In Europe, levels of economic activity entered a slower growth trajectory, as the war between Russia and Ukraine, political tensions within the Eurozone and the effects of the United Kingdom formally leaving the European Union on January 31, 2020, or Brexit, continue (see “Item 3. Key Information—D. Risk Factors—Risks Relating to Brazil—We may be impacted by volatility in the global financial markets”). In the United States, it is unclear the degree to which current political divisions in the country will continue throughout the current four-year presidential term of President Biden, as well as the policies that will be adopted by the current administration and the effects of any such policies, if implemented.

Exchange Rates

In relation to foreign exchange, the Brazilian *real* appreciated 6.5% compared to the U.S. dollar in 2022, primarily as a result of the impact of uncertainties regarding inflation in the United States and external factors such as the ongoing war between Russia and Ukraine. There can be no assurance that the *real* will appreciate or depreciate against the U.S. dollar or other currencies in the future.

In the past, the Brazilian government has implemented various economic plans and utilized a number of exchange rate policies, including sudden devaluations, periodic mini-devaluations during which the frequency of adjustments ranged from a daily to a monthly basis, floating exchange rate systems, exchange controls and dual exchange rate markets. Since 1999, the Central Bank has allowed the *real*/U.S. dollar exchange rate to float freely, and, since that time, the *real*/U.S. dollar exchange rate has fluctuated considerably. We cannot predict whether the Central Bank or the Brazilian government will continue to let the *real* float freely or intervene in the exchange rate market by returning to a currency band system or otherwise. The *real* may depreciate or appreciate substantially against the U.S. dollar.

During the first part of 2023, the *real* appreciated as compared to the U.S. dollar. On April 27, 2023, the selling *real*/dollar exchange rate was R$5.015 to U.S.$1.00. The *real*/dollar exchange rate fluctuates and, therefore, the selling rate on April 27, 2023 may not be indicative of future exchange rates.

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Summary of Risk Factors

This section is intended to be a summary of more detailed discussions contained elsewhere in this annual report. The risks described below are not the only ones we face. Our business, results of operations or financial condition could be harmed if any of these risks materializes and, as a result, the trading price of our shares and our ADSs could decline.

Summary of Risks Relating to our Business

- We may be unable to successfully implement our business strategy.
- Future partnerships or joint ventures that we enter into may not bring the expected financial results and could cause harm to our image as well as financial costs.

- Any acquisitions or investments in other companies, products, or technologies could require significant management attention, disrupt our business, dilute stockholder value, and adversely affect our operating results.
- We face various risks related to health epidemics, pandemics and outbreaks, such as COVID-19, which may have material adverse effects on our business, financial condition, results of operations and cash flows.
- We face increasing competition from other providers and services, which may adversely affect our results of operations.
- Our operations depend on our ability to efficiently operate our systems and controls that are subject to failure that could affect our business and our reputation.
- We face various cyber-security risks that, if not adequately addressed, could have an adverse effect on our business.
- Our operations could be suspended or interrupted as a result of natural or man-made disasters or other unexpected events, such as those related to climate change.
- We may be unable to implement our plans to expand and enhance our existing networks in Brazil in a timely manner or without unanticipated costs, which could hinder or prevent the successful implementation of our business plan and adversely affect our results of operations.
- We depend on key suppliers, certain inputs and contractual relationships with other telecommunications providers which are critical to our ability to provide telecommunications services to our customers or may have a material adverse effect on our operations.

Summary of Risks Relating to the Brazilian Telecommunications Industry

- Anatel classified us as an economic group with significant market power in some markets and we are now subject to increased regulation.
- The Brazilian government under certain circumstances may terminate our authorizations or we may not receive renewals of our authorizations.

Summary of Risks Relating to Brazil

- Risks related to Brazilian economic and political conditions may negatively affect our business.
- The Brazilian government has exerted significant influence over the Brazilian economy and continues to do so. This involvement may have an adverse effect on our activities, our business and on the market prices of our shares and ADSs.
- Changes in Brazilian tax laws may have an adverse impact on the taxes applicable to our business and over our prices.

Summary of Risks Relating to our Common Shares and the ADSs

- Our controlling shareholder has power over the direction of our business.
- Holders of our ADSs are not entitled to attend shareholders’ meetings and may only vote through the depositary.
- Holders of our ADSs or common shares in the United States may not be entitled to participate in future preemptive rights offerings.

- Cash dividends, interest on shareholders' equity and other cash distributions, as well as judgments seeking to enforce our obligations in respect of our shares or ADSs in Brazil will be payable only in *reais*.
- Holders of ADSs or common shares could be subject to Brazilian income tax on capital gains from sales of ADSs or common shares.
- An exchange of ADSs for common shares risks loss of certain foreign currency remittance and Brazilian tax advantages.

Risks Relating to our Business

We may be unable to successfully implement our business strategy.

Our business will be adversely affected if we are unable to successfully implement our strategic objectives and factors beyond our control may prevent us from doing so.

Our business strategy aims to increase cash-flow generation to support new avenues of growth and increase shareholder returns and can be divided into two key focuses: (1) *Core*, being our mobile and broadband business; and (2) *Beyond connectivity* being our business-to-business (B2B) / Internet of Things (IoT) and customer platform strategy.

Strengthening our *core* business requires managing and expanding our infrastructure, including with the deployment of new technologies such as 5G and the integration of the assets we acquired from Oi Mobile. Additionally, our *Core* strategy requires successfully monetizing our mobile customer base and expanding our fixed broadband business.

Alongside *Core*, we implement a strategy of *Beyond Connectivity*, where our principal goal is to attract and expand partnerships that can offer exponential growth opportunities, while scaling-up our B2B and IoT presence.

Our ability to implement our strategy is influenced by many factors partially or completely outside our control, including:

- an increase in the number of competitors due to the entrance of new market participants and/or the improvement in financial strength of existing players in the telecommunication sector that could reduce our market share;
- increased competition from mobile virtual network operators which offer telecommunication services to customers by leasing network capacity from traditional network providers, without their own network infrastructure;
- increased competition in our main markets that could force us to reduce the prices we charge for our services in order to compete effectively;
- our ability to strengthen our competitive position in the Brazilian mobile telecommunications market;
- increased competition from global and local OTT (Over The Top), providers who offer content and services using the internet, including voice calls and messaging, without owning network infrastructure;
- our ability to efficiently operate and grow our broadband business alongside our original business as a mobile network operator (MNO);
- we may be unsuccessful migrating our FTTC (Fiber to the Curb) broadband legacy customers to FTTH (Fiber to the Home) technology in an efficient manner and within the planned time frame, including due to technical or competitive issues;

- pursuant to our fixed broadband asset-light strategy, we may be unable to reach our FTTH coverage rollout plan since we are dependent on the network infrastructure capacity available to us, and if the network infrastructure is not deployed as currently expected, our rollout plan will be affected;
- our ability to successfully capture the economic value of investments and partnerships in IoT, particularly in B2B settings, including our ability to successfully transition from pilot programs to developing products and services that can generate profit at scale;
- our ability to find and partner with IoT providers, given the fragmented IoT market and the limited number of established providers, as well as the complexity of integrating multi-vendor solutions, including data privacy risks;
- our ability to select the right business partners for undertaking our customer platform strategy;
- our ability to develop and introduce new and innovative technologies that are received favorably by the market, and which enable us to provide value-added services that encourage the use of our network;
- controls and system technology failures, which could negatively affect our revenues and reputation;
- the introduction of transformative technologies that could be difficult for us to keep pace with and which could cause significant decreases in our revenue;
- the increasing network capacity demand and therefore our ability to manage the continuous growth of mobile data traffic, which in turn requires further investments in infrastructure or the acquisition of additional radio frequencies in order to maintain network quality, especially in large cities, where population density is higher and the costs of network expansion are considerably high;
- the development and expansion of NGSO satellite internet (Non-Geostationary-Satellite Orbit), which may offer significant market and product opportunities in the telecommunications sector by offering broad wide-range coverage at high speed while also disrupting the business of existing providers;
- our ability to operate efficiently and to pay or refinance our debt as it comes due, particularly in light of political and economic conditions in Brazil and uncertainties in credit and capital markets;
- our ability to most efficiently scale our structure;
- our ability to attract and retain qualified personnel;
- performance of third-party service providers and key suppliers on which we depend, such as any difficulties we may encounter in our supply and procurement processes, including as a result of the insolvency or financial weakness of our suppliers;
- government policy and changes in the regulatory environment or legal framework in Brazil;
- the effect of exchange rate and inflation fluctuations;
- the outcome of litigation, disputes and investigations in which we are involved or may become involved;
- the costs we may incur due to unexpected events, including in situations where our insurance is not sufficient to cover such costs;
- large scale adverse events that could cause negative effects, requiring a long recovery period, or which may permanently impact the socioeconomic environment, such as natural disasters, political instability, or pandemics; and

- the real possibility of an increase in taxes by state governments and the Brazilian Federal Government in order to balance their financial deficits or to respond to climate change and changes in energy generation.

As a result of these uncertainties, there can be no assurance that our strategic objectives can effectively be attained in the manner and within the time frame described.

Future partnerships or joint ventures that we enter into may not bring the expected financial results and could cause harm to our image as well as financial costs

We may enter into relationships with other businesses in order to expand our platform, which could involve preferred or exclusive licenses, additional channels of distribution, or discount pricing or investments in other companies. Negotiating these transactions can be time-consuming, difficult, and expensive, and our ability to close these transactions may be subject to third-party approvals, such as government regulatory approvals, which are beyond our control. Consequently, we can make no assurance that these transactions, once undertaken and announced, will close.

Furthermore, our established partnerships are subject to common litigation risks and we can make no assurance that these established partnerships or future partnerships will not become involved in any type of dispute. We may also be required to initiate litigation to protect our interests, including, among others, to enforce our intellectual property rights arising from our investment and development of new technologies as part of such partnerships or joint ventures.

Any acquisitions or investments in other companies, products, or technologies could require significant management attention, disrupt our business, dilute stockholder value, and adversely affect our operating results.

Our business strategy has included, and may in the future include, acquiring other complementary products, technologies, or businesses. We evaluate and expect in the future to evaluate potential strategic acquisitions of, and partnerships or joint ventures with, complementary businesses, services or technologies. However, we cannot assure you that any benefits will materialize, and we may suffer losses in connection to the used funds and to the opportunity costs related to such transactions.

Acquisitions or investments may result in unforeseen operating difficulties and expenditures and we may not achieve the anticipated benefits from certain acquisition, partnership and joint venture due to a number of factors, including:

- inability to integrate or benefit from businesses, services, customers or technologies that we acquire or with which we form a partnership or joint venture in a profitable manner;
- unanticipated costs or liabilities associated with the acquisition;
- inability to finance any businesses, services or technologies that we acquire or with which we form a partnership or joint venture;
- difficulty integrating the accounting systems, operations, and personnel of the acquired business;
- difficulties and additional expenses associated with supporting legacy products and hosting infrastructure of the acquired business;
- diversion of management’s time and resources from other core business concerns;
- adverse effects to our existing business relationships with business partners and customers as a result of the acquisition;
- the potential loss of key employees; and
- use of resources that are needed in other parts of our business.

In addition, we may not be successful in identifying acquisition, partnership and joint venture targets or our competitors may be willing or able to pay more than us for acquisitions, which may cause us to lose certain acquisitions that we would otherwise desire to complete.

Also, to the extent we pay the purchase price of any acquisition in cash, it would reduce our cash reserves, and to the extent the purchase price is paid with our common shares, it could be dilutive to our shareholders. To the extent we pay the purchase price with proceeds from the incurrence of debt, it would increase our level of indebtedness and could negatively affect our liquidity and restrict our operations.

Furthermore, even if any such transaction is consummated, we may be unable to successfully integrate the new operation, business or partnership contemplated thereunder or to realize expected benefits and synergies in a timely and effective manner due to difficulties in negotiating or aligning interests with potential partners or counterparties.

We face various risks related to health epidemics, pandemics and outbreaks, such as COVID-19, which may have material adverse effects on our business, financial condition, results of operations and cash flows.

We face various risks related to health crisis such as epidemics, pandemics or outbreaks (including COVID-19). These events can trigger changes in consumer behavior related to illness, death, fear and market downturns.

Additionally, restrictions intended to slow the spread of a health epidemic, pandemic or outbreak, such as quarantines, government-mandated actions, stay-at-home orders and other restrictions, may lead to: (i) a reduction in demand for our services, (ii) hinder our ability to provide services, (iii) disrupt supply chains; (iv) reduce international trade and business activity; and (v) create volatility in the global and Brazilian capital markets and have a negative impact on the local economy.

If significant portions of the workforce are not able to work effectively because of a health crisis, such as in the case of epidemics, pandemics and other outbreaks, including due to illness, quarantine, facility closures, ineffective remote work agreements or technology failures or limits, our operations could be significantly disrupted. Network availability, performance, maintenance, condition, repair and our ability to setup or install new connections may be affected by the effects of increased absenteeism in the field workforce, or by the imposition of restrictions such as the type implemented during the COVID-19 outbreak, for example, by hindering the movement and access of our field maintenance teams to equipment stations. The supply chain for technology products, and their underlying components (such as spare parts, transmission and switching equipment, appliances and modems) can be impacted by any delay in the manufacturing processes of suppliers in their countries of origin.

As a result of health epidemics, pandemics and outbreaks, our business can be adversely affected in many ways, potentially for an extended or unpredictable period of time. For example, as a result of impacts on the global economy, market declines and increased market volatility, which could also adversely affect our ability to refinance debt or raise capital on favorable terms.

To the extent any health crisis, epidemic, pandemic or outbreak (such as COVID-19), adversely affects our business and financial results, it could also have the effect of heightening many of the other risks described in this ‘‘Risk Factors’’ section, such as those relating to our ability to successfully implement our business strategy (see “—We may be unable to successfully implement our business strategy”) the credit risk of our customers (see “—We are subject to credit risk with respect to our customers”), our dependence on key suppliers and contractual relationships with other telecommunications providers (“—We depend on key suppliers, certain inputs and contractual relationships with other telecommunications providers which are critical to our ability to provide telecommunications services to our customers”) the Brazilian government’s influence over the Brazilian economy (see “—Risks Relating to Brazil—Risks related to Brazilian economic and political conditions may negatively affect our business”) and volatility in global and domestic financial markets. See “—Risks Relating to Brazil— We may be impacted by volatility in the global financial markets” and “—Risks Relating to Brazil—Developments and the perception of risk in other countries may adversely affect the Brazilian economy and market price of Brazilian issuers’ securities.”

Goodwill impairments may be required in relation to acquired businesses.

We have made business acquisitions in the past and may make further acquisitions in the future. It is possible that the goodwill which has been attributed, or may be attributed, to these businesses may have to be written down if our valuation assumptions are required to be reassessed as a result of any deterioration in the underlying profitability, asset quality and other relevant matters of the businesses. According to the relevant IFRS accounting standard, impairment testing in respect of goodwill is performed annually, or more frequently if there are impairment indicators present, and comprises a comparison of the carrying amount of the cash-generating unit with its recoverable amount. There can be no assurances that we will not have to write down the value attributed to goodwill in the future, which would adversely affect our results and net assets.

We face increasing competition from other providers and services, which may adversely affect our results of operations.

We face competition throughout Brazil from many providers in the personal communications service ("PCS"), market. We compete with providers of mobile telecommunication, VoIP services ("Voice over Internet Protocol"), and landline telecommunications services – including by bundling voice and data to customers in a single offer. Due to this increasing competition, we may incur higher advertising and commercial costs as we attempt to maintain or expand our market share. Other than TIM, the following main competitors also hold authorizations to provide PCS with national coverage: Claro S.A., under the brand name Claro and Telefônica Brasil S.A., under the brand name Vivo ("Vivo"). Moreover, all PCS providers with national coverage offer third generation, or 3G, and fourth generation, or 4G, fifth generation, or 5G mobile telecommunications network technology, reducing differentiation. With the recent acquisition of Oi Mobile assets by TIM, Vivo and Claro, we believe that the likelihood of further consolidations in the Brazilian telecom market among the main competitors are remote, but if further consolidations driven by our main competitors were to occur, those consolidations may favor their strategic advantage with increased market power and access to greater financial resources, thereby weakening our market position.

We also expect to face increased competition from other services outside the telecommunications industry. Technological changes, such as the development, roll-out, and improvement of 4G and 5G mobile networks, may create new revenue streams but also hinder traditional services, introducing additional sources of competition, as is already the case with services like VoLTE calls, messages and SMS. These OTT communication apps are often free of charge (i.e., no subscription fee), accessible by smartphones, and usually allow their users to have access to potentially unlimited messaging and voice services over the Internet, bypassing traditional and more profitable voice and messaging services. As a result, voice traffic is migrating to data and offers from almost all competitors have started to include unlimited voice, thereby accelerating commoditization. Furthermore, very often OTT applications become so important to customers that they are bundled as zero-rated services, or OTT applications for which data usage is free. These and other factors, including the regulatory and tax asymmetry, are responsible for the increase in the competitive pressure we are facing in the mobile market.

OTT application service providers also leverage existing infrastructures and generally do not operate capital-intensive business models associated with traditional mobile network operators like TIM. Technological developments have led to significant improvements in the services provided by OTT applications – particularly in speech quality delivered by data communications apps, strengthening their positioning and relevance as competitors. In addition, providers with strong brand capability and financial strengths have turned their attention to the provision of OTT application services. In the long term, if non-traditional mobile voice and data services or similar services continue to increase in popularity, as they are expected to do, and if we and other mobile network operators are not able to address this competition, this could contribute to further declines in mobile monthly average revenue per user ("ARPU"), and lower margins across many of our products and services, thereby having a material adverse effect on our business, results of operations, financial condition and prospects.

OTT service providers hold most of the content, the means to create it and the distribution channel. Together with these resources they dedicate themselves to creating new ways for their customers to interact with and consume content. As a result, it can be challenging for network operators, such as ourselves, to design value-added services that are beneficial to our customers. In addition to technological, we may face other hurdles to offering value-added services, such as regulation.

Additionally, we expect that the 3.5GHz rights that were acquired by regional providers may provide them with an opportunity to become mobile network operators (“MNOs”). In addition, the new neutral network, which is proposed to be offered by Winity Telecom (the winner of the 700 MHz spectrum), may leverage mobile network capacity for internet service providers (“ISPs”), thereby allowing the ISPs to extend their offerings to their current broadband customer base with bundle offerings, which may increase their competitive offering in the marketplace.

In addition, Anatel promulgated a new “Spectrum Use Regulation” (RUE) based on a “use it or share it” principle to ensure the availability of radio frequencies. With the aim of increasing competition, Anatel is preparing changes to the rules to encourage the more efficient use of spectrum bandwidths, including frequencies that were acquired by operators but that are not actively being used. The RUE is designed to assist in establishing a secondary market for radio frequencies, in addition to requiring the wholesale offer of unused bands.

We expect that new products and technologies will be developed frequently and that those already established will be in continuous evolution, implying a variety of potential consequences for us. These new outcomes may, in the best scenario, reduce the price of our services by providing lower-cost alternatives or, in the worst scenario, render our products and services obsolete, requiring significant investments in new technologies. If such changes occur, our main competitors in the future may be new participants in the market without the burden of an installed older infrastructure. The amount of investment needed to upgrade our premises and to stay effectively competitive could be significant.

Rising competition may increase our churn rate and could continue to adversely affect our market share and margins. Our ability to compete successfully will depend on the effectiveness of our marketing efforts and our ability to anticipate and adapt in a timely manner to developments in the industry, including the technological changes and new services that may be introduced, changes in consumer preferences, demographic trends, economic conditions and discount pricing strategies by competitors. It is difficult to predict which of many possible factors will be important in maintaining our competitive position or what expenditures will be required to develop and provide new technologies, products or services to our customers. If we are unable to compete successfully, our business, financial condition and results of operations will be materially adversely affected.

We may be unable to respond to the trend towards consolidation in the Brazilian telecommunications market.

The Brazilian telecommunications market has been subject to several movements towards market consolidation since its privatization in 1998. For detailed information on transactions we have undertaken see “Item 4. Information on the Company—A. History and Development of the Company—Historical Background.

More recently, the economic and regulatory environment faced by telecommunications companies in Brazil could be understood as having played an important role in encouraging a trend towards market consolidation.

In 2018, via a new resolution, Anatel reduced one of the main regulatory barriers to consolidation in the mobile market. Resolution No. 703/2018 changed the spectrum cap regulation by increasing the amount of spectrum bandwidth an operator is allowed to retain, depending on frequency range and applicable antitrust measures. On November 5, 2020, Anatel Resolution No. 736/2020 amended Resolution No. 703/2018 by establishing new maximum limits for the spectrum for SMP licenses. These changes together with financial distress of two major participants in the mobile market, Nextel and Oi Group, led to a new wave of mergers and acquisitions activity.

In the fixed broadband market, consolidation movements have been frequent among regional internet service providers, as well as spinoff transactions which separate formerly integrated operations between client focused companies and network infrastructure focused companies. Movements like those may result in increased competition within our market. We may be unable to adequately respond to pricing pressures resulting from consolidation in our market, adversely affecting our business, financial condition, and results of operations.

We may also consider engaging in mergers and acquisitions activity, as we did by participating in the acquisition of Oi Mobile, in response to changes in the competitive environment, which could divert resources away from other aspects of our business.

In this regard, potential acquisitions have inherent risks such as increasing leverage and debt service requirements, combining company cultures and facilities, potential exposure to successor liability, and the need to raise additional capital, which may not be possible at that time. Any of these and other factors could adversely affect our ability to achieve the anticipated cash flows at acquired operations or realize other anticipated benefits of acquisitions, which could negatively affect our reputation or operations.

We may face difficulties responding to new telecommunications technologies.

The Brazilian wireless telecommunications market is experiencing significant technological changes, as evidenced by the following, among other factors:

- ongoing improvements in the capacity and quality of digital technology available in Brazil;
- shorter time periods between the introduction of new telecommunication technologies and subsequent upgrades or replacements;
- the development of user interface, or UI, and user experience, or UX, technology;
- the development of customer behaviors, particularly the migration of services from voice to data, requiring new planning models and accelerating the evolution of communications to increasingly occur on IP networks;
- the development of cloud solutions to provide platform as a service (PaaS), software as a service (SaaS), or infrastructure as a service (IaaS), in order to drive down costs;
- voice over LTE, known as VoLTE, which increases significantly the quality of voice calls and allows companies to traffic voice as data through their 4G networks;
- the expansion of 5G DSS technology, matched with the simultaneous management of multiple layers of legacy technology, such as GSM, 3G, and 4G through different spectrum bands, which involves managing the LTE radio access network, or RAN, sharing agreement among TIM and other companies (see “Item 4. Information on the Company—B. Business Overview—Site-Sharing and Other Agreements”), which creates specific demands on bandwidth and performance, and takes advantage of network virtualization, distributed cloud at the wireless edge, and allows multiple logical networks to run on top of a shared physical network infrastructure, known as network slicing, for traffic control in a service-based architecture;
- the recent acquisition of the 100 MHz frequency nationally in the 3.5 GHz band, in addition to 40 MHz blocks in the 2.3 GHz band in the South and Southeast regions of Brazil (excluding São Paulo);
- the deployment of a new technology in our mobile network called 5G standalone (known as 5G SA), which requires unprecedented levels of automation across an end-to-end network to fulfill the needs of new services and applications. The 5G SA network needs to be flexible, programmable and distributable in nature, so that it can provide the necessary flexibility to reduce time-to-market and provide the greatest performance and efficiency gains. As a result of the development of 5G SA, products and services supplied by different providers can be more greatly differentiated as between competitors, as 5G SA better enables the provision of custom services, including, for example, services with very high throughputs and/or very low latencies;
- the widespread implementation, in the near future, of Embedded Subscriber Identity Module, or eSIM, technology, which is a small microchip built into phones as an alternative to the conventional physical SIM card, and which will enable our customers to switch faster to other providers, thereby increasing competition;
- an increase in market competition in respect of residential fixed ultra-broadband, requiring operators (including former fixed internet providers which had provided services using copper and coaxial technologies) to accelerate investments in fiber capillarity deployments. This factor becomes more significant when considering the country's continental dimensions, new market opportunities and the need to provide comparable service in capacity and quality to locations far from large centers, thus boosting investments in IP backbone and datacenters;

- the expansion of the Internet of Things, or IoT, technology in all of its forms and applications, requiring the creation of new platforms enabling its operation in new areas of the value chain. We are strengthening the IoT ecosystem with new partnerships, using connectivity as an enabler to increase productivity and expand the monetization of our customer base; and
- the acceleration in the use of artificial intelligence, or AI, and machine learning, in order to use resources more efficiently, reduce spending and increase agility.

We may be unable to keep pace with these technological changes, which could affect our ability to compete effectively, and the investment required to adopt these new technologies will be significant, both of which could have a material adverse effect on our business, financial condition and results of operations.

Our operations depend on our ability to efficiently operate our systems and controls that are subject to failure that could affect our business and our reputation.

Our success largely depends on the continued and uninterrupted performance of our controls, network technology systems and of certain hardware. Our technical infrastructure (including our network infrastructure and information technology, or IT, systems for mobile telecommunications services) is vulnerable to damage or interruption from information and telecommunication technology failures, power loss, floods, windstorms, fires, terrorism, intentional wrongdoing, human error and similar events. An unexpected increase in volume on our network and systems could cause them to malfunction, such as in periods of increased demand or unexpected circumstances that may reduce our ability to service our infrastructure, such as in a health crisis similar to the COVID-19 pandemic. Our controls are dependent, not exclusively, on these technological systems and are also subject to the interruptions and failures. Unanticipated problems with our controls, or at our facilities, system failures, hardware or software failures, computer viruses or hacker attacks could affect the quality of our services and cause service interruptions. Any of these occurrences could result in reduced user traffic and reduced revenue and could harm our levels of customer satisfaction, our reputation and compliance with certain of our regulatory obligations.

Our availability indicators, repair performance and installation of new accesses/projects can be impacted by the effects of increased absenteeism in the field workforce and our experts teams in technology, or even by the imposition of lockdowns as a result of any health crisis that prevents or hinders the displacement and access of field maintenance teams to equipment stations.

Our supply chain for technological product inputs (like spare parts, transmission and commutation equipment, handsets and modems) may be impacted by any delay in the manufacturing process of vendors in their countries of origin, including as a result of a health crisis or military conflicts that could impact logistics and global supply chain.

Our operations and reputation could be materially negatively affected by cyber-security threats or our failure to comply with new data protection laws, mainly the Brazilian General Data Protection Law (Law No. 13,709/2018), or the LGPD, which came into effect on September 18, 2020, following the President of Brazil’s veto of article 4 of Provisional Measure No. 959/2020, which established that the LGPD would only come into effect on May 3, 2021. However, the administrative sanctions provisions of LGPD only became enforceable as of August 1, 2021, pursuant to Law No. 14,010/2020. Any proceeding or action and related damages could be harmful to our reputation, force us to incur significant expenses, divert the attention of our management, increase our costs of doing business or result in the imposition of financial penalties.

In addition, Decree No. 10,474/2020 created the regulatory agency of the National Data Protection Authority, or ANPD. The ANPD must ensure the protection of personal data and will deal with cases regarding commercial and industrial secrets in Brazil.

ANPD is also responsible for developing guidelines for the Protection of Personal Data and Privacy National Policy and for inspecting and applying sanctions in the event of data breaches according to resolution CD/ANPD No. 1, of October 28, 2021. Moreover, ANPD can issue regulations and procedures to protect personal data and privacy, as well as responsible for assessing the impact of personal data protection in scenarios that may be deemed as a high risk to personal data protection principles. As a result of ANPD's new regulations and procedures, we may be required to change our business practices and implement additional measures to adapt our personal data processing activities. This could adversely affect our business, financial condition, or results of operations. We cannot assure you that our LGPD compliance efforts will be deemed appropriate or sufficient by regulatory authorities or by courts.

We performed a deep-gap analysis in order to identify the main problems and, based on this analysis, are now in the final phase of implementing resolutions to all the issues identified in order to achieve full compliance with the LGPD requirements. However, deficiencies in the full adoption of data security measures, implementing personal data processing and retention requirements and reporting data measures within a narrow mandatory time frame could lead to disputes with data protection authorities, fines or harm to our reputation.

Sophisticated information and processing systems are vital to our growth and our ability to monitor costs, render monthly invoices, process customer orders, provide customer service and achieve operating efficiencies. We cannot assure that we will be able to successfully operate and upgrade our information and processing systems or that they will continue to perform as expected without any failure. A severe failure in our accounting, information and processing systems could impair our ability to collect payments from customers and respond satisfactorily to customer needs, which could adversely affect our business, financial condition and results of operations.

Our business is dependent on our ability to expand our services while maintaining the quality of the services provided and a positive customer experience.

Our business as a telecommunications services provider depends on our ability to maintain and expand our telecommunications services network. We believe that our expected growth will require, among other aspects:

- continuous development of our controls and operational and administrative systems;
- efficiently allocate our capital;
- increasing marketing activities;
- improving our understanding of customer wants and needs;
- continuous attention to service quality;
- a positive customer experience;
- attracting, training and retaining qualified management, technical, customer relations, and sales personnel; and
- increased network capacity through the new spectrum that we recently acquired and/or more investment in network assets such as 4G and 5G technology.

We believe that these requirements will place significant demand on our managerial, operational and financial resources. Failure to manage successfully our expected growth could reduce the quality of our services and result in an inadequate customer experience, with adverse effects on our business, financial condition and results of operations.

Our operations are also dependent upon our ability to maintain and protect our network. Damage to our network and backup systems could result in service delays or interruptions and limit our ability to provide customers with reliable service over our network. The occurrence of an event that damages our network may adversely affect our business, financial condition and results of operations.

We face various cyber-security risks that, if not adequately addressed, could have an adverse effect on our business.

We face various cyber-security risks that could result in business losses, including, but not limited to, contamination (whether intentional or accidental) of our networks and systems by third parties with whom we exchange data, equipment failures, unauthorized access to and loss of confidential customer, employee and/or proprietary data by persons inside or outside our organization. We are also exposed to cyber-attacks causing systems degradation or service unavailability, the penetration of our information technology systems and platforms by malicious third parties, and infiltration of malware (such as computer viruses) into our systems.

Cyber-attacks against companies have increased in frequency, scope and potential harm in recent years. Further, the perpetrators of cyber-attacks are not restricted to particular groups or persons. These attacks may be committed by our employees or third parties operating in any region, including jurisdictions where law enforcement measures to address such attacks are unavailable or ineffective. We may not be able to successfully protect our operational and information technology systems and platforms against such threats. There can be no assurance that we will be successful in preventing cyber-attacks or successfully mitigating their effects. Similarly, there can be no assurance that we or our third-party providers and other contractors will be successful in protecting our customers’ personal data and other data that is stored on our and their systems. Further, as cyber-attacks continue to evolve, we may incur significant costs in the attempt to modify or enhance our protective measures or investigate or remediate any vulnerability.

The inability to operate our networks and systems as a result of cyber-attacks, even for a limited period of time, may result in significant expenses to us and/or a loss of market share to other communications providers. The costs associated with a major cyber-attack could include expensive incentives offered to existing customers and business partners to retain their business, increased expenditures on cyber-security measures and the use of alternate resources, lost revenues from business interruption and litigation. If we are unable to adequately address these cyber-security risks, our operating network and information systems could be compromised, which would have an adverse effect on our business, financial condition, reputation and results of operations. In order to mitigate such risks, we are currently adopting ISO 27001 standard best practices and obtained the certification in November 2022. As of the date of this annual report, such certification process is still ongoing. Additionally, due to the recent Russia-Ukraine conflict, there have been publicized threats to increase hacking activity against the critical infrastructure of any nation or organization that retaliates against Russia for its invasion of Ukraine. Any such increase in such attacks on our third-party service providers or other systems could adversely affect our network systems or other operations. We have measures in place that are designed to detect and respond to such cyber-attacks and data security incidents, but there can be no assurance that our efforts will prevent or detect such cyber-attacks and data security incidents.

We depend on data centers operated by third parties and third-party cloud computing platforms, and any disruption in the operation of these facilities or platforms or access to the Internet would adversely affect our business.

Our business requires the ongoing availability and uninterrupted operation of internal and external systems and services. We have adopted new technology infrastructure solutions, which carries with it some risk to business continuity. With the adoption of cloud computing technology, key IT systems are being migrated to the public cloud. Despite cloud computing reducing some risks, such as delays in the supply of equipment by suppliers (like spare parts, servers, etc.), the adoption of cloud computing means that the control and responsibilities for the proper functioning of the systems are shared between ourselves and the third parties. In all cases, the third parties will be responsible for the physical infrastructure, connectivity, energy supply, cooling and all the capabilities related to infrastructure availability. Depending of the cloud service type involved for any specific system (e.g. for IaaS, PaaS, SaaS), other capabilities will be the responsibility of the third party, according to the principles of the Shared Responsibility Model defined by the Cloud Security Alliance, and incorporated into our contracts with the third-party providers

These third-party providers may experience connectivity disruption, outages and other performance problems, which may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, security attacks, fraud, spikes in customer usage and denial of service issues. As such, our success also depends directly on the continuity of the provision of computing capacity and the availability of connectivity between the cloud computing provider’s datacenters, including the connectivity with our datacenters and internal networks. An intermittent failure or complete lack of connectivity or system availability, may cause interruption to our services, affecting our availability indicators as well as our revenue and reputation.

Having data hosted on a public cloud also poses a risk to our ability to comply with data protection principles or law (such as the LGPD). As such, our success depends on our ability to certify that cloud providers are adopting security best practices, as well as complying with the terms of data protection laws in accordance with our contractually agreed terms.

Certain debt agreements contain financial covenants and any default under such debt agreements may have a material adverse effect on our financial condition and cash flows.

Certain of our existing debt agreements contain restrictions and covenants and require the maintenance or satisfaction of specified financial ratios and tests. See “Item 5. Operating and Financial Review and Prospects.” The ability to meet these financial ratios and tests can be affected by events beyond our control, and we cannot assure that we will meet those tests. Failure to meet or satisfy any of these covenants, financial ratios or financial tests could result in an event of default under these agreements.

Our ability to meet these financial ratios and tests can be affected by events beyond our control, and we cannot assure you that we will meet those requirements. Failure to meet or satisfy any of these requirements may have a material adverse effect on our financial condition and cash flows.

If we are unable to meet these debt service obligations, or comply with these debt covenants, we could be forced to restructure or refinance this indebtedness, seek additional equity capital or sell assets.

Due to the nature of our business we are exposed to numerous lawsuits, consumer claims and tax-related proceedings.

Our business exposes us to a variety of lawsuits and other proceedings brought by or on behalf of consumers in the ordinary course of business as a mobile telecommunications provider in Brazil. We are subject to a number of public civil actions and class actions that have been brought against mobile telecommunications providers in Brazil mainly related to network quality, the expiration of prepaid usage credits, minimum term clauses, subscription fees, quality of service and the use of land to install our network sites. These suits include claims contesting certain aspects of the fee structure of our prepaid plans, hybrid (monthly billed fixed price), or so-called control plans and postpaid plans, which are commonplace in the Brazilian telecommunications industry.

In addition, federal, state and municipal tax authorities have questioned some tax procedures we have adopted, and have raised questions regarding the calculation of the basis for certain sector-specific contributions (FUST and FUNTTEL, as each are defined in “Item 4. Information on the Company—B. Business Overview—Taxes on Telecommunications Goods and Services”). As of December 31, 2022, we are subject to approximately 3,487 tax-related lawsuits and administrative proceedings with an aggregate value of approximately R$18,645 million classified as “probable loss” and “possible loss” by our legal advisors. In addition, there are tax proceedings arising from the acquisition of the former Intelig business (currently TIM S.A.) by the former parent company of the TIM Participações group, relating to the purchase price.

An adverse outcome in, or any settlement of, these or other lawsuits could result in losses and costs to us, with an adverse effect on our business practices and results of operations. For some of these lawsuits, we were not required to and have not established any provision on our statement of financial position or have established provisions only for part of the amounts in controversy, based on our judgments or opinions of our legal counsel as to the likelihood of winning these lawsuits. In addition, our senior management may be required to devote substantial time to these lawsuits, which they could otherwise devote to our business. See Note 25 to our financial statements.

Any modification or termination of our ability to use the "TIM" trade name may adversely affect our business and operating results.

Telecom Italia S.p.A., or Telecom Italia, as Licensor, and TIM S.A., TIM Participações, which merged into TIM S.A., and Instituto TIM as Licensees, entered into a trademark license agreement, or the Trademark License Agreement, where Telecom Italia granted the Licensees a non-exclusive and non-transferable license of 196 trademarks (including the TIM trademark) to: (i) promote and render Licensees' services, including co-branded services; (ii) use the trademarks as domain names of websites owned by the Licensees, dedicated to the promotion and/or the rendering of the Licensees' services; (iii) use the TIM trademark in events, campaigns, commercial partnerships, sponsorship projects and other activities in order to promote Licensees' services; and (iv) use "TIM" as part of Licensees' corporate names. The Trademark License Agreement is limited to Brazil and valid until December 31, 2023, unless terminated earlier. Telecom Italia, who owns the rights to the "TIM" trade name, may prevent us from using the TIM trademark by termination of the Trademark License Agreement. The loss of use of the trademark "TIM" may have a material adverse effect on our business and operating results.

We are subject to credit risk with respect to our customers.

Our operations depend to a significant extent on the ability of our customers to pay for our services. Under Anatel regulations, we are allowed to undertake certain measures to reduce customer defaults, such as restricting or limiting the services we provide to customers with a history of defaults. If we are unable to undertake measures to limit payment defaults by our subscribers or that allow us to accept new subscribers based on credit history, we will remain subject to outstanding uncollectible amounts, which could have an adverse effect on our results of operations. See "Item 5. Operating and Financial Review and Prospects."

We may be subject to liability related to outsourcing certain functions to third-party service providers.

We may be exposed to contingent liabilities due to our outsourcing of certain functions to third-party service providers. Such potential liabilities may involve claims by third-party providers who claim that they are treated as direct employees as well as claims for secondary liability resulting from workplace injury, wage parity and overtime pay complaints. Our financial condition and results of operation may be adversely affected in the event that a material portion of these liabilities are decided against us.

The Brazilian Supreme Court has declared the outsourcing of any company's main activities as legal, which indicates a probable favorable outcome regarding the matter. In any case, regardless of the decision in Supreme Court, we would also be jointly liable with the service provider in connection with any violation of labor obligations related to the outsourced workers.

If the contracting of third-party services are considered to involve the main activities of the company, it may be characterized as a direct employment, which would significantly increase our costs and as a result we may be subject to administrative proceedings by the relevant labor authorities and may be required to pay fines to the third-party service providers.

We depend on key suppliers, certain inputs and contractual relationships with other telecommunications providers which are critical to our ability to provide telecommunications services to our customers or may have a material adverse effect on our operations.

We rely on various vendors to supply network equipment, mobile handsets and accessories necessary for our business. These suppliers may, among other things, delay delivery periods, increase their prices, limit the amounts they are willing or able to supply to us, or suffer disruptions in their own supply chains. If these suppliers are unable or unwilling to provide us with equipment or supplies on a regular basis, we could face difficulties in carrying out our operations, which could negatively affect our results of operations and limit our ability to execute our agreements.

Geopolitical, sanitary, financial and sanctions aspects, among others, could cause an interruption of materials and services supply. Supplier exclusivity or dependence increases exposure to risk. Interruption can impact not only the acquisition of new materials and services, but also the maintenance of existing equipment and operations.

We rely on certain telecommunications providers and partners, through contractual arrangements, to supply key infrastructure and other services. Termination, non-renewal and/or interruption in negotiation of those agreements, may have a material adverse effect on our business.

Anatel permits such agreements between telecommunications providers in order to avoid unnecessary duplication of networks and infrastructure, and to lower costs and increase the reach of telecommunication services in Brazil.

Some (non-exhaustive) examples of these agreements include:

- SWAP agreements (exchange of network capacity or assets between operators);
- Indefeasible Rights of Use (IRU);
- Lease of circuits (e.g. EILD, IP Peering, IP Transit and Satellite bandwidth/capacity);
- Co-sites deals with other operators and tower companies;
- Rights of use with private companies and public authorities; and
- Interconnection and co-billing.

For detailed information on these contracts see “Item 4. Information on the Company—B. Business Overview—Site-Sharing and Other Agreements”.

Furthermore, the constant changes in the telecommunications industry, such as the growth of broadband, may result in a limited supply of equipment essential for the provision of services. The restrictions on the number of manufacturers imposed by the Brazilian government for certain inputs pose certain risks, including susceptibility to currency fluctuations and the imposition of customs or other duties for those inputs which are imported. Inputs produced domestically are available from a limited number of domestic suppliers, and accordingly we are highly dependent upon their ability to accurately forecast domestic demand and manage inventory.

The need to hire many key suppliers requires complex deals, detailed and timely analysis of contractual documents and an integrated, end-to-end management process.

The potential positive impact of 5G networks on multiple industries, specifically the optimization of energy usage; cloud computing; ultrafast broadband; internet of things (IoT); innovation, including self-driving cars, transportation; agribusiness; education; health; and factory equipment. The necessary features for a company to benefit from the 5G network supply chain are software-based, and our supply chain is increasingly based on cloud computing and software.

Discussions regarding data safety of equipment provided by Chinese suppliers could have side effects across the global ICT sector, also significantly affecting our supply chain, infrastructure deployment and costs, and impacting the future of the industry as a whole.

Our operations could be suspended or interrupted as a result of natural or man-made disasters or other unexpected events, such as those related to climate change.

Our operations may be suspended or interrupted for an indeterminate period in case of adverse events, such as a result of energy shortages, damages to our transmission bases, natural disasters, climate change or other environmental events or natural or man-made disasters, including fire, explosion, storms, geopolitical conflict, civil unrest or health crises (such as the COVID-19 pandemic) or any other unexpected damage events. Such impacts may present disproportional geographic impacts, which may vary from impacts to a single address to an entire city or region. If we are unable to mitigate or prevent such damages in the event of a natural or man-made disaster and any other unexpected events, the suspension or interruption of our operations could have a material adverse effect on the continuity of our operations, our financial results and the compliance with regulations.

In order to avoid or reduce indeterminate periods of suspension or interruption of operations caused by damages to our transmission bases, natural disasters or any other unexpected events, we have implemented an internal policy aimed at a continuous mapping systemic vulnerabilities in order to improve the selective process of key projects, intended to expand the robustness of the technical network infrastructure and make it gradually more resilient.

We use demand forecasts to make investments, however such forecasts may ultimately be inaccurate due to economic volatility and result in lower revenues than expected.

We make certain investments, such as the procurement of materials and the development of our network infrastructure, based on our forecasts of the amount of demand that customers will have for our services at a later date. However, any major changes in the Brazilian economic scenario may affect this demand and therefore our forecasts may turn out to be inaccurate. As a result, it is possible that we may make larger investments based on demand forecasts than were necessary given actual demand at the relevant time, which may directly affect our cash flow. Unanticipated improvements in economic conditions may have the opposite effect and equally pose a risk.

The management of our cash and our financial investments are also subject to the country’s economic conditions. We may make financial allocations in which the results of operations are not as expected, generating lower profitability or costs.

Our governance and compliance processes may fail to prevent regulatory penalties and reputational harm.

We operate in a global environment, as we have agreements with companies all over the world. Our governance and compliance processes, which include the review of internal control over financial reporting, may not prevent future breaches of all applicable legal, accounting or corporate governance standards. We may be subject to breaches of our Code of Ethics, anti-corruption policies and business conduct protocols and to instances of fraudulent behavior, corrupt practices and dishonesty by our employees, contractors or other agents. Our failure to comply with applicable laws and other standards could subject us to fines, loss of operating licenses and reputational harm.

Improper use of our networks could adversely affect our costs and results of operations.

We may incur costs associated with the unauthorized and fraudulent use of our networks, including administrative and capital costs associated with detecting, monitoring and reducing the incidence of fraud. Fraud also affects interconnection costs and payments to other carriers for non-billable fraudulent roaming. Improper use of our network could also increase our selling expenses if we need to increase our provision for doubtful accounts to reflect amounts we do not believe we can collect for improperly made calls. Any increase in the improper use of our network in the future could materially adversely affect our costs and results of operations.

We may be unable to implement our plans to expand and enhance our existing networks in Brazil in a timely manner or without unanticipated costs, which could hinder or prevent the successful implementation of our business plan and adversely affect our results of operations.

Our ability to achieve our strategic objectives depends in large part on the successful, timely and cost-effective implementation of our plans to expand and enhance our networks in Brazil. Factors that could affect this implementation include:

- our ability to generate cash flow or to obtain future financing necessary to implement our projects;
- delays in the delivery of telecommunications equipment and broadband capacity by our vendors;
- the failure of the telecommunications equipment supplied by our vendors to comply with the expected capabilities;
- delays in obtaining licenses required to carry out construction works and other activities necessary to implement and update our network;

- delays resulting from the failure of third-party suppliers or contractors to meet their obligations in a timely and cost-effective manner; and
- higher than expected auction prices due to competition between bidders and/or to national policy.

Although we believe that our cost estimates and implementation schedule are reasonable, we cannot assure you that the actual costs or time required to complete the implementation of these projects will not substantially exceed our current estimates. Any significant cost overrun or delay could hinder or prevent the successful implementation of our business plan and result in revenues and net income being less than expected. We employ structured control tools and procedures in order to meet deadlines and avoid impacts on our business and results of operations.

Risks Relating to the Brazilian Telecommunications Industry

Anatel classified us as an economic group with significant market power in some markets and we are now subject to increased regulation.

In July 2018, Anatel published Resolution No. 694/2018, or the “New PGMC”, revising the general plan for competition goals (*Plano Geral de Metas de Competição*) (“PGMC 2012”). Under the New PGMC, TIM has been classified as having significant market power in the following relevant markets: (i) mobile network; (ii) national roaming; and (iii) high-capacity data transport.

Due to such classification, we are subject to increased regulation under the New PGMC, which could have an adverse effect on our business financial condition, results of operations and compliance with regulations. In the national roaming market, we must also offer roaming services at regulated rates to other mobile providers. The new PGMC is currently under review by Anatel and a new regulation is expected to come into force in the second half of 2024, after a public consultation to be held in the second half of 2023. See “Item 4. Information on the Company—B. Business Overview—Regulation of the Brazilian Telecommunications Industry—Significant Market Power”.

Our radio frequency (“RF”), authorizations for the 800 MHz, 900 MHz, 1,800 MHz and 2,100 MHz bands that we use to provide PCS services started to expire in September 2007 and are renewable for one additional 15-year period, requiring payment at every two-year period equal to 2% of the prior year’s revenue net of taxes, by way of investment under the Basic and Alternative Service Plans, which are intended to increase telecommunications penetration throughout Brazil. Anatel has stated that the revenue on which the 2% payment is based should be calculated as including revenues derived from interconnection as well as additional facilities and conveniences. As a result, we are currently disputing these RF authorization renewal payments both administratively and judicially. Although there are administrative procedures still pending on analysis, Anatel has denied our appeals and issued Precedent No. 13, determining that revenues from interconnection as well as additional facilities and conveniences should be considered on the basis of the calculation of the price due to the renewal of the spectrum licenses. Judicially, the matter is also still under dispute. In December 2018, under Judgment No. 706 and No. 707, Anatel approved a new radiofrequency revenue segregation methodology to be applied. The application of this new methodology allows the segregation of significant market power revenues by the percentage of radiofrequency extended in relation to the total of existing radiofrequencies, both expressed in the amount of MHz, and addresses part of the dispute about the values to be paid by us due in connection with the initial renewal process.

After the expiration of the second renewal of radiofrequency use rights, there may be new administrative and judicial discussions and disputes regarding the applicable calculation methodology and deadlines after the approval of Law No. 13,879, of October 3, 2019. The Federal Court of Accounts ruled that such renewal process may be subject to a new bidding procedure. However, Anatel has granted us and other competitors extensions for shorter terms until a decision has been made on how to proceed with the radiofrequency use rights.

As a telecommunications provider, we are subject to extensive legal and regulatory obligations in the performance of our activities which may limit our flexibility in responding to market conditions, competition and changes in our cost structure or with which we may be unable to comply.

Our business is subject to extensive government regulation, including any changes that may occur during the period of our authorization to provide telecommunication services. Anatel, which is the main telecommunications industry regulator in Brazil, regulates, among others: (i) industry policies and regulations; (ii) licensing; (iii) rates and tariffs for telecommunications services; (iv) competition; (v) telecommunications resource allocation; (vi) service standards; (vii) technical standards; (viii) quality standards; (ix) consumer rights; (x) interconnection and settlement arrangements; (xi) coverage obligations; and (xii) spectrum.

In addition to the rules set forth by Anatel, we are subject to compliance with various legal and regulatory obligations, including, but not limited to, obligations arising from the following: (i) PCS authorizations under which we operate our cellular telecommunications business; (ii) fixed authorizations (local, national long distance, international long distance and multimedia service) under which we operate our telecommunications business; (iii) limited private services authorization under which we operate a private network formed by point-to-point radio communication (*radioenlaces*); (iv) the Consumer Defense Code; (v) the General Telecommunications Law (amended by Law No. 13,879/2019); (vi) the Data Protection Law (Law No. 13,709/2018, as amended); and (vii) the Brazilian Competition Law (Law No. 12,529/2011).

Further, the Administrative Council for Economic Defense (*Conselho Administrativo de Defesa Econômica*) ("CADE"), the Brazilian Antitrust Enforcement Agency, is currently investigating (i) claims that the alleged formation of a consortium by the applicants (us, Claro and Vivo) for jointly acquiring Oi's mobile assets was an infraction to Brazilian antitrust laws, by the consummation of the referred transaction before the antitrust authority reached a final decision; and (ii) the occurrence of collusive and exclusionary practices among competitors (with Vivo and Claro) regarding Oi's mobile assets acquisition. The files for the second investigation are not yet public and we have not been officially notified. However, CADE's final decision on Oi's assets transaction expressly referenced the opening of such proceeding.

We are also subject to applicable national and international anti-corruption laws. We believe that we are currently in material compliance with our obligations arising out of each of the above referenced laws, regulations and authorizations.

Brazil is a highly competitive mobile market, having four companies operating networks with national coverage, plus other regional players and mobile virtual network operator ("MVNOs"). Any potential deals involving such participants is likely to be carefully analyzed by CADE and Anatel, on a state-by-state basis. See "Item 4. Information on the Company—A. History and Development of the Company—Recent Developments—Acquisition of Oi Group's UPI Mobile Business."

Through the 5G spectrum auction, Anatel auctioned licenses. In addition to bidders in the auction being required to offer a certain price, the condition of the auction requires the successor licensee to commit to certain minimum investments. There may be risks associated with being able to fulfill such commitments or for failing to comply with an investment commitment.

Over the last few years, Anatel has instituted certain administrative proceedings against us and other Brazilian telecommunications providers to investigate certain alleged nonconformities related to quality goals and other regulatory obligations. In response to the initiation of such Anatel proceedings, we, as well as other active telecommunications companies in the Brazilian market, opted to negotiate and enter into a Term of Conduct Adjustment ("TAC"). The TAC aims to remediate the underlying causes of the ongoing administrative proceedings by setting commitments to adjust conduct and an agreement with respect to general investments on future projects. The TAC was approved by Anatel on August 22, 2019, and on June 19, 2020, our Board of Directors approved the execution of the TAC. On October 18, 2022, the first amendment was signed following renegotiation of chapter X, section I, which included the adjustment of obligations related to certain quality indicators. See "Item 4. Information on the Company—B. Business Overview—Regulation of the Brazilian Telecommunications Industry—PCS Regulation."

We cannot assure that we will be able to fully comply with each of the applicable laws, regulations and authorizations or that we will be able to comply with future changes in the laws and regulations to which we are subject. Moreover, compliance with this extensive regulation, the conditions imposed by our authorization to provide telecommunication services and other governmental action may limit our flexibility in responding to market conditions, competition and changes in our cost structure. These regulatory developments or our failure to comply with them could have a material adverse effect on our business, financial condition and results of operations.

The Brazilian government under certain circumstances may terminate our authorizations or we may not receive renewals of our authorizations.

We operate our business under authorizations granted by the Brazilian government. As a result, we are obligated to maintain minimum quality and service standards, including targets for call completion rates, geographic coverage and voice accessibility, data accessibility, voice drop, data drop, data throughput, user complaint rates and completion rates to our call center. Our ability to satisfy these standards, as well as others, may be affected by factors beyond our control. We cannot assure that, going forward, we will be able to comply with all of the requirements imposed on us by Anatel or the Brazilian government. Our failure to comply with these requirements may result in the imposition of fines or other government actions, including, restrictions on our sales and, in an extreme situation, the termination of our authorizations in the event of material non-compliance.

Any partial or total revocation of our authorizations or failure to receive renewal of such authorizations when they expire would have a material adverse effect on our financial condition and results of operations.

These regulations may have an adverse effect on our financial results given the dynamics of our revenues and costs related to interconnection fees. In addition, Anatel may allow more favorable prices to operators without significant market power.

Actual or perceived health risks or other problems relating to mobile telecommunications technology could lead to litigation or decreased mobile communications usage, which could harm us and the mobile industry as a whole.

The effects of, and any damage caused by, exposure to electromagnetic fields has been and still is the subject of careful evaluation by the international scientific community, but until now there is no scientific evidence of harmful effects on health. We cannot rule out that exposure to electromagnetic fields or other emissions originating from wireless handsets will not be identified as a health risk in the future.

These concerns could have an adverse effect on the wireless communications industry and, possibly, expose wireless providers, including us, to litigation.

In addition, although Brazilian law already imposes strict limits in relation to transmission equipment, these concerns may cause regulators to impose greater restrictions on the construction of base station towers or other infrastructure, which may hinder the completion of network build-outs and the commercial availability of new services and may require additional investments. The expansion of our network may be affected by these perceived risks if we experience problems in finding new sites, which in turn may delay the expansion and may affect the quality of our services.

Anatel Resolution No. 700/2018 sets limits of emission and exposure for fields with frequencies between 8.3 kHz and 300 GHz, and Anatel Act No. 458/2019 and Law No. 11,934/2009 establish limits related to the magnetic and electromagnetic emissions recommended by the World Health Organization and require that operators have to maintain a record of the measurements of the levels of the magnetic and electromagnetic emissions of each transmitting station.

In 2021, Law No. 14,173/2021 came into force, which amended Law No. 11,934/2009, revoking the mandatory sharing of towers with less than 500 meters between them. The withdrawal of this obligation was considered essential for the implementation of 5G in Brazil, allowing for the expected increase in density for the new technology. Further, in 2022 Law No. 14,424/2022 came into force, which allowed operators to be authorized to install antennas, even if the competent authority does not respond within a period of 60 days.

Any of these or any other additional regulations could adversely affect our business, financial condition and results of operations. Government authorities could review the regulation of wireless handsets and base stations as a result of these health concerns, or wireless companies, including us, could be held liable for costs or damages associated with these concerns, which could have an adverse effect on our business, financial condition and results of operation. We cannot assure you that further medical research and studies will refute a link between the mobile technology in question and these health concerns.

Risks Relating to Brazil

Risks related to Brazilian economic and political conditions may negatively affect our business.

Political conditions in Brazil may affect the confidence of investors and the public in general, as well as the development of the economy. Political crises have affected and continue to affect the confidence of investors and the general public, historically resulting in economic deceleration and heightened volatility in the prices of securities offered by companies with significant operations in Brazil. The recent economic instability in Brazil has contributed to a decline in confidence in the Brazilian market, as well as to a deteriorating political environment.

Brazil’s most recent presidential elections took place in October 2022. Luiz Inácio Lula da Silva was elected President of the Republic.

There are uncertainties regarding the policies to be followed by the newly inaugurated government, the ability of this new government to implement policies and reforms, as well as the external perception of the Brazilian economy and political environment, all of which could have a negative impact on our business and the price of our securities. In addition, a tax reform proposed in 2021, which has not been voted on by both houses of the Brazilian Congress, has proposed the revocation of the income tax exemption on the payment of dividends, which, if enacted, would increase the tax expenses associated with any dividend or distribution by Brazilian companies and could impact our capacity to receive future cash dividends or distributions net of taxes from our subsidiaries. The Brazilian administration that took office on January 1, 2023 has stated that tax reform is among their priorities. Any such new policies or changes to current policies may have a material adverse effect on us.

In addition, if the Brazilian government is unable to implement any necessary reforms, this may lead to diminished confidence in the Brazilian government’s budgetary condition and fiscal stance, which could result in downgrades of Brazil’s sovereign foreign credit rating by credit rating agencies, negatively impact Brazil’s economy, and lead to depreciation of the *real* and/or an increase in inflation and interest rates. Any such developments may have a material adverse impact on our business, results of operations, financial condition, and prospects.

Uncertainty about the Brazilian government’s implementation of changes in policies, or regulations that affect such implementation, may contribute to economic instability in Brazil and increase the volatility of securities issued abroad by Brazilian companies, including our securities.

Any of the above factors may create additional political uncertainty, which could harm the Brazilian economy and, consequently, our business, and could adversely affect our financial condition, our results of operations and the price of our common shares.

The Brazilian government has exerted significant influence over the Brazilian economy and continues to do so. This involvement may have an adverse effect on our activities, our business and on the market prices of our shares and ADSs.

The Brazilian government has frequently intervened in the Brazilian economy and occasionally made drastic changes in economic policy. To influence the course of Brazil’s economy, control inflation and implement other policies, the Brazilian government has taken various measures, including the use of wage and price controls, currency devaluations, capital controls and limits on imports and freezing bank accounts. We have no control over, and cannot predict what measures or policies the Brazilian government may take or adopt in the future. Our business, financial condition, revenues, results of operations, prospects and the trading price of our securities may be adversely affected by changes in government policies and regulations, as well as other factors, such as: (i) fluctuating exchange rates; (ii) inflation; (iii) interest rates; (iv) fiscal and monetary policies; (v) changes in tax regimes; (vi) liquidity in domestic capital and credit markets; (vii) economic, political and social instability; (viii) reductions in salaries or income levels; (ix) rising unemployment rates; (x) tax policies (including those currently under consideration by the Brazilian Congress); (xi) exchange controls and restrictions on remittances abroad; and (xii) other political, diplomatic, social or economic developments in or affecting Brazil.

Uncertainty regarding changes by the Brazilian government to the policies or standards that affect these or other factors could contribute to economic uncertainty in Brazil and increase the volatility of the Brazilian capital market and of securities issued abroad by Brazilian companies.

Additionally, interruptions in the credit and other financial markets, and the deterioration of the Brazilian and/or global economic environment may, among other effects: (1) have a negative impact on demand, which may reduce sales, operating income and cash flow; (2) decrease consumption of our products; (3) restrict the availability of financing for our operations or investments, or for the refinancing of our debt in the future; (4) cause creditors to modify their credit risk policies and restrict our ability to negotiate any of the terms of our debt in the future; (5) cause the financial situation of our clients or suppliers to deteriorate; or (6) decrease the value of our investments.

Changes in Brazilian tax laws may have an adverse impact on the taxes applicable to our business and over our prices.

Our business is substantially affected by the tax regime in Brazil on telecommunications goods and services, as disclosed in detail in “Item 4. Information on the Company—B. Business Overview—Taxes on Telecommunications Goods and Services.”

In recent years, there have been several changes to Brazilian tax laws and their interpretation, which has created uncertainty for our business in how it calculates and complies with the relevant tax burdens. Further changes in tax regulations, such as a possible tax reform previously announced by the Federal Government, could impact our financial assets and liabilities as well as our pricing, which could have a material adverse effect on our business, financial condition and results of operations.

In September 2021, the Brazilian Federal Supreme Court (“STF”) ruled that the Corporate Income Tax (“IRPJ”) and the Social Contribution on Net Income (“CSLL”) are not levied on interest amounts received by taxpayers due to the application of the base SELIC interest rate applied to the refund of overpaid taxes. Currently, no temporal limitations on this granted right have been determined. However, the process has not yet been finalized in the STF.

In order to limit the ability for state governments to undertake aggressive taxation, the Brazilian Federal Constitution prescribes that the ICMS can be variable, according to the essentiality of the goods and services. As such, the most essential goods and services should generally have lower rates than luxurious goods and services.

Accordingly, in December 2021, the STF also ruled that telecommunications services must be taxed at the general ICMS rate provided for in each state’s law. In the leading case, taxpayers required recognition of the unconstitutionality of the rate of 25% levied on the supply of communication services in the State of Santa Catarina where the general rate is 17%. The STF decided that communication services should be taxed at the general rate and softened the effects of this decision on the state by providing that it becomes effective only in 2024.

Despite this decision, the Federal Congress enacted, on June 2022, Complementary Law No. 194/2022, which provides that communications and other activities, such as fuels, natural gas, electricity and public transportation, are essential goods and services, and, consequently, limited the ICMS levied on such transactions to the minimum tax rate of each State, which varied at the time from 17% to 18%. Therefore, the imposition of ICMS rates higher than the general rates of each State for the goods and services was prohibited by law from June 2022 onwards.

Due to this reduction, states were expected to have a significant tax collection decrease by the end of 2022, estimated at R$33.5 billion. In order to address and prevent the expected loss, a study by COMSEFAZ, a council of state finance secretaries, recommended state governments raise their general ICMS rate by 4 percentage points from 2023 onwards. In the same cases, the COMSEFAZ study also recommended the ICMS general rate increase of 7 percentage points.

As a result, many states have elected to raise the ICMS general rate as a way to offset their otherwise reduced tax collection. In some states, the general rate of the ICMS has been raised to 22%. The impact of this reduction on our business cannot currently be accurately measured due to a number of variables, such as customer base, future market and, price.

Also in 2022, Complementary Law No. 190/2022 was enacted to regulate the ICMS levied on interstate operations with final consumers or non-ICMS taxpayers. On interstate sales to final consumers, the ICMS should be split between the state of origin and state of destination, as follows: (a) to the state of origin, the ICMS is calculated with the interstate rate (4%, 7% or 12%); and (b) to the state of destination, the ICMS is calculated based on the difference between the interstate rates used in the transaction and the rate applicable to internal transactions in the state of destination (usually from 17% to 21%), also known as ICMS DIFAL.

According to this law, the ICMS DIFAL should be determined based on a double basis calculation. For us, it should mostly impact our fixed assets acquisitions and, although it should represent an increase in the cash out, the additional tax should be mainly recovered as a credit input on a monthly basis throughout the following four years.

In relation to other taxes, there were some relevant changes regarding the Federal Excise Tax (IPI). In February 2022, the Government issued a decree reducing the tax by 25% on average for several products sold in Brazil. In April, a new decree was enacted, increasing the IPI reduction to 35%, except for products produced in the Manaus Duty-Free Zone (“ZFM”). However, both decrees were suspended by a decision of the Supreme Court to preserve the competitiveness of the ZFM region, which could be harmed by the IPI reduction in the other regions of the country. Companies operating in Brazil are awaiting new determinations by the tax authorities regarding these issues.

From a federal tax perspective, at the end of 2022, there was new relevant tax legislation enacted, including Provisional Measure (“MP”) No. 1,152, which changed the legislation on IRPJ and CSLL, providing for new transfer pricing rules. MP No. 1,152/2022 aims to align the Brazil’s rules with international standards and results from a process aimed at adapting Brazilian standards to those recommended by the Organization for Economic Cooperation and Development (OECD). To this end, there was an amendment to the arm’s length principle and changes to transfer pricing rules which used to be exclusive to Brazil. Its effects are optional from 2023 and mandatory from 2024 onwards. Note, however, that the Provisional Measure has to be converted into Law in up to 120 days (i.e. by June 1, 2023), in order to be current for fiscal years 2023 and 2024.

The other relevant change in 2022 refers to PIS and Cofins. In December of 2022, the Brazilian Federal Revenue Office (“RFB”) published the Normative Instruction (“IN”) No. 2,121/2022, regulating the PIS and COFINS social contributions. In essence, IN No. 2,121/2022 – which replaced IN No. 1,911/19 – consolidated the new guidelines on ascertainment, inspection, collection and administration of the contributions for: (i) PIS/Pasep; (ii) Contribution for the Financing of Social Security (Cofins); (iii) PIS/Pasep-Import; and (iv) Cofins-Import.

Furthermore, on December 30, 2022, Decree No. 11,322/22 reduced by half the PIS/Cofins rates levied on financial income earned by companies subject to the non-cumulative regime. The rates changed from 0.65% and 4% to 0.33% and 2%, respectively. According to the Decree, the reduction would take effect from January 1, 2023. However, on January 2, it was revoked by the newly inaugurated Government, reestablishing the PIS and Cofins rates levied on financial income to its original values.

The tax reform that had been expected for 2022 was not passed into law by the Brazilian legislature. Therefore, a bill that proposed changes in the Corporate Income Tax (“CIT”) regarding: (i) IoE non-deductibility; (ii) the taxation of dividends; and (iii) in an effort to balance these new taxes, a reduction in the CIT rate (from 34% to 29%) was not enacted and so was not applicable for taxable events in 2022. The reduction in the CIT rate presented in the bill was not enough to neutralize the impacts of the end of the IoE deductibility and the taxation of dividends, which would increase the impact on our cash out by 23-26p.p. and generate a negative economic impact on net income of approximately R$185 million in 2022 and approximately R$156 million in 2023. In addition, the minority shareholders will have a negative impact of 5 p.p. on their remuneration and some specialists believe that the impact on TIM’s valuation could reach -10%. Finally, in addition to the changes aforementioned, the bill could interfere in the behavior of economic agents, especially in relation to possible mergers and acquisitions, and stimulate rent-looking at the expense of entrepreneurship, since investments in investment funds will have less taxation than dividends distributed by the companies to their shareholders. However, as the law was ultimately not enacted in 2021 nor 2022, its effects should not apply to the tax periods in 2022 nor 2023.

There is a project, the Social Contribution on Operations with Goods and Services bill, which intends to unify PIS and COFINS into a single contribution of 12% on gross revenue and with a broad credit basis. The bill’s text is under discussion and many sectors are arguing in relation to the relevant increase in their respective tax burdens. At the moment, the text remains undefined and so there are no impacts for our tax liability. Any such changes in tax law could have a material adverse effect on our financial assets and liabilities, if enacted.

Inflation, and government measures to curb inflation, may adversely affect the Brazilian economy and capital market, our business and operations and the market prices of our common shares or the ADSs.

In the recent past, Brazil has experienced high rates of inflation and the government's measures taken in an attempt to curb inflation have had significant negative effects on the Brazilian economy. The COVID-19 pandemic increased market volatility, enhanced existing risks and, despite the resulting contraction of economic activity, the Brazilian economy continued to suffer from high rates of inflation during 2022.

Uncertainty regarding certain future government fiscal measures which may be taken to reduce inflation could affect the confidence of investors and the market in general, and, consequently, affect our operating and financial results and increase volatility in the Brazilian capital markets.

Exchange rate movements and interest rate fluctuation may have an adverse effect on our business and the market prices of our shares or the ADSs.

Appreciation of the real against the U.S. dollar may lead to a deterioration of the country's current account and the balance of payments, as well as to a dampening of export-driven growth. Any such appreciation could reduce the competitiveness of Brazilian exports and adversely affect net sales and cash flows from exports. Devaluation of the *real* relative to the U.S. dollar could create additional inflationary pressures in Brazil by increasing the price of imported products, which may result in the adoption of deflationary government policies. The sharp depreciation of the real in relation to the U.S. dollar may generate inflation and governmental measures to fight possible inflationary outbreaks, including the increase in interest rates, which reduces the purchasing power of consumers and raises the cost in the credit market. Devaluations of the real would reduce the U.S. dollar value of distributions and dividends on our common shares and ADSs and may also reduce the market value of such securities. Any such macroeconomic effects could adversely affect our net operating revenues and our overall financial performance.

We acquire equipment and handsets from global suppliers, the prices of which are denominated in U.S. dollars. Depreciation of the real against the U.S. dollar may result in a relative increase in the price of our equipment and handsets. Thus, we are exposed to foreign exchange risk arising from our need to make substantial dollar-denominated expenditures, particularly for imported components, equipment and handsets, that we have limited capacity to hedge. See "Item 5. Operating and Financial Review and Prospects."

At present, 45% of our current indebtedness is denominated in foreign currency (U.S.$), 49% linked to inflation (IPCA) and all subject to cross currency swaps that are tied to Brazilian floating interest rates. Only 6% of the indebtedness is tied to TJLP (*Taxa de Juros de Longo Prazo*), a rate that is calculated using inflation targets and estimates. Any increase in the interbank deposit certificate (*certificado de depósito interbancário*) ("CDI"), rate may have an adverse impact on our financial expenses and our results of operations. See "Item 11. Quantitative and Qualitative Disclosures About Market Risk."

The effects of the weak domestic economy could reduce purchases of our products and services and adversely affect our results of operations, cash flows and financial condition.

Although there were expectations for a strong global economy recovery, upon the lifting of the COVID-19 related restrictions due in part to the success of vaccination campaigns worldwide and the evolution of the pandemic response, the expectations for a full domestic economic recovery in Brazil remain low when compared to certain other countries, especially considering potential economic and political problems. The recent economic instability in Brazil and the deterioration of the political environment have all contributed to a decline in market confidence in the Brazilian economy. Unfavorable macroeconomic conditions in Brazil are expected to continue throughout 2023 as uncertainty remains as to the short, medium and long term consequences of the financial, monetary and other policies implemented in response to the COVID-19 pandemic, such as high inflation. Brazil's slow rate of economic growth, increases and maintenance of high base interest rates, high unemployment rate and general price increases may limit the availability of credit, income and purchasing power of our customers, thereby adversely affecting demand for our products and impacting our economic results.

The economy’s performance directly impacts our results of operations as a result of certain of our assets and liabilities being subject to inflation adjustment, and if inflation rises, disposable income of families may decrease in real terms, leading to lack of purchasing power among our customer base. In response to such tighter credit, negative financial news or declines in income or asset values, consumers and businesses may postpone spending, which could have a material adverse effect on the demand for our products and services. A loss of customers or a reduction in purchases by our current customers could have a material adverse effect on our financial condition, results of operations and cash flow and may negatively affect our ability to meet our growth targets.

We may be impacted by volatility in the global financial markets.

We are susceptible to swings in global economic conditions, typified most recently by difficult credit and liquidity conditions and disruptions leading to greater volatility, which is enhanced by continued tensions between the United States and other commercial partners, such as China. The global economy has largely recovered from the crisis of 2007, however markets remain subject to ongoing volatility factors including interest rate divergence, geopolitical events such as the consequences of Brexit and global growth expectations, and there is no assurance that similar conditions will not arise again. In the long term, as a consequence, global investor confidence may remain low and credit may remain relatively lacking. Hence, additional volatility in the global financial markets may occur.

The COVID-19 pandemic, and the short, medium and long term consequences of the financial, monetary and other policies implemented in response to the COVID-19 pandemic, has been a source of uncertainty for global economic activity. During the peak of the pandemic, governments and central banks around the world undertook unprecedented measures to try to contain the spread of the disease whilst seeking to protect local economies and consumer confidence. Although the contagion rate for the virus has subsided, the effects of financial and monetary policy put into effect during the pandemic are likely to have a continuing effect on the global economy, including in Brazil. At the beginning of 2023, markets and the global economy have continued to also be further adversely affected by the ongoing war between Russia and Ukraine and the related sanctions imposed on Russia by the United States and its allies. The materialization of these risks has affected global growth and may decrease investors’ interest in assets located in Brazil, which may adversely affect the market price of our securities, possibly making it more difficult for us to access capital markets and, as a result, to finance our operations in the future.

Developments and the perception of risk in other countries may adversely affect the Brazilian economy and market price of Brazilian issuers’ securities.

The market value of securities of Brazilian issuers is affected by economic and market conditions in other countries, including the United States, European countries, as well as in other Latin American and emerging market countries. Although economic conditions in Europe and the United States may differ significantly from economic conditions in Brazil, investors’ reactions to developments in these other countries may have an adverse effect on the market value of securities of Brazilian issuers. Additionally, crises in other emerging market countries may diminish investor interest in securities of Brazilian issuers, including our securities. This could adversely affect the market price of our securities, restrict our access to capital markets and compromise our ability to finance our operations in the future on favorable terms, or at all.

In the recent past, there was an increase in volatility in all Brazilian markets due to, among other factors, uncertainties about how monetary policy adjustments in the United States would affect the international financial markets, the increasing risk aversion to emerging market countries, and uncertainties regarding Brazilian macroeconomic and political conditions. These uncertainties adversely affected us and the market value of our securities.

In 2022, the military conflict between Russia and Ukraine contributed to further increases in the prices of energy, oil and other commodities and to volatility in financial markets globally, as well as a new landscape in relation to international sanctions. It is unclear whether these challenges and uncertainties will be contained or resolved, and what effects they may have on the global political and economic conditions in the long term.

In addition, we continue to be exposed to disruptions and volatility in the global financial markets because of their effects on the financial and economic environment, particularly in Brazil, such as a slowdown in the economy, an increase in the unemployment rate, a decrease in the purchasing power of consumers and the lack of credit availability.

Disruption or volatility in the global financial markets could further increase negative effects on the financial and economic environment in Brazil, which could have a material adverse effect on our business, results of operations and financial condition.

Risks Relating to our Common Shares and the ADSs

Our controlling shareholder has power over the direction of our business.

Telecom Italia, through its ownership of TIM Brasil Serviços e Participações S.A. ("TIM Brasil"), our controlling shareholder, has the ability to determine actions that require shareholder approval, including the election of a majority of our directors and, subject to Brazilian law, the payment of dividends and other distributions. Telecom Italia's single largest shareholder is Vivendi, which is able to exercise significant influence over Telecom Italia. Telecom Italia may pursue acquisitions, asset sales, joint ventures or financing arrangements or may pursue other objectives that conflict with the interests of other shareholders and which could adversely affect our business, financial condition and results of operations.

Holders of our ADSs are not entitled to attend shareholders' meetings and may only vote through the depositary.

Under Brazilian law, only shareholders registered as such in our corporate books may attend shareholders' meetings. All common shares underlying our ADSs are registered in the name of the depositary. A holder of ADSs, accordingly, is not entitled to attend shareholders' meetings. Holders of our ADSs may exercise their limited voting rights with respect to our common shares represented by the ADSs only in accordance with the deposit agreement relating to the ADSs. There are practical limitations upon the ability of ADS holders to exercise their voting rights due to the additional steps involved in communicating with ADS holders. For example, we are required to publish a notice of our shareholders' general meetings in certain newspapers in Brazil. Holders of our shares can exercise their right to vote at a shareholders' general meeting by attending the meeting in person or voting by proxy. By contrast, holders of our ADSs will receive notice of a shareholders' general meeting by mail from the ADR depositary following our notice to the ADR depositary requesting the ADR depositary to do so. To exercise their voting rights, ADS holders must instruct the ADR depositary on a timely basis. This voting process will take longer for ADS holders than for direct holders of our shares.

We cannot assure you that holders will receive the voting materials in time to ensure that such holders can instruct the depositary to vote the shares underlying their respective ADSs. In addition, the depositary and its agents are not responsible for failing to carry out holder's voting instructions or for the manner of carrying out your voting instructions. This means that holders may not be able to exercise their right to vote and may have no recourse if our shares held by such holders are not voted as requested.

Holders of our ADSs or common shares in the United States may not be entitled to participate in future preemptive rights offerings.

Under Brazilian law, if we issue new shares for cash as part of a capital increase, we generally must grant our shareholders the right to purchase a sufficient number of shares to maintain their existing ownership percentage. Rights to purchase shares in these circumstances are known as preemptive rights. We may not legally allow holders of our ADSs or common shares in the United States to exercise any preemptive rights in any future capital increase unless we file a registration statement with the SEC with respect to that future issuance of shares or the offering qualifies for an exemption from the registration requirements of the Securities Act. At the time of any future capital increase, we will evaluate the costs and potential liabilities associated with filing a registration statement with the SEC and any other factors that we consider important to determine whether to file such a registration statement. We cannot assure holders of our ADSs or common shares in the United States that we will file a registration statement with the SEC to allow them to participate in a preemptive rights offering. As a result, the equity interest of those holders in us may be diluted proportionately.

Cash dividends, interest on shareholders' equity and other cash distributions, as well as judgments seeking to enforce our obligations in respect of our shares or ADSs in Brazil will be payable only in reais.

We pay any cash dividends, interest on shareholders' equity and any other cash distributions with respect to our common shares in reais. Accordingly, exchange rate fluctuations affect the U.S. dollar amounts received by the holders of ADSs on conversion by the depositary of dividends and other distributions in Brazilian currency on our common shares represented by ADSs. Fluctuations in the exchange rate between Brazilian currency and the U.S. dollar affects the U.S. dollar equivalent price of our common shares on the Brazilian stock exchanges. In addition, exchange rate fluctuations may also affect our dollar equivalent results of operations. See "Item 5. Operating and Financial Review and Prospects."

If proceedings are brought in the courts of Brazil seeking to enforce our obligations with respect to our shares or ADSs, we will not be required to discharge our obligations in a currency other than *reais*. Under Brazilian exchange control limitations, an obligation in Brazil to pay amounts denominated in a currency other than *reais* may only be satisfied in Brazilian currency at the exchange rate, as determined by the Central Bank, in effect on the date the judgment is obtained, and such amounts are then adjusted to reflect exchange rate variations through the effective payment date. The then prevailing exchange may not afford non-Brazilian investors with full compensation for any claim arising out of or related to our obligations under our shares or the ADSs. See "—A. Selected Financial Data—Exchange Rates" for information regarding exchange rates for the Brazilian *real*.

Holders of ADSs or common shares could be subject to Brazilian income tax on capital gains from sales of ADSs or common shares.

According to Article 26 of Law No. 10,833 of December 29, 2003, capital gains realized on the disposition of assets located in Brazil by non-Brazilian residents, whether or not to other non-residents and whether made outside or within Brazil, are subject to taxation in Brazil. Since January 1, 2017, the rate of the income tax on capital gains accrued by non-Brazilian resident individuals may vary between 15% and 22.5% depending on the capital gain amount. Ultimately, a 25% rate may apply if the capital gain is realized by investors located at Low or Nil Tax Jurisdictions (i.e., a country that does not impose any income tax or that imposes tax at a maximum rate of less than 20% or 17%, depending on whether the country is aligned with the international standards of fiscal transparency). Although we believe that the ADSs will not fall within the definition of assets located in Brazil for the purposes of Law No. 10,833/2003, considering its general and unclear scope and the absence of any judicial guidance in respect thereof, we are unable to predict whether such interpretation will ultimately prevail in the Brazilian courts. See "Item 10. Additional Information—E. Taxation—Brazilian Tax Considerations."

Gains realized by non-Brazilian holders on dispositions of common shares in Brazil or in transactions with Brazilian residents may be exempt from Brazilian income tax or taxed at a rate that may vary between 15% and 25%, depending on the circumstances. Gains realized through transactions on Brazilian stock exchanges are exempt from the Brazilian income tax, provided that the transactions are carried out in accordance with the Brazilian National Monetary Council's (*Conselho Monetário Nacional*), or CMN's, Resolution CMN 4,373 (that replaced Resolution CMN 2,689) and the foreign investor is not located in Low or Nil Tax Jurisdictions. Gains realized through transactions with Brazilