be booked.

Nickel (Others) - In addition, the Company did not identify any changes in the circumstances or indicators during 2018 that would require reassessment of the carrying amount of the other Nickel CGUs. Of the total goodwill (note 18), R$7,022 is allocated to the group of nickel CGUs. The impairment analysis based on FVLCD model demonstrates that there was no impairment loss in relation to the individual CGUs or goodwill.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

In 2017, an underground mine in Sudbury (Stobie) was affected by seismic activities and the cost to repair the asset is deemed not recoverable in the current market conditions. Therefore, the Company has placed this asset on care and maintenance and an impairment of R$428 was recognized in the income statement.

In 2016, the decrease in long term nickel price projections, that significantly reduced the recoverable amounts of the VNL and VNC CGUs, associated with significant capital investments in new processing facilities in recent years, resulted in impairment losses of R$2,112 and R$952, respectively.

Other assets The Company has undertaken a review on the business plan of its biological assets leading to a reduction in the expected operational capacity of these assets. The Company carried out an impairment test based on FVLCD model and an impairment loss of R$713 was recognized in the income statement.

b) Onerous contract

In 2018, the Company recognized a provision of R$1,527 (2016: R$861) for the costs in respect of certain long-term contracts in the Midwest system for fluvial transportation and port structure, with minimum guaranteed volume.

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

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

21. Loans, borrowings and cash and cash equivalents

a) Cash and cash equivalents

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

b) Loans and borrowings

As at December 31, 2018 and 2017, loans and borrowings are secured by property, plant and equipment and receivables in the amount of R$857 and R$910, respectively.

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

i) Total debt

	Consolidated			
	Current liabilities		Non-current liabilities	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Principal in:				
US$	993	2,148	39,909	53,125
EUR			4,217	3,771
R$	1,907	1,703	11,392	11,142
Other currencies	96	57	492	682
Accrued charges	**893**	**1,725**	**29**	**39**
Total	**3,889**	**5,633**	**56,039**	**68,759**

	Parent company			
	Current liabilities		Non-current liabilities	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Principal in:				
US$	557	1,829	9,004	15,713
EUR			3,329	2,977
R$	1,581	1,404	10,749	10,276
Accrued charges	**385**	**1,145**		
Total	**2,523**	**4,378**	**23,082**	**28,966**

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

	Consolidated		Parent company
	Principal	Estimated future interest payments (i)	Principal
2019	2,996	3,219	2,137
2020	4,079	3,095	3,407
2021	4,778	2,835	3,040
2022	7,252	2,565	2,720
Between 2023 and 2027	19,796	8,262	11,043
2028 onwards	20,105	14,701	2,873
Total	**59,006**	**34,677**	**25,220**

(i) Based on interest rate curves and foreign exchange rates applicable as at December 31, 2018 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.

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

	Consolidated Loans and borrowings
December 31, 2017	**74,392**
Additions	4,584
Repayments (i)	(28,149)
Interest paid	(4,023)
Cash flow from financing activities	**(27,588)**
Effect of exchange rate	8,982
Interest accretion	4,142
Non-cash changes	13,124
December 31, 2018	**59,928**

(i) In 2018, the Company conducted a cash tender offer for Vale Overseas 5.875% guaranteed notes due 2021, 6.875% guaranteed notes due 2036, 4.375% guaranteed notes due 2022 and a cash tender offer for Vale S.A. 5.625% guaranteed notes due 2042 and repurchased a total of R$14,453 (US$3,730 million). The Company also redeemed all of Vale Overseas 4.625% guaranteed notes due 2020 totaling R$1,698 (US$499 million).

Accounting policy

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

Loans and borrowing costs are capitalized as part of property, plants and equipment if those costs are directly related to a qualified asset. The capitalization occurs until the qualified asset is ready for its intended use. The average capitalization rate is 17%. Borrowing costs that are not capitalized are recognized in the income statement in the period in which they are incurred.

Liquidity risk - The revolving credit facilities available today were provided by a syndicate of several global commercial banks. To mitigate liquidity risk, Vale has two revolving credit facilities, which will mature in 2020 and 2022, in the available amount of R$19,374 (US$5,000 million) to assist the short term liquidity management and to enable more efficiency in cash management, being consistent with the strategic focus on cost of capital reduction. As of December 31, 2018, these lines are undrawn.

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 (LAJIDA - Earnings before Interest Taxes, Depreciation and Amortization) and interest coverage. The Company has not identified any instances of noncompliance as at December 31, 2018 and 2017.

22. Liabilities related to associates and joint ventures

In March 2016 Samarco and its shareholders, Vale S.A. and BHP Billiton Brasil Ltda. (BHPB), entered into an Agreement (Framework Agreement) with the Brazilian federal government, the two Brazilian states (Espírito Santo and Minas Gerais) and other governmental authorities, in connection with the lawsuit related to the Samarco dam failure (note 28d), in order to implement the programs for remediation and compensation of the areas and communities affected.

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

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

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

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

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

The changes in the provisions are as follows:

	2018	2017
Balance at January 01,	**3,296**	**3,511**
Payments	(1,065)	(941)
Present value valuation	592	598
Provision increase	1,523	128
Balance at December 31,	**4,346**	**3,296**
Current liabilities	1,120	1,080
Non-current liabilities	3,226	2,216
Liabilities	**4,346**	**3,296**

In 2018, the Fundação Renova reviewed the estimates for the expenditures required to mitigate and compensate for the impacts of the disruption from Samarco s tailing dam. As a result of this revision, Vale S.A. recognized in 2018 an additional provision of R$1,523, which amounts to the present value of Vale s new estimated secondary responsibility to support the Renova Foundation works and is equivalent to 50% of Samarco s additional obligations over the next 12 years.

In addition to the provision above, Vale S.A. made available in the year ended December 31, 2018 and 2017 the amount of R$315 and R$452, respectively, which was fully used to fund Samarco s working capital and was recognized in Vale´s income statement as an expense in Equity results and other results in associates and joint ventures . Vale S.A. intends to make available until June 30, 2019 short-term facilities up to R$341 to support Samarco s cash necessity, without any binding obligation to Samarco in this regard. Such support will be released simultaneously with BHPB, and pursuant to the same amounts, terms and conditions, subject to the fulfillment of certain milestones.

The summarized financial information of Samarco are as follows:

	December 31, 2018	December 31, 2017
Current assets	210	220
Non-current assets	13,342	19,901
Total assets	**13,552**	**20,121**
Current liabilities	23,517	18,132
Non-current liabilities	15,242	11,996

Total liabilities	**38,759**	**30,128**
Negative reserves	**(25,207)**	**(10,007)**
Loss	**(4,869)**	**(3,062)**

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

Critical accounting estimates and judgments

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

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

23. Financial instruments classification

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

	Consolidated						
	December 31, 2018				December 31, 2017		
Financial assets	**Amortized cost**	**At fair value through OCI**	**At fair value through profit or loss**	**Total**	**Loans and receivables or amortized cost**	**At fair value through profit or loss**	**Total**
Current							
Cash and cash equivalents	22,413			22,413	14,318		14,318
Financial investments			125	125	61		61
Derivative financial instruments			149	149		351	351
Accounts receivable	10,679		(418)	10,261	8,039	563	8,602
Related parties	1,409			1,409	6,277		6,277
	34,501		**(144)**	**34,357**	**28,695**	**914**	**29,609**
Non-current							
Derivative financial instruments			1,520	1,520		1,497	1,497
Investments in equity securities		3,823		3,823			
Loans	589			589	498		498
Related parties	6,248			6,248	8,695		8,695
	6,837	**3,823**	**1,520**	**12,180**	**9,193**	**1,497**	**10,690**
Total of financial assets	**41,338**	**3,823**	**1,376**	**46,537**	**37,888**	**2,411**	**40,299**
Financial liabilities							
Current							
Suppliers and contractors	13,610			13,610	13,367		13,367
Derivative financial instruments			1,821	1,821		344	344
Loans and borrowings	3,889			3,889	5,633		5,633
Related parties	4,392			4,392	2,916		2,916
	21,891		**1,821**	**23,712**	**21,916**	**344**	**22,260**
Non-current							
Derivative financial instruments			1,335	1,335		2,269	2,269

Loans and borrowings	56,039			56,039	68,759		68,759
Related parties	3,722			3,722	3,226		3,226
Participative stockholders debentures			5,454	5,454		4,080	4,080
	59,761		**6,789**	**66,550**	**71,985**	**6,349**	**78,334**
Total of financial liabilities	**81,652**		**8,610**	**90,262**	**93,901**	**6,693**	**100,594**

				Parent company			
		December 31, 2018				**December 31, 2017**	
Financial assets	**Amortized cost**	**At fair value through OCI**	**At fair value through profit or loss**	**Total**	**Loans and receivables or amortized cost**	**At fair value through profit or loss**	**Total**
Current							
Cash and cash equivalents	4,835			4,835	1,876		1,876
Financial investments			4	4	4		4
Derivative financial instruments			116	116		199	199
Accounts receivable	17,344		(11)	17,333	9,571	(11)	9,560
Related parties	240			240	206		206
	22,419		**109**	**22,528**	**11,657**	**188**	**11,845**
Non-current							
Derivative financial instruments			1,471	1,471		1,268	1,268
Investments in equity securities		3,334		3,334			
Loans	18			18	18		18
Related parties	453			453	579		579
	471	**3,334**	**1,471**	**5,276**	**597**	**1,268**	**1,865**
Total of financial assets	**22,890**	**3,334**	**1,580**	**27,804**	**12,254**	**1,456**	**13,710**
Financial liabilities							
Current							
Suppliers and contractors	7,342			7,342	7,503		7,503
Derivative financial instruments			1,506	1,506		311	311
Loans and borrowings	2,523			2,523	4,378		4,378
Related parties	3,577			3,577	4,102		4,102
	13,442		**1,506**	**14,948**	**15,983**	**311**	**16,294**
Non-current							
Derivative financial instruments			1,245	1,245		2,113	2,113
Loans and borrowings	23,082			23,082	28,966		28,966
Related parties	65,041			65,041	48,762		48,762
Participative stockholders debentures			5,454	5,454		4,080	4,080
	88,123		**6,699**	**94,822**	**77,728**	**6,193**	**83,921**
Total of financial liabilities	**101,565**		**8,205**	**109,770**	**93,711**	**6,504**	**100,215**

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

			Consolidated December 31, 2018			
Financial assets	**R$**	**US$**	**CAD**	**EUR**	**Others currencies**	**Total**
Current						
Cash and cash equivalents	10,715	11,172	89	46	391	22,413
Financial investments	4	121				125
Derivative financial instruments	116	33				149
Accounts receivable	1,731	8,517	13			10,261
Related parties		1,409				1,409
	12,566	**21,252**	**102**	**46**	**391**	**34,357**
Non-current						
Derivative financial instruments	1,471	49				1,520
Investments in equity securities		3,823				3,823
Loans	18	571				589
Related parties		6,248				6,248
	1,489	**10,691**				**12,180**
Total of financial assets	**14,055**	**31,943**	**102**	**46**	**391**	**46,537**
Financial liabilities						
Current						
Suppliers and contractors	6,939	4,580	1,133	548	410	13,610
Derivative financial instruments	1,506	315				1,821
Loans and borrowings	2,062	1,589	98	140		3,889
Related parties	2,981	1,411				4,392
	13,488	**7,895**	**1,231**	**688**	**410**	**23,712**
Non-current						
Derivative financial instruments	1,246	89				1,335
Loans and borrowings	11,423	39,909	491	4,216		56,039
Related parties	253	3,469				3,722
Participative stockholders debentures	5,454					5,454
	18,376	**43,467**	**491**	**4,216**		**66,550**
Total of financial liabilities	**31,864**	**51,362**	**1,722**	**4,904**	**410**	**90,262**

			Consolidated December 31, 2017			
Financial assets	**R$**	**US$**	**CAD**	**EUR**	**Others currencies**	**Total**
Current						
Cash and cash equivalents	5,921	7,924	159	36	278	14,318
Financial investments	3	58				61

Derivative financial instruments	199	152				351
Accounts receivable	813	7,723	20		46	8,602
Related parties		6,277				6,277
	6,936	**22,134**	**179**	**36**	**324**	**29,609**
Non-current						
Derivative financial instruments	1,269	228				1,497
Loans	17	481				498
Related parties		8,695				8,695
	1,286	**9,404**				**10,690**
Total of financial assets	**8,222**	**31,538**	**179**	**36**	**324**	**40,299**
Financial liabilities						
Current						
Suppliers and contractors	8,150	3,665	1,277	162	113	13,367
Derivative financial instruments	314	30				344
Loans and borrowings	2,541	2,911	57	124		5,633
Related parties		2,916				2,916
	11,005	**9,522**	**1,334**	**286**	**113**	**22,260**
Non-current						
Derivative financial instruments	2,110	159				2,269
Loans and borrowings	11,178	53,125	685	3,771		68,759
Related parties	258	2,968				3,226
Participative stockholders debentures	4,080					4,080
	17,626	**56,252**	**685**	**3,771**		**78,334**
Total of financial liabilities	**28,631**	**65,774**	**2,019**	**4,057**	**113**	**100,594**

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Parent company December 31, 2018				
Financial assets	**R$**	**US$**	**EUR**	**Others currencies**	**Total**
Current					
Cash and cash equivalents	4,773	62			4,835
Financial investments	4				4
Derivative financial instruments	116				116
Accounts receivable	570	16,756	7		17,333
Related parties		240			240
	5,463	**17,058**	**7**		**22,528**
Non-current					
Derivative financial instruments	1,471				1,471
Investments in equity securities		3,334			3,334
Loans	18				18
Related parties		453			453
	1,489	**3,787**			**5,276**
Total of financial assets	**6,952**	**20,845**	**7**		**27,804**
Financial liabilities					
Current					
Suppliers and contractors	6,953	130	236	23	7,342
Derivative financial instruments	1,506				1,506
Loans and borrowings	1,722	662	139		2,523
Related parties	796	2,781			3,577
	10,977	**3,573**	**375**	**23**	**14,948**
Non-current					
Derivative financial instruments	1,245				1,245
Loans and borrowings	10,749	9,004	3,329		23,082
Related parties	1,750	63,291			65,041
Participative stockholders debentures	5,454				5,454
	19,198	**72,295**	**3,329**		**94,822**
Total of financial liabilities	**30,175**	**75,868**	**3,704**	**23**	**109,770**

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

Derivative financial instruments	1,268			1,268
Loans	18			18
Related parties		579		579
	1,286	**579**		**1,865**
Total of financial assets	**4,419**	**9,284**	**7**	**13,710**
Financial liabilities				
Current				
Suppliers and contractors	7,276	163	64	7,503
Derivative financial instruments	311			311
Loans and borrowings	2,228	2,026	124	4,378
Related parties	822	3,280		4,102
	10,637	**5,469**	**188**	**16,294**
Non-current				
Derivative financial instruments	2,113			2,113
Loans and borrowings	10,276	15,713	2,977	28,966
Related parties	2,508	46,254		48,762
Participative stockholders debentures	4,080			4,080
	18,977	**61,967**	**2,977**	**83,921**
Total of financial liabilities	**29,614**	**67,436**	**3,165**	**100,215**

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Accounting policy

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 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 fair value through profit or loss unless they are eligible to be measured at FVOCI. The Company recognizes equity instruments and gains and losses are never being recycled to profit or loss.

Information about the Company s exposure to credit risk is set out in note 33.

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. Participative stockholders debentures and Derivative financial instruments are measured at fair value through profit or loss.

24. Fair value estimate

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

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

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

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

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

	Consolidated						
	December 31, 2018				December 31, 2017		
	Level 1	Level 2	Level 3	Total	Level 2	Level 3	Total
Financial assets							
Financial investments	125			125			
Derivative financial instruments		525	1,144	1,669	954	894	1,848
Accounts receivable		(418)		(418)	563		563
Investments in equity securities	3,823			3,823			
Total	**3,948**	**107**	**1,144**	**5,199**	**1,517**	**894**	**2,411**
Financial liabilities							
Derivative financial instruments		2,466	690	3,156	1,923	690	2,613
Participative stockholders debentures		5,454		5,454	4,080		4,080
Total		**7,920**	**690**	**8,610**	**6,003**	**690**	**6,693**

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Parent company						
	December 31, 2018				December 31, 2017		
	Level 1	Level 2	Level 3	Total	Level 2	Level 3	Total
Financial assets							
Financial investments	4			4			
Derivative financial instruments		443	1,144	1,587	573	894	1,467
Accounts receivable		(11)		(11)	(11)		(11)
Investments in equity securities	3,334			3,334			
Total	**3,338**	**432**	**1,144**	**4,914**	**562**	**894**	**1,456**
Financial liabilities							
Derivative financial instruments		2,061	690	2,751	1,734	690	2,424
Participative stockholders debentures		5,454		5,454	4,080		4,080
Total		**7,515**	**690**	**8,205**	**5,814**	**690**	**6,504**

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

There were no transfers between Level 1 and Level 2, or between Level 2 and Level 3 in the year ended December 31, 2018.

The following table presents the changes in Level 3 assets and liabilities for the year ended December 31, 2018:

	Consolidated		Parent company	
	Derivative financial instruments			
	Financial assets	Financial liabilities	Financial assets	Financial liabilities
Balance at December 31, 2017	**894**	**690**	**894**	**690**
Gain and losses recognized in income statement	250		250	
Balance at December 31, 2018	**1,144**	**690**	**1,144**	**690**

Methods and valuation techniques

i) Derivative financial instruments

Derivative financial instruments are evaluated through the use of market curves and prices impacting each instrument at the closing dates, detailed in the item market curves (note 34).

For the pricing of options the Company often uses the Black & Scholes model. In this model, the fair value of the derivative is determined basically as a function of the volatility and the price of the underlying asset, the strike price of the option, the risk free interest rate and the option maturity. In the case of options where payoff is a function of the average price of the underlying asset over a certain period during the life of the option, the Company uses Turnbull & Wakeman model. In this model, in addition to the factors that influence the option price in the Black-Scholes model, the formation period of the average price is also considered.

In the case of swaps, both the present value of the long and short positions are estimated by discounting their cash flows by the interest rate in the related currency. The fair value is determined by the difference between the present value of the long and short positions of the swap in the reference currency.

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

Forward and future contracts are priced using the future curves of their corresponding underlying assets. Typically, these curves are obtained on the stock exchanges where these assets are traded, such as the London Metals Exchange (LME), the Commodity Exchange (COMEX) or other providers of market prices. When there is no price for the desired maturity, Vale uses an interpolation between the available maturities.

The fair value of derivatives within level 3 is estimated using discounted cash flows and option model valuation techniques with unobservable inputs of discount rates, stock prices and commodities prices.

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

57

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Critical accounting estimates and judgments

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

An analysis of the impact if actual results are different from management s estimates is present on note 34 (sensitivity analysis).

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

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

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

	Consolidated				Parent company			
	Balance	**Fair value**	**Level 1**	**Level 2**	**Balance**	**Fair value**	**Level 1**	**Level 2**
Financial liabilities								
December 31, 2018								
Debt principal	59,006	63,013	41,408	21,605	25,220	25,586	8,049	17,537
December 31, 2017								
Debt principal	72,628	76,377	49,406	26,971	32,199	34,088	11,213	22,875

25. Derivative financial instruments

a) **Derivatives effects on statement of financial position**

	Consolidated Assets			
	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	35		125	
IPCA swap	27	324	30	271
Eurobonds swap		17		89
Pré-dolar swap	73	3	73	106
	135	**344**	**228**	**466**
Commodities price risk				
Nickel	8		73	10
Bunker oil	3		50	
	11		**123**	**10**
Others (note 34)	3	1,176		1,021
	3	**1,176**		**1,021**
Total	**149**	**1,520**	**351**	**1,497**

58

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Consolidated Liabilities			
	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	1,481	380	314	1,356
IPCA swap	136	181		136
Eurobonds swap	19		13	
Pré-dolar swap	40	72	17	79
	1,676	**633**	**344**	**1,571**
Commodities price risk				
Nickel	31	8		
Bunker oil	114			
	145	**8**		
Others (note 34)		694		698
		694		**698**
Total	**1,821**	**1,335**	**344**	**2,269**

	Parent company Assets			
	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current
Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	16		104	
IPCA swap	27	324	21	273
Pré-dolar swap	73	3	74	102
	116	**327**	**199**	**375**
Others		1,144		893
		1,144		**893**
Total	**116**	**1,471**	**199**	**1,268**

	Parent company Liabilities			
	December 31, 2018		December 31, 2017	
	Current	Non-current	Current	Non-current

Derivatives not designated as hedge accounting				
Foreign exchange and interest rate risk				
CDI & TJLP vs. US$ fixed and floating rate swap	1,447	341	295	1,283
IPCA swap	19	143		59
Pré-dolar swap	40	72	16	81
	1,506	**556**	**311**	**1,423**
Others		689		690
		689		**690**
Total	**1,506**	**1,245**	**311**	**2,113**

59

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

	Gain (loss) recognized in the income statement				
	Consolidated			Parent company	
	Year ended December 31				
	2018	2017	2016	2018	2017
Derivatives not designated as hedge accounting					
Foreign exchange and interest rate risk					
CDI & TJLP vs. US$ fixed and floating rate swap	(750)	483	2,897	(711)	423
IPCA swap	(105)	132	257	(46)	106
Eurobonds swap	(117)	122	(75)		
Euro forward		144	(152)		
Pré-dolar swap	(82)	116	241	(82)	116
	(1,054)	**997**	**3,168**	**(839)**	**645**
Commodities price risk					
Nickel	(99)	97	(158)		
Bunker oil	16	(258)	911		
	(83)	**(161)**	**753**		
Others	**131**	**624**	**261**	**250**	**640**
Derivatives designated as cash flow hedge accounting					
Foreign exchange			(10)		
			(10)		
Total	**(1,006)**	**1,460**	**4,172**	**(589)**	**1,285**

	Financial settlement inflows (outflows)				
	Consolidated			Parent company	
	Year ended December 31				
	2018	2017	2016	2018	2017
Derivatives not designated as hedge accounting					
Foreign exchange and interest rate risk					
CDI & TJLP vs. US$ fixed and floating rate swap	(478)	(572)	(1,689)	(415)	(505)
IPCA swap	11	(65)	(78)		(65)
Eurobonds swap	(14)	(121)	(524)		
Pré-dolar swap	34	(6)	(361)	34	(7)
	(447)	**(764)**	**(2,652)**	**(381)**	**(577)**
Commodities price risk					
Nickel	23	11	(113)		
Bunker oil	187	(10)	(2,829)		

	210	**1**	**(2,942)**		
Others	**(13)**				
Derivatives designated as cash flow hedge accounting					
Foreign exchange			(10)		
			(10)		
Total	**(250)**	**(763)**	**(5,604)**	**(381)**	**(577)**

	Gain (loss) recognized in other comprehensive income				
	Consolidated			**Parent company**	
	Year ended December 31				
	2018	**2017**	**2016**	**2018**	**2017**
Derivatives designated as cash flow hedge accounting					
Foreign exchange			10		
Total			**10**		

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

	Last maturity dates
Currencies and interest rates	December 2027
Bunker oil	June 2019
Nickel	December 2020
Others	December 2027

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

c) Hedge in foreign operations

As at December 31, 2018 the carrying value of the debts designated as instrument hedge of the Company s investment in foreign operations (Vale International S.A. and Vale International Holding GmbH; hedging objects) are R$9,559 (US$2,467 million) and R$3,329 (EUR750 million), respectively. The foreign exchange losses of R$2,966 (R$1,958, net of taxes) and R$469 (R$310, net of taxes), were recognized for the year ended December 31, 2018 and 2017, respectively, in the Cumulative translation adjustments in stockholders equity. This hedge was highly effective throughout the year ended December 31, 2018.

Accounting policy

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

At the beginning of the hedge operations, the Company documents the type of hedge, the 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 adopts the hedge accounting procedure and designates certain derivatives as shows below:

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.

26. Provisions

	Consolidated			
	Current liabilities		Non-current liabilities	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Payroll, related charges and other remunerations	4,054	3,641		
Onerous contracts	235	337	2,486	1,203
Environmental obligations (i)	382	99	784	262
Asset retirement obligations (note 27)	331	289	11,738	10,191
Provisions for litigation (note 28)			5,258	4,873
Employee postretirement obligations (note 29)	276	244	7,225	6,714
Provisions	**5,278**	**4,610**	**27,491**	**23,243**

	Parent company			
	Current liabilities		Non-current liabilities	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Payroll, related charges and other remunerations	2,808	2,541		
Environmental obligations (i)	277	80	514	106
Asset retirement obligations (note 27)	158	210	3,217	1,793
Provisions for litigation (note 28)			4,483	4,219
Employee postretirement obligations (note 29)	88	73	1,544	782
Provisions	**3,331**	**2,904**	**9,758**	**6,900**

(i) In 2018, the Company recognized an obligation in the amount of R$886 in the Consolidated and R$600 in the Parent Company related to certain environmental obligation that became effective from the current year due to changes in the regulation in place.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

27. 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, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Balance at beginning of the year	**10,480**	**8,209**	**2,003**	**1,642**
Present value valuation	53	220	25	126
Settlements	(949)	(195)	(52)	(32)
Revisions on cash flows estimates	1,690	2,039	1,399	267
Translation adjustment	795	480		
Effect of discontinued operations				
Transfer to net assets held for sale		(273)		
Balance at end of the year	**12,069**	**10,480**	**3,375**	**2,003**
Current	331	289	158	210
Non-current	11,738	10,191	3,217	1,793
	12,069	**10,480**	**3,375**	**2,003**
Long-term interest rates (per annum)				
Brazil	4.94%	5.34%	4.94%	5.34%
Canada	0.77%	0.57%		
Other regions	1.33% - 8.59%	0.72% - 6.13%		

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

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

Critical accounting estimates and judgments

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

28. Litigation

a) Provision for litigation

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

Changes in provision for litigation are as follows:

	Consolidated				
	Tax litigation	**Civil litigation**	**Labor litigation**	**Environmental litigation**	**Total of litigation provision**
Balance at December 31, 2016	**695**	**272**	**1,742**	**25**	**2,734**
Additions and reversals, net	69	52	406	13	540
Payments	(372)	(8)	(336)	(2)	(718)
Indexation and interest	41	116	112	(2)	267
Translation adjustment	37				37
Merger of Valepar (note 30) (i)	2,013				2,013
Balance at December 31, 2017	**2,483**	**432**	**1,924**	**34**	**4,873**
Additions and reversals, net	63	248	383	(13)	681
Payments	(17)	(87)	(433)	(6)	(543)
Additions - discontinued operations	56	3	59	1	119
Indexation and interest	81	61	(12)	(3)	127
Translation adjustment	14	(13)			1
Balance at December 31, 2018	**2,680**	**644**	**1,921**	**13**	**5,258**

Parent company

	Tax litigation	Civil litigation	Labor litigation	Environmental litigation	Total of litigation provision
Balance at December 31, 2016	**53**	**247**	**1,621**	**23**	**1,944**
Additions and reversals, net	71	(22)	368	6	423
Payments	(78)	(27)	(323)	(2)	(430)
Indexation and interest	58	110	104	(3)	269
Merger of Valepar (note 30) (i)	2,013				2,013
Balance at December 31, 2017	**2,117**	**308**	**1,770**	**24**	**4,219**
Additions and reversals, net	1	161	315	(13)	464
Payments	(8)	(32)	(355)		(395)
Indexation and interest	74	27	(22)	(3)	76
Additions of disposals of subsidiaries	56	3	59	1	119
Balance at December 31, 2018	**2,240**	**467**	**1,767**	**9**	**4,483**

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

i. Provisions for labor litigation - Consist of lawsuits filed by employees and service suppliers, related to employment relationships mainly in Brazil. The relevant claims are related to payment for overtime work, commuting time, and health and safety conditions. Also the Brazilian national social security institute (INSS) contingencies are related to legal and administrative disputes between INSS and Vale due to applicability of compulsory social security charges.

b) Contingent liabilities

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

	Consolidated		Parent company	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Tax litigation	33,481	29,244	30,808	26,510
Civil litigation	7,583	5,371	5,371	3,957
Labor litigation	5,717	6,455	5,398	6,118
Environmental litigation	4,070	7,242	3,897	7,058
Total	**50,851**	**48,312**	**45,474**	**43,643**

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

i - Tax litigation - Our most significant tax-related contingent liabilities result from disputes related to (i) the deductibility of our payments of social security contributions on the net income (CSLL) from our taxable income, (ii) challenges of certain tax credits we deducted from our PIS and COFINS payments, (iii) assessments of CFEM (royalties), and (iv) charges of value-added tax on services and circulation of goods (ICMS), especially relating to certain tax credits we claimed from the sale and transmission of energy, ICMS charges to anticipate the payment in the entrance of goods to Pará State and ICMS/penalty charges on our own transportation. The changes reported in the period resulted, mainly, from the exclusion of the tax cases related to IPI, PIS and COFINS (isolated fine), IRPJ and ICMS (PRCT) and due to the new proceedings related to IRPJ, CSLL, ICMS, ISS and IPTU and the application interest and inflation adjustments to the disputed amounts.

ii - Civil litigation - Most of those claims have been filed by suppliers for indemnification under construction contracts, primarily relating to certain alleged damages, payments and contractual penalties. A number of other claims are related to contractual disputes regarding inflation index. The changes reported in the period resulted, mainly from reviewing the process related to commercial divergences of supply contracts.

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

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

c) Judicial deposits

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

	Consolidated		Parent company	
	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2017
Tax litigation	4,143	3,971	4,040	3,864
Civil litigation	231	199	117	48
Labor litigation	2,150	2,359	1,991	2,156
Environmental litigation	125	42	125	42
Total	**6,649**	**6,571**	**6,273**	**6,110**

Beside the deposits already made, the Company has bank guarantees for judicial deposits in the amount of R$5.6 billion. The annual cost of these guarantees is 1.5% and it is recognized as financial expenses .

d) Contingencies related to Samarco accident

Given the status of the contingencies related to Samarco accident, it is not possible to provide a range of possible outcomes or a reliable estimate of potential losses for Vale S.A. Consequently, no contingent liability has been quantified and no provision was recognized.

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

In 2016, the federal government, the Brazilian states of Espírito Santo and Minas Gerais and other governmental authorities have initiated a public civil lawsuit against Samarco and its shareholders, with an estimated value indicated by the plaintiffs of R$20.2 billion. In the same year, MPF filed a public civil action against Samarco and its shareholders and presented several claims, including: (i) the adoption of measures for mitigating the social, economic and environmental impacts resulting from the dam failure and other emergency measures; (ii) the payment of compensation to the community; and (iii) payments for the collective moral damage. The action value indicated by MPF is R$155 billion.

In 2018, the parties entered into an agreement (Term of Adjustment of Conduct), which was determined, in summary, (i) the complete extinction of the public civil claim of R$20.2 billion filed by the Federal Government and others; and (ii) the partial extinction of the public civil claim of R$155 billion filed by MPF. In relation to the public civil claim of R$155 billion, the parties continue to negotiate for the termination of some of their requests, as well as other lawsuits whose objects have already been included in the Term of Adjustment of Conduct.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

(ii) United States class action lawsuits

Samarco and its shareholders were named as defendants in securities class action lawsuits in the Federal Court in New York, related to disclosures of risks of the operations of Samarco and others. The plaintiffs have not specified an amount of alleged damages in these actions.

(iii) Criminal lawsuit

In 2016, the MPF brought a criminal lawsuit against Samarco and its shareholders, VogBr Recursos Hídricos e Geotecnia Ltda. and 22 individuals for the consequences related to Fundão dam failure. All prosecution witnesses residing in Brazil have been heard. Currently, the criminal lawsuit awaits for a position from Judiciary and all hearings related to this action are suspended.

e) Contingent assets

In 2015, the Company filed an enforceable action in the amount of R$524 referring to the final court decision in favor of the Company of the accrued interest of compulsory deposits from 1987 to 1993. Currently it is not possible to estimate the economic benefit inflow as there is a pending judicial decision. Consequently, the asset was not recognized in the financial statements.

In March 2017, the Federal Supreme Court (STF) decided that the ICMS shall not be included in PIS and COFINS tax basis. The related decision is not final because is still pending the judgment of an appeal from the Federal Government. Vale has been discussing this issue in two judicial proceedings, which are covered by taxable events occurred since December 2001. In one of them, Vale reached a favorable final judicial decision on March 18, 2019. In the other case, the Company is awaiting the application of the STF decision by Federal Regional Court of the 2nd Region. The asset was not recognized in the financial statements and the effects of the favorable final judicial decision on March 18, 2019 will be evaluated by 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

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

29. 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 benefit 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, 2018 and 2017.

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, 2018 and 2017 and the contributions made by the Company are not relevant.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Complementary Allowance (***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 complementary allowance benefit was overfunded as at December 31, 2018 and 2017.

Other benefits - The Company sponsors medical plans for employees that meet specific criteria and for employees who use the complementary allowance 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, 2018 and 2017.

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, 2018 and 2017.

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, 2016	**10,896**	**13,183**	**4,224**	**10,896**		**740**
Service costs	23	275	95	23		27
Interest costs	1,149	587	215	1,149		78
Benefits paid	(1,039)	(881)	(207)	(1,039)		(74)
Participant contributions	2	(39)		2		
Effect of changes in the actuarial assumptions	208	560	40	208		84

Translation adjustment		1,104	294			
Benefit obligation as at December 31, 2017	**11,239**	**14,789**	**4,661**	**11,239**		**855**
Acquisition					1,328	
Service costs	19	379	139	19	1	51
Interest costs	1,052	596	220	1,052	126	81
Benefits paid	(1,095)	(1,026)	(226)	(1,095)	(107)	(69)
Participant contributions	6	(43)		6	1	
Effect of changes in the actuarial assumptions	2,640	(619)	(117)	2,640	(53)	47
Translation adjustment		1,150	279			
Others						(2)
Benefit obligation as at December 31, 2018	**13,861**	**15,226**	**4,956**	**13,861**	**1,296**	**963**

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, 2016	**15,298**	**11,144**		**15,298**		
Interest income	1,639	482		1,639		
Employer contributions	121	207	207	121		74
Participant contributions	2	(39)		2		
Benefits paid	(1,039)	(881)	(207)	(1,039)		(74)
Return on plan assets (excluding interest income)	(49)	568		(49)		
Translation adjustment		1,011				
Fair value of plan assets as at December 31, 2017	**15,972**	**12,492**		**15,972**		
Acquisition					792	
Interest income	1,519	481		1,519	73	
Employer contributions	131	184	226	131	14	69
Participant contributions	6	1		6	1	
Benefits paid	(1,095)	(935)	(226)	(1,095)	(107)	(69)
Return on plan assets (excluding interest income)	1,831	(540)		1,831	(146)	
Translation adjustment		998				
Others	(9)			(9)		
Fair value of plan assets as at December 31, 2018	**18,355**	**12,681**		**18,355**	**627**	

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

	Consolidated Plans in Brazil					
	December 31, 2018			December 31, 2017		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	**4,733**			**4,402**		
Interest income	462			485		
Changes on asset ceiling	(701)			(154)		
Balance at end of the year	**4,494**			**4,733**		
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(13,861)	(1,296)	(963)	(11,239)	(1,328)	(854)
Fair value of assets	18,355	627		15,972	792	
Effect of the asset ceiling	(4,494)			(4,733)		
Liabilities		**(669)**	**(963)**		**(536)**	**(854)**
Current liabilities		(14)	(74)			(73)
Non-current liabilities		(655)	(889)		(536)	(781)
Liabilities		**(669)**	**(963)**		**(536)**	**(854)**

	Consolidated Foreign plan					
	December 31, 2018			December 31, 2017		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Amount recognized in the statement of financial position						
Present value of actuarial liabilities		(13,930)	(3,993)		(13,461)	(3,807)
Fair value of assets		12,053			11,700	
Liabilities		**(1,877)**	**(3,993)**		**(1,761)**	**(3,807)**
Current liabilities		(60)	(128)		(54)	(117)
Non-current liabilities		(1,817)	(3,865)		(1,707)	(3,690)

Liabilities		**(1,877)**	**(3,993)**		**(1,761)**	**(3,807)**

			Consolidated Total			
		December 31, 2018			December 31, 2017	
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	**4,733**			**4,402**		
Interest income	462			485		
Changes on asset ceiling	(701)			(154)		
Balance at end of the year	**4,494**			**4,733**		
Amount recognized in the statement of financial position						
Present value of actuarial liabilities	(13,861)	(15,226)	(4,956)	(11,239)	(14,789)	(4,661)
Fair value of assets	18,355	12,681		15,972	12,492	
Effect of the asset ceiling	(4,494)			(4,733)		
Liabilities		**(2,545)**	**(4,956)**		**(2,297)**	**(4,661)**
Current liabilities		(74)	(202)		(54)	(190)
Non-current liabilities		(2,471)	(4,754)		(2,243)	(4,471)
Liabilities		**(2,545)**	**(4,956)**		**(2,297)**	**(4,661)**

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Parent company Plans in Brazil				
	December 31, 2018			December 31, 2017	
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Other benefits
Balance at beginning of the year	**4,733**			**4,402**	
Interest income	462			485	
Changes on asset ceiling	(701)			(154)	
Balance at end of the year	**4,494**			**4,733**	
Amount recognized in the statement of financial position					
Present value of actuarial liabilities	(13,861)	(1,296)	(963)	(11,239)	(855)
Fair value of assets	18,355	627		15,972	
Effect of the asset ceiling	(4,494)			(4,733)	
Liabilities		**(669)**	**(963)**		**(855)**
Current liabilities		(14)	(74)		(73)
Non-current liabilities		(655)	(889)		(782)
Liabilities		**(669)**	**(963)**		**(855)**

iv. Costs recognized in the income statement

	Consolidated Year ended December 31								
	2018			2017			2016		
	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	19	379	139	23	275	95	36	267	(44)
Interest on expense on liabilities	1,052	596	220	1,149	587	215	1,256	608	231
Interest income on plan assets	(1,519)	(481)		(1,639)	(482)		(1,777)	(525)	
Interest expense on effect of (asset ceiling)/ onerous liability	462			485			541		
Total of cost, net	**14**	**494**	**359**	**18**	**380**	**310**	**56**	**350**	**187**

	Parent company Year ended December 31 2018 Overfunded pension plans	Underfunded pension plans	Other benefits	2017 Overfunded pension plans	Underfunded pension plans	Other benefits
Service cost	19	1	51	23		27
Interest on expense on liabilities	1,052	126	81	1,149		78
Interest income on plan assets	(1,519)	(73)		(1,639)		
Interest expense on effect of (asset ceiling)/ onerous liability	462			485		
Total of cost, net	**14**	**54**	**132**	**18**		**105**

v. Costs recognized in the statement of comprehensive income

	Consolidated Year ended December 31 2018 Overfunded pension plans	Underfunded pension plans	Other benefits	2017 Overfunded pension plans	Underfunded pension plans	Other benefits	2016 Overfunded pension plans	Underfunded pension plans	Other benefits
Balance at beginning of the year	**(545)**	**(1,642)**	**(626)**	**(500)**	**(1,616)**	**(523)**	**(440)**	**(1,934)**	**(369)**
Effect of changes actuarial assumptions	(2,640)	643	100	(212)	(560)	(94)	(942)	(371)	(244)
Return on plan assets (excluding interest income)	1,831	(540)	17	(4)	545		976	192	
Change of asset ceiling	701			159			(125)		
Others				(11)	1	(47)		95	
	(108)	**103**	**117**	**(68)**	**(14)**	**(141)**	**(91)**	**(84)**	**(244)**
Deferred income tax	37	(27)	(31)	23	(6)	42	31	62	60
Others comprehensive income	**(71)**	**76**	**86**	**(45)**	**(20)**	**(99)**	**(60)**	**(22)**	**(184)**
Translation adjustments		(230)	(45)		(8)	(2)		340	30
Transfers/ disposal	(24)	(16)	91		2	(2)			
Accumulated other comprehensive income	**(640)**	**(1,812)**	**(494)**	**(545)**	**(1,642)**	**(626)**	**(500)**	**(1,616)**	**(523)**

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Parent company Year ended December 31					
	2018			2017		
	Overfunded pension plans	**Underfunded pension plans**	**Other benefits**	**Overfunded pension plans**	**Underfunded pension plans**	**Other benefits**
Balance at beginning of the year	**(569)**		**(247)**	**(501)**		**(190)**
Effect of changes actuarial assumptions	(2,640)	53	(47)	(208)		(84)
Return on plan assets (excluding interest income)	1,831	(146)		(49)		
Change of asset ceiling	701			154		
Others			(1)			(2)
	(108)	**(93)**	**(48)**	**(103)**		**(86)**
Deferred income tax	37	32	17	35		29
Others comprehensive income	**(71)**	**(61)**	**(31)**	**(68)**		**(57)**
Transfers/ disposal		(297)				
Accumulated other comprehensive income	**(640)**	**(358)**	**(278)**	**(569)**		**(247)**

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 by 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 taken considering the maturity dates and therefore, in the short term they would not realize.

The following assumptions were adopted in the assessment:

	Brazil					
	December 31, 2018			December 31, 2017		
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Underfunded pension plans	Other benefits
Discount rate to determine benefit obligation	8.86% - 9.10%	9.10%	9.05% - 9.29%	9.74% - 9.85%	9.84%	9.74% - 9.91%
Nominal average rate to determine expense/ income	8.86% - 9.10%	9.10%	N/A	9.74% - 9.85%	9.84%	N/A
Nominal average rate of salary increase	4.00% - 6.08%	6.08%	N/A	4.25% - 6.34%	4.25% - 6.34%	N/A
Nominal average rate of benefit increase	4.00%	6.08%	N/A	4.85%	4.85%	N/A
Immediate health care cost trend rate	N/A	N/A	7.12%	N/A	N/A	7.38%
Ultimate health care cost trend rate	N/A	N/A	7.12%	N/A	N/A	7.38%
Nominal average rate of price inflation	4.00%	4.00%	4.00%	4.25%	4.25%	4.25%

69

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

	Foreign			
	December 31, 2018		December 31, 2017	
	Underfunded pension plans	Other benefits	Underfunded pension plans	Other benefits
Discount rate to determine benefit obligation	3.56%	3.66%	3.26%	3.44%
Nominal average rate to determine expense/ income	3.26%	N/A	3.84%	N/A
Nominal average rate of salary increase	3.20%	N/A	3.27%	N/A
Nominal average rate of benefit increase	N/A	3.00%	N/A	3.00%
Immediate health care cost trend rate	N/A	5.90%	N/A	5.99%
Ultimate health care cost trend rate	N/A	4.56%	N/A	4.56%
Nominal average rate of price inflation	2.10%	2.10%	2.10%	2.10%

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

	Consolidated			Parent company	
	December 31, 2018			December 31, 2018	
	Overfunded pension plans	Underfunded pension plans	Other benefits	Overfunded pension plans	Other benefits
Nominal discount rate - 1% increase					
Actuarial liability balance	12,825	13,403	4,956	12,825	877
Assumptions made	9.98%	5.03%	5.42%	9.98%	10.22%
Nominal discount rate - 1% reduction					
Actuarial liability balance	15,077	17,328	5,767	15,077	1,057
Assumptions made	7.98%	3.03%	3.42%	7.98%	8.22%

viii. Assets of pension plans

Brazilian plan assets as at December 31, 2018 and 2017 include respectively (i) investments in a portfolio of Vale s stock and other instruments in the amount of R$52 and R$124 and (ii) Brazilian Federal Government securities in the amount of R$16,271 and R$15,274.

Foreign plan assets as at December 31, 2018 and 2017 include Canadian Government securities in the amount of R$2,612 and R$2,858, respectively.

ix. Overfunded pension plans

Assets by category are as follows:

	Consolidated and Parent Company							
	December 31, 2018				December 31, 2017			
	Level 1	**Level 2**	**Level 3**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Total**
Debt securities - Corporate		180		180		238		238
Debt securities - Government	9,481			9,481	9,119			9,119
Investments funds - Fixed Income	9,459			9,459	8,321			8,321
Investments funds - Equity	1,744			1,744	1,755			1,755
International investments	96			96	80			80
Structured investments - Private Equity funds			615	615			648	648
Structured investments - Real estate funds			57	57			50	50
Real estate			1,314	1,314			1,206	1,206
Loans to participants			622	622			744	744
Total	**20,780**	**180**	**2,608**	**23,568**	**19,275**	**238**	**2,648**	**22,161**
Funds not related to risk plans (i)				(5,213)				(6,189)
Fair value of plan assets at end of year				**18,355**				**15,972**

(i) Financial investments not related to coverage of overfunded pension plans.

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

	Consolidated and Parent Company				
	Private equity funds	Real estate funds	Real estate	Loans to participants	Total
Balance as at December 31, 2016	**456**	**32**	**1,205**	**850**	**2,543**
Return on plan assets	117	(6)	12	92	215
Assets purchases	99	24	42	239	404
Assets sold during the year	(24)		(53)	(437)	(514)
Balance as at December 31, 2017	**648**	**50**	**1,206**	**744**	**2,648**
Return on plan assets	55		141	92	288
Assets purchases	6	7	26	853	892
Assets sold during the year	(94)		(59)	(1,067)	(1,220)
Balance as at December 31, 2018	**615**	**57**	**1,314**	**622**	**2,608**

x. Underfunded pension plans

Assets by category are as follows:

	Consolidated							
	December 31, 2018				December 31, 2017			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Cash and cash equivalents	12	70		82	13	93		106
Equity securities	4,596	8		4,604	4,511	10		4,521
Debt securities - Corporate		1,450		1,450		1,118		1,118
Debt securities - Government	448	2,635		3,083	468	2,650		3,118
Investments funds - Fixed Income	159	1,147		1,306	527			527
Investments funds - Equity		480		480	26	1,297		1,323
Structured investments - Private Equity funds			825	825	321		651	972
Real estate			196	196			147	147
Loans to participants			13	13			17	17
Others	4		638	642			643	643

Total	**5,219**	**5,790**	**1,672**	**12,681**	**5,866**	**5,168**	**1,458**	**12,492**

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

			Consolidated		
	Private equity funds	**Real estate**	**Loans to participants**	**Others**	**Total**
Balance as at December 31, 2016	**608**	**78**	**18**	**564**	**1,268**
Return on plan assets	26	3		32	61
Assets purchases	42	54			96
Assets sold during the year	(56)	(4)	(1)		(61)
Translation adjustment	31	16		47	94
Balance as at December 31, 2017	**651**	**147**	**17**	**643**	**1,458**
Return on plan assets	117	11		(55)	73
Assets purchases	80	66			146
Assets sold during the year	(81)	(37)	(4)		(122)
Translation adjustment	58	9		50	117
Balance as at December 31, 2018	**825**	**196**	**13**	**638**	**1,672**

xi. Disbursement of future cash flow

Vale expects to disburse R$483 in 2019 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, 2018	
	Overfunded pension plans	**Underfunded pension plans**	**Other benefits**
2019	1,005	859	237
2020	1,039	862	245
2021	1,071	862	252
2022	1,100	865	260
2023	1,128	868	267
2024 and thereafter	5,978	4,324	1,430

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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$1,860, R$2,490 and R$1,064 for the years ended December 31, 2018, 2017 and 2016, respectively.

c) Long-term compensation plan

For the long-term awarding of eligible executives, the Company compensation plans include 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 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 shares initially purchased by the executives have no restriction and can be sold at any time. However, if it s done before the end of the three-year-vesting period, they lose the entitlement of receiving the related award paid by Vale.

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

Liabilities of the plans are measured at fair value at every reporting period, based on market rates. Compensation costs incurred are recognized by the defined vesting period of three or four years. For the years ended December 31, 2018, 2017 and 2016 the Company recognized in the income statement the amounts of R$351, R$207 and R$120, 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 as 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 in these plans.

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

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

30. Stockholders equity

a) Share capital

As at December 31, 2018, the share capital was R$77,300 corresponding to 5,284,474,782 shares issued and fully paid without par value.

	December 31, 2018		
Stockholders	**ON**	**PNE**	**Total**
Litel Participações S.A. and Litela Participações S.A.	1,075,773,534		1,075,773,534
BNDES Participações S.A.	342,484,176		342,484,176
Bradespar S.A.	296,009,366		296,009,366
Mitsui & Co., Ltd	286,347,055		286,347,055
Foreign investors - ADRs	1,211,272,764		1,211,272,764
Foreign institutional investors in local market	1,235,808,225		1,235,808,225
FMP - FGTS	54,638,358		54,638,358
PIBB - Fund	2,300,038		2,300,038
Institutional investors	332,021,902		332,021,902
Retail investors in Brazil	289,602,980		289,602,980
Brazilian Government (Golden Share)		12	12
Outstanding shares	**5,126,258,398**	**12**	**5,126,258,410**
Shares in treasury	158,216,372		158,216,372
Total issued shares	**5,284,474,770**	**12**	**5,284,474,782**
Share capital per class of shares (in millions)	**77,300**		**77,300**
Total authorized shares	**7,000,000,000**		**7,000,000,000**

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

The Company repurchases its shares to hold in treasury for future sale or cancellation. These shares are recorded in a specific account as a reduction of stockholders´ equity at their acquisition value and carried at cost. These programs are approved by the Board of Directors with determined terms and number of 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.

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

b) Share buyback program

The Company concluded in November 2018, share buyback program for Vale s common shares and their respective ADSs approved by the Board of Directors on July 25, 2018, and repurchased a total of 71,173,683 common shares, at an average price of R$54.21 per share, for a total aggregate purchase price of R$3,858 (US$1 billion). The shares were acquired in the stock market based on regular trading conditions. The shares acquired are held in treasury for future sale or cancellation.

c) Remuneration to the Company s stockholders

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

	2018
Net income of the year	**25,657**
Appropriation to legal reserve	(1,283)
Appropriation to tax incentive reserve	(1,497)
Net income after appropriations to legal reserve and tax incentive reserve	**22,877**
Minimum mandatory remuneration (i)	5,719
Stockholders remuneration paid in September, 2018	(7,694)
Appropriation to investments reserve	(15,183)

(i) Due to the Brazilian legislation, the Company must retain and collect the amount of withholding tax (15%) and cannot be considered when charging the interest on capital to the mandatory dividend. the minimum mandatory remuneration before tax is R$6,729 based on the interest on capital.

The Company approved in March, 2018, the new policy of stockholders remuneration of the Company, approved in March 2018, which provides for a semi-annual payment of 30% of Adjusted LAJIDA (EBITDA) less sustaining capital. In September, 2018, the Company paid stockholders remuneration in the amount of R$7,694 (R$1.480361544 per share), R$6,801 based on the interest on capital and R$893 based on dividends, for the first half of 2018 approved by Board of Directors on July 25, 2018. This payment comprises the minimum mandatory remuneration for the year ended December 31, 2018.

Following the Brumadinho dam failure (as described on note 3), Vale has determined the suspension of the Shareholder Remuneration Policy and any other deliberation on shares buyback.

The remuneration paid to stockholders based on the on interest on capital and dividends during 2018 and 2017 amounted R$12,415 (R$2.388785772 per share) and R$4,667 (R$0.905571689 per share), respectively.

d) **Profit reserves**

The amount of profit reserves is distributed as follows:

	Legal reserve	Tax incentive reserve	Investments reserve	Additional remuneration reserve	Total of profit reserves
Balance as at December 31, 2016	**4,511**	**1,228**	**5,894**	**2,065**	**13,698**
Allocation of Income	881	693	11,332		12,906
Dividends and interest on capital of Vale s stockholders				(2,065)	(2,065)
Balance as at December 31, 2017	**5,392**	**1,921**	**17,226**		**24,539**
Allocation of Income	1,283	1,497	15,183		17,963
Balance as at December 31, 2018	**6,675**	**3,418**	**32,409**		**42,502**

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 50% of the annual distributable net income is retained based on the capital investments budget submitted for approval in the Stockholders Meeting, pursuant to article 196 of the Law 6,404.

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

e) Unrealized fair value gain (losses)

	Retirement benefit obligations	Fair value adjustment to investment in equity securities	Conversion shares	Total gain (losses)
Balance as at December 31, 2016	**(2,638)**		**(1,101)**	**(3,739)**
Other comprehensive income	(164)			(164)
Translation adjustment	(9)			(9)
Balance as at December 31, 2017	**(2,811)**		**(1,101)**	**(3,912)**
Other comprehensive income	142	275		417
Translation adjustment	(276)	523		247
Balance as at December 31, 2018	**(2,945)**	**798**	**(1,101)**	**(3,248)**

f) Vale s corporate governance restructuring in 2017

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 Vale class A preferred shares into common shares; (ii) amendment of Vale s by-laws, so as to adjust to Novo Mercado rules; and (iii) the merger of Valepar S.A. into Vale.

(i) Conversion of preferred shares and merger of Valepar S.A.

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

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

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

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

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

	August 14, 2017
Current assets	77
Judicial deposits	3,034
Intangible	3,073
Current liabilities	64
Provisions for litigation	2,013
Taxes payable	415
Net assets	**3,692**

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

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

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

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

g) Shareholders Agreement

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

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

Accounting policy

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

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

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

31. Related parties

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

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

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

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

a) Transactions with related parties

	Consolidated 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)**

	Consolidated Year ended December 31 2017			
	Joint Ventures	**Associates**	**Major stockholders**	**Total**
Net operating revenue	1,265	1,079	467	**2,811**

Cost and operating expenses	(6,211)	(98)	(92)	**(6,401)**
Financial result	376	(66)	(2,648)	**(2,338)**

	Consolidated Year ended December 31 2016			
	Joint Ventures	**Associates**	**Major stockholders**	**Total**
Net operating revenue	557	1,199	482	**2,238**
Cost and operating expenses	(3,123)	(180)	(120)	**(3,423)**
Financial result	(95)	(2)	(2,993)	**(3,090)**

Net operating revenue relates to sale of iron ore to the steelmakers and right to use capacity on railroads. Cost and operating expenses mostly relate to the operational leases of the pelletizing plants.

b) Outstanding balances with related parties

	Consolidated							
	December 31, 2018				**December 31, 2017**			
	Joint Ventures	**Associates**	**Major stockholders**	**Total**	**Joint Ventures**	**Associates**	**Major stockholders**	**Total**
Assets								
Cash and cash equivalents			4,867	**4,867**			2,716	**2,716**
Accounts receivable	426	163	12	**601**	242	182	10	**434**
Dividends receivable	511			**511**	371	48		**419**
Loans	7,657			**7,657**	14,972			**14,972**
Derivatives financial instruments			1,151	**1,151**			944	**944**
Other assets	96			**96**	57			**57**
Liabilities								
Supplier and contractors	854	80	94	**1,028**	636	117	667	**1,420**
Loans		5,136	10,268	**15,404**		4,119	14,984	**19,103**
Derivatives financial instruments			433	**433**			361	**361**
Other liabilities	2,978			**2,978**	2,023		53	**2,076**

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Major stockholders

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

Coal segment transactions

In March 2018, Nacala BV, a joint venture between Vale and Mitsui on the Nacala s logistic corridor, closed the project financing and repaid a portion of the shareholders loans from Vale, in the amount of R$8,434 (US$2,572 million). The outstanding receivable of R$7,657 carries interest at 7.44% p.a.

The loan from associates mainly relates to the loan from Pangea Emirates Ltd, part of the group of shareholders which owns 15% interest on Vale Moçambique which carries interest at 6.54% p.a.

c) The key management personnel remuneration

	Year ended December 31		
	2018	**2017**	**2016**
Short-term benefits			
Wages	28	29	29
Direct and indirect benefits	36	33	15
Profit sharing program (PLR)	31	24	
	95	**86**	**44**
Long-term benefits			
Shares based	**10**	**16**	**2**
Severance	**68**	**64**	**15**
	173	**166**	**61**

The amounts described above include the Board of Directors and the Executive Officers.

32. Commitments

a) Contractual obligations

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

	2019	2020	2021	2022	2023 and thereafter	Total
Operating lease	969	779	731	641	6,556	9,676
Purchase obligations	10,373	5,597	2,125	1,796	8,502	28,393
Total minimum payments required	**11,342**	**6,376**	**2,856**	**2,437**	**15,058**	**38,069**

Operating lease - The Company has operating lease agreements in place with third parties related to port structures and port operations, transportation services, energy plants and property leases for its operational facilities.

Vale also has long-term agreements for the exploration and processing of iron ore with its joint ventures, such as the agreements to lease pelletizing plants in Brazil. The leases have varying terms and on renewal, the terms of the leases are renegotiated. The minimum future payments have been calculated considering the non-cancellable period of the lease agreements.

The total amount of operational leasing expenses for the year ended on December 31, 2018, 2017 and 2016 were R$4,045, R$2,663 and R$1,734, respectively.

Purchase obligations - Mainly relate to agreements for the acquisition of fuel, energy and the acquisition of raw materials and services.

b) Guarantees provided

As of December 31, 2018, corporate guarantees provided by Vale (within the limit of its direct or indirect interest) for the companies Norte Energia S.A. and Companhia Siderúrgica do Pecém S.A. were R$1,283 and R$5,440, respectively.

The net book value of property, plant and equipment pledged to secure judicial claims on December 31, 2018 and 2017 were R$22 and R$50, respectively.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

c) Nickel Operations Indonesia

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

33. Risk management

Vale considers that an effective risk management is key to achieve the Company s objectives and to ensure people and environmental safety, financial stability and flexibility of the Company as well as the going concern of its business.

Therefore, Vale has developed its risk management strategy in order to provide an integrated approach of the risks that the company is exposed to, considering not only the risks generated by variables traded in financial markets (market risk) and those arising from liquidity risk, but also risk from counterparties obligations (credit risk); those that are related to governance, business model and external environment (strategic risks); risks relating to inadequate or failed internal processes, people, health, safety, environmental and social (operational risk); information security (cybernetic risk) and internal and external compliance (compliance risk).

a) Corporate risk management policy

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

This policy determines that the first line of defense, that is, the owners of the control activities related to the identified risks and testing assignees of the business units, projects, administrative and support are direct responsible for identifying, assessing, remediating, monitoring and managing risk events under an integrated approach.

The Executive Risk Management Committee is the main body of the risk management structure, and is responsible to provide recommendations regarding Vale s Risk Management System and to support the Executive Board on the risk monitoring activities and with the related deliberations needed on its corporate management.

The Executive Board is in-charge for the approval of the policy deployment into rules and responsibilities directed to management and control of risks through issuing of internal normative documents.

Internal normative documents related risk management complement the corporate risk management policy and define practices, processes, controls, roles and assignments.

b) Liquidity risk management

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

See note 21 Loans, borrowings and cash and cash equivalent for details on the Company s liquidity risk.

c) Credit risk management

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

(i) Commercial credit risk management

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

(ii) Treasury credit risk management

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

Furthermore, the Company controls the portfolio diversification and monitors different indicators of solvency and liquidity of the different counterparties that were approved for trading.

d) Market risk management

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

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

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

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

Foreign exchange and interest rate risk

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

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

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

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

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

Risk of product and input prices

Vale is also exposed to market risks related to volatility in commodity and input prices. In accordance with risk management policy, risk mitigation strategies involving commodities may be used to reduce Vale s cash flow volatility. The risk mitigation strategy may incorporate derivative instruments, predominantly forwards, futures and options.

e) Strategic risk management

Vale addresses the risks related to the execution of established business strategies considering the internal and external environment, as well as risks related to internal procedures and conduct consistent with the Company s values, mission and strategic objectives.

f) Operational risk management

Vale acts managing operational risks primarily guaranteeing the satisfactory management of health, safety and the environment, but also acts preventing material losses, maintenance of its productive capacity and good relationship with communities.

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

g) Cybernetic risk management

Vale invests in information security technology to mitigate risks of theft, breach or violation of information privacy, availability of its technology assets and data integrity on the Company s systems.

h) Compliance risk management

Vale manage risks associated with the ongoing compliance with legal requirements, standards and other regulations related to the Company s business, including the standards required on reporting and disclosing information to the market.

i) Capital management

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

j) Insurance

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

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

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

34. Additional information about derivatives financial instruments

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

The following tables detail the derivatives positions for Vale and its controlled companies as of December 31, 2018, with the following information: notional amount, fair value including credit risk, gains or losses in the period, value at risk and the fair value breakdown by year of maturity.

a) Foreign exchange and interest rates derivative positions

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

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

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

	Notional				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year		
Flow	**December 31, 2018**	**December 31, 2017**	**Index**	**Average rate**	**December 31, 2018**	**December 31, 2017**	**December 31, 2018**	**December 31, 2018**	**2019**	**2020**	**2021+**

CDI vs. US$ fixed rate swap					(178)	(108)	(83)	23	(49)	(82)	(47)
Receivable	R$ 1,581	R$ 3,540	CDI	98.70%							
Payable	US$ 456	US$ 1.104	Fix	3.12%							
TJLP vs. US$ fixed rate swap					(1,433)	(1,262)	(374)	76	(1,185)	(82)	(166)
Receivable	R$ 2,303	R$ 2,982	TJLP +	1.20%							
Payable	US$ 994	US$ 1.323	Fix	1.54%							
TJLP vs. US$ floating rate swap					(215)	(175)	(21)	7	(215)		
Receivable	R$ 181	R$ 216	TJLP +	0.84%							
Payable	US$ 107	US$ 123	Libor +	-1.24%							
R$ fixed rate vs. US$ fixed rate swap					(36)	80	34	73	35	180	(251)
Receivable	R$ 1,078	R$ 1,158	Fix	7.05%							
Payable	US$ 351	US$ 385	Fix	-0.62%							
IPCA vs. US$ fixed rate swap					(310)	(113)		28	(127)	(40)	(143)
Receivable	R$ 1,315	R$ 1,000	IPCA +	6.55%							
Payable	US$ 434	US$ 434	Fix	3.98%							
IPCA vs. CDI swap					344	280	11	1	20	186	138
Receivable	R$ 1,350	R$ 1,350	IPCA +	6.62%							
Payable	R$ 1,350	R$ 1,350	CDI	98.59%							

(ii) Protection program for EUR denominated debt instruments

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

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

Flow	Notional December 31, 2018	Notional December 31, 2017	Index	Average rate	Fair value December 31, 2018	Fair value December 31, 2017	Financial Settlement Inflows (Outflows) December 31, 2018	Value at Risk December 31, 2018	Fair value by year 2019	2020	2021+
EUR fixed rate vs. US$ fixed rate swap					**(2)**	**76**	**(14)**	**30**	**(20)**	**(17)**	**35**
Receivable	500	500	Fix	3.75%							
Payable	US$ 613	US$ 613	Fix	4.29%							

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

b) Commodities derivative positions

(i) Bunker Oil purchase cash flows protection program

In order to reduce the impact of bunker oil price fluctuation on maritime freight hiring/supply and, consequently, reducing the company s cash flow volatility, bunker oil hedging transactions were implemented, through options contracts.

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

Flow	Notional (ton) December 31, 2018	Notional (ton) December 31, 2017	Bought / Sold	Average strike (US$/ton)	Fair value December 31, 2018	Fair value December 31, 2017	Financial settlement Inflows (Outflows) December 31, 2018	Value at Risk December 31, 2018	Fair value by year 2019
Call options	2,100,000		B	520	4		153	2	4
Put options	2,100,000		S	297	(115)		34	36	(115)
Total					**(111)**		**187**	**38**	**(111)**

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

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

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

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

	Notional (ton)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year	
Flow	**December 31, 2018**	**December 31, 2017**	**Bought / Sold**	**Average strike (US$/ton)**	**December 31, 2018**	**December 31, 2017**	**December 31, 2018**	**December 31, 2018**	**2019**	**2020+**
Fixed price sales protection										
Nickel forwards	7,244	9,621	B	12,166	(39)	80	24	9	(31)	(8)
Raw material purchase protection										
Nickel forwards	120	292	S	12,242	1	(1)	(1)		1	
Copper forwards	81	79	S	6,142						
Total					**(38)**	**79**	**23**	**9**	**(30)**	**(8)**

c) Freight derivative positions

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

	Notional (days)				Fair value		Financial Settlement Inflows (Outflows)	Value at Risk	Fair value by year
Flow	**December 31, 2018**	**December 31, 2017**	**Bought / Sold**	**Average strike (US$/day)**	**December 31, 2018**	**December 31, 2017**	**December 31, 2018**	**December 31, 2018**	**2019**
Freight forwards	480		B	14,509	**3**		**(13)**	**1**	**3**

83

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

d) Wheaton Precious Metals Corp. warrants

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

	Notional (quantity)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
Flow	December 31, 2018	December 31, 2017	Bought / Sold	Average strike (US$/share)	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2018	2023
Call options	10,000,000	10,000,000	B	44	32	128		4	32

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

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

	Notional (quantity)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
Flow	December 31, 2018	December 31, 2017	Bought / Sold	Average strike (R$/share)	December 31, 2018	December 31, 2017	December 31, 2018	December 31, 2018	2027
Conversion options	140,239	140,239	S	8,006	(228)	(188)		14	(228)

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

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

It this case, the Company could settle through cash or shares.

Flow	Notional (quantity, in millions) December 31, 2018	December 31, 2017	Bought / Sold	Average strike (R$/share)	Fair value December 31, 2018	December 31, 2017	Financial settlement Inflows (Outflows) December 31, 2018	Value at Risk December 31, 2018	Fair value by year 2019+
Options	2,139	2,139	B/S	1.7	1,082	831		59	1,082

g) Embedded derivatives in contracts

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

Flow	Notional (ton) December 31, 2018	December 31, 2017	Bought / Sold	Average strike (US$/ton)	Fair value December 31, 2018	December 31, 2017	Value at Risk December 31, 2018	Fair value by year 2019
Nickel forwards	3,763	2,627	S	11,289	6	3	5	6
Copper forwards	2,035	2,718	S	6,172	1		1	1
Total					**7**	**3**	**6**	**7**

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

Flow	Notional (volume/month) December 31, 2018	December 31, 2017	Bought / Sold	Average strike (US$/ton)	Fair value December 31, 2018	December 31, 2017	Financial settlement Inflows (Outflows) December 31, 2018	Value at Risk December 31, 2018	Fair value by year 2019	2020+
Call options	746,667	746,667	S	233	(4)	(6)		3		(4)

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

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

	Notional (quantity)				Fair value		Financial settlement Inflows (Outflows)	Value at Risk	Fair value by year
Flow	**December 31, 2018**	**December 31, 2017**	**Bought / Sold**	**Average strike (R$/share)**	**December 31, 2018**	**December 31, 2017**	**December 31, 2018**	**December 31, 2018**	**2019+**
Put option	1,105,070,863	1,105,070,863	S	3.88	(400)	(439)		41	(400)

h) Sensitivity analysis of derivative financial instruments

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

- *Probable*: the probable scenario was based on the risks listed below and instruments were developed based on data from B3, Central Bank of Brazil, London Metals Exchange and Bloomberg.

- *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	(178)	(597)	(1,016)
	US$ interest rate inside Brazil decrease	(178)	(192)	(207)
	Brazilian interest rate increase	(178)	(177)	(177)
Protected item: R$ denominated debt	R$ depreciation	n.a.		

TJLP vs. US$ fixed rate swap	R$ depreciation	(1,433)	(2,378)	(3,324)
	US$ interest rate inside Brazil decrease	(1,433)	(1,463)	(1,494)
	Brazilian interest rate increase	(1,433)	(1,469)	(1,503)
	TJLP interest rate decrease	(1,433)	(1,469)	(1,505)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
TJLP vs. US$ floating rate swap	R$ depreciation	(215)	(316)	(418)
	US$ interest rate inside Brazil decrease	(215)	(218)	(221)
	Brazilian interest rate increase	(215)	(217)	(220)
	TJLP interest rate decrease	(215)	(218)	(220)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
R$ fixed rate vs. US$ fixed rate swap	R$ depreciation	(36)	(329)	(623)
	US$ interest rate inside Brazil decrease	(36)	(70)	(107)
	Brazilian interest rate increase	(36)	(99)	(156)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
IPCA vs. US$ fixed rate swap	R$ depreciation	(310)	(751)	(1,192)
	US$ interest rate inside Brazil decrease	(310)	(323)	(337)
	Brazilian interest rate increase	(310)	(335)	(360)
	IPCA index decrease	(310)	(325)	(339)
Protected item: R$ denominated debt	R$ depreciation	n.a.		
IPCA vs. CDI swap	Brazilian interest rate increase	344	276	212
	IPCA index decrease	344	307	270
Protected item: R$ denominated debt linked to IPCA	IPCA index decrease	n.a.	(307)	(270)
EUR fixed rate vs. US$ fixed rate swap	EUR depreciation	(2)	(660)	(1,317)
	Euribor increase	(2)	(23)	(44)
	US$ Libor decrease	(2)	(63)	(126)
Protected item: EUR denominated debt	EUR depreciation	n.a.	660	1,317

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

Instrument	Instrument s main risk events	Probable	Scenario I	Scenario II
Bunker Oil protection				
Options	Bunker Oil price decrease	(111)	(486)	(1,098)
Protected item: Part of costs linked to bunker oil prices	Bunker Oil price decrease	n.a.	486	1,098
Maritime Freight protection				
Forwards	Freight price decrease	3	(5)	(12)
Protected item: Part of costs linked to maritime freight prices	Freight price decrease	n.a.	5	12
Nickel sales fixed price protection				
Forwards	Nickel price decrease	(39)	(112)	(185)
Protected item: Part of nickel revenues with fixed prices	Nickel price fluctuation	n.a.	112	185
Purchase protection program				
Nickel forwards	Nickel price increase	1		(2)
Protected item: Part of costs linked to nickel prices	Nickel price increase	n.a.		2
Copper forwards	Copper price increase			(1)
Protected item: Part of costs linked to copper prices	Copper price increase	n.a.		1
Wheaton Precious Metals Corp. warrants	WPM stock price decrease	31	9	
Conversion options - VLI	VLI stock value increase	(228)	(364)	(536)
Options - MBR	Iron ore price decrease	1,082	721	405

Instrument	Main risks	Probable	Scenario I	Scenario II
Embedded derivatives - Raw material purchase (nickel)	Nickel price increase	7	(33)	(72)
Embedded derivatives - Raw material purchase (copper)	Copper price increase	1	(11)	(23)
Embedded derivatives - Gas purchase	Pellet price increase	(4)	(9)	(19)
Embedded derivatives - Guaranteed minimum return (VLI)	VLI stock value decrease	(399)	(889)	(1,712)

i) Financial counterparties ratings

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

The table below presents the ratings published by agencies Moody s and S&P regarding the main financial institutions that we had outstanding positions as of December 31, 2018.

Long term ratings by counterparty	Moody s	S&P
ANZ Australia and New Zealand Banking	Aa3	AA-
Banco ABC	Ba3	BB-
Banco Bradesco	Ba3	BB-
Banco do Brasil	Ba3	BB-
Banco de Credito del Peru	Baa1	BBB+
Banco do Nordeste	Ba3	BB-
Banco Safra	Ba3	BB-
Banco Santander	A2	A
Banco Votorantim	Ba3	BB-
Bank of America	A3	A-
Bank of China	A1	A
Bank of Mandiri	Baa2	BB+
Bank of Nova Scotia	Aa2	A+
Bank Rakyat	Baa2	BB+
Bank of Tokyo Mitsubishi UFJ	A1	A-
Banpará		BB-
Barclays	Baa3	BBB
BBVA	A3	A-
BNP Paribas	Aa3	A
BTG Pactual	Ba3	BB-
Caixa Economica Federal	Ba3	BB-
Canadian Imperial Bank	Aa2	A+
China Construction Bank	A1	A
CIMB Bank	A3	A-
Citigroup	Baa1	BBB+

Long term ratings by counterparty	Moody s	S&P
Credit Agricole	A1	A+
Credit Suisse	Baa2	BBB+
Deutsche Bank	A3	BBB+
Goldman Sachs	A3	BBB+
HSBC	A2	A
Intesa Sanpaolo Spa	Baa1	BBB
Itaú Unibanco	Ba3	BB-
JP Morgan Chase & Co	A2	A-
Macquarie Group Ltd	A3	BBB
Mega Int. Commercial Bank	A1	A
Mizuho Financial	A1	A-
Morgan Stanley	A3	BBB+
National Australia Bank NAB	Aa3	AA-
National Bank of Canada	Aa3	A
National Bank of Oman	Baa3	
Natixis	A1	A+

Rabobank	Aa3	A+
Royal Bank of Canada	Aa2	AA-
Societe Generale	A1	A
Standard Bank Group	Ba1	
Standard Chartered	A2	BBB+
Sumitomo Mitsui Financial	A1	A-
UBS	Aa3	A-
Unicredit	Baa1	BBB

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

j) Market curves

(i) Products

Nickel

Maturity	Price (US$/ton)	Maturity	Price (US$/ton)	Maturity	Price (US$/ton)
SPOT	10,595	JUN19	10,777	DEC19	10,943
JAN19	10,637	JUL19	10,809	DEC20	11,231
FEB19	10,663	AUG19	10,838	DEC21	11,516
MAR19	10,692	SEP19	10,865	DEC22	11,799
APR19	10,720	OCT19	10,891		
MAY19	10,749	NOV19	10,916		

Copper

Maturity	Price (US$/lb)	Maturity	Price (US$/lb)	Maturity	Price (US$/lb)
SPOT	2.63	JUN19	2.71	DEC19	2.70
JAN19	2.71	JUL19	2.70	DEC20	2.70
FEB19	2.71	AUG19	2.70	DEC21	2.69
MAR19	2.71	SEP19	2.70	DEC22	2.70
APR19	2.71	OCT19	2.70		
MAY19	2.71	NOV19	2.70		

Bunker Oil

Maturity	Price (US$/ton)	Maturity	Price (US$/ton)	Maturity	Price (US$/ton)
SPOT	334	JUN19	307	DEC19	270
JAN19	327	JUL19	302	DEC20	267

FEB19	322	AUG19	297	DEC21	238
MAR19	319	SEP19	291	DEC22	213
APR19	315	OCT19	283		
MAY19	311	NOV19	276		

Maritime Freight (Capesize 5TC)

Maturity	Price (US$/day)	Maturity	Price (US$/day)	Maturity	Price (US$/day)
SPOT	14,797	JUN19	15,096	DEC19	20,350
JAN19	16,175	JUL19	16,817	Cal 2020	15,613
FEB19	12,225	AUG19	16,817	Cal 2021	13,350
MAR19	13,233	SEP19	16,817	Cal 2022	13,433
APR19	13,521	OCT19	20,350		
MAY19	13,896	NOV19	20,350		

(ii) Foreign exchange and interest rates

US$-Brazil Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
02/01/19	4.24	12/02/19	3.61	04/01/22	3.68
03/01/19	3.83	01/02/20	3.60	07/01/22	3.73
04/01/19	3.55	04/01/20	3.63	10/03/22	3.69
05/02/19	3.50	07/01/20	3.64	01/02/23	3.73
06/03/19	3.47	10/01/20	3.64	04/03/23	3.74
07/01/19	3.48	01/04/21	3.67	07/03/23	3.72
08/01/19	3.52	04/01/21	3.66	10/02/23	3.74
09/02/19	3.47	07/01/21	3.65	01/02/24	3.82
10/01/19	3.53	10/01/21	3.67	07/01/24	3.73
11/01/19	3.60	01/03/22	3.67	01/02/25	3.85

US$ Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	2.52	6M	2.78	11M	2.78
2M	2.62	7M	2.78	12M	2.78
3M	2.79	8M	2.78	2Y	2.71
4M	2.79	9M	2.78	3Y	2.67
5M	2.79	10M	2.78	4Y	2.69

Table of Contents

Notes to the Financial Statements

Expressed in millions of Brazilian reais, unless otherwise stated

TJLP

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
02/01/19	6.98	12/02/19	6.98	04/01/22	6.98
03/01/19	6.98	01/02/20	6.98	07/01/22	6.98
04/01/19	6.98	04/01/20	6.98	10/03/22	6.98
05/02/19	6.98	07/01/20	6.98	01/02/23	6.98
06/03/19	6.98	10/01/20	6.98	04/03/23	6.98
07/01/19	6.98	01/04/21	6.98	07/03/23	6.98
08/01/19	6.98	04/01/21	6.98	10/02/23	6.98
09/02/19	6.98	07/01/21	6.98	01/02/24	6.98
10/01/19	6.98	10/01/21	6.98	07/01/24	6.98
11/01/19	6.98	01/03/22	6.98	01/02/25	6.98

BRL Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
02/01/19	6.41	12/02/19	6.53	04/01/22	8.17
03/01/19	6.42	01/02/20	6.55	07/01/22	8.35
04/01/19	6.43	04/01/20	6.70	10/03/22	8.43
05/02/19	6.44	07/01/20	6.91	01/02/23	8.53
06/03/19	6.44	10/01/20	7.16	04/03/23	8.64
07/01/19	6.45	01/04/21	7.36	07/03/23	8.70
08/01/19	6.46	04/01/21	7.59	10/02/23	8.79
09/02/19	6.46	07/01/21	7.77	01/02/24	8.86
10/01/19	6.49	10/01/21	7.95	07/01/24	8.98
11/01/19	6.52	01/03/22	8.08	01/02/25	9.10

Implicit Inflation (IPCA)

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
02/01/19	3.74	12/02/19	3.87	04/01/22	4.03
03/01/19	3.75	01/02/20	3.88	07/01/22	4.12
04/01/19	3.77	04/01/20	3.81	10/03/22	4.11
05/02/19	3.78	07/01/20	3.88	01/02/23	4.14

06/03/19	3.78	10/01/20	3.90	04/03/23	4.18
07/01/19	3.79	01/04/21	3.93	07/03/23	4.19
08/01/19	3.79	04/01/21	3.98	10/02/23	4.22
09/02/19	3.79	07/01/21	4.01	01/02/24	4.25
10/01/19	3.83	10/01/21	4.04	07/01/24	4.30
11/01/19	3.85	01/03/22	4.05	01/02/25	4.35

EUR Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	(0.41)	6M	(0.28)	11M	(0.24)
2M	(0.38)	7M	(0.26)	12M	(0.23)
3M	(0.36)	8M	(0.25)	2Y	(0.17)
4M	(0.32)	9M	(0.25)	3Y	(0.08)
5M	(0.29)	10M	(0.24)	4Y	0.05

CAD Interest Rate

Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)	Maturity	Rate (% p.a.)
1M	2.30	6M	2.34	11M	1.24
2M	2.29	7M	2.00	12M	1.13
3M	2.31	8M	1.74	2Y	2.29
4M	2.32	9M	1.54	3Y	2.31
5M	2.33	10M	1.37	4Y	2.35

Currencies - Ending rates

CAD/US$	0.7341	US$/BRL	3.8748	EUR/US$	1.1452

Table of Contents

Signatures

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

		Vale S.A. (Registrant)
	By:	/s/ André Figueiredo
Date: March 27, 2019		Director of Investor Relations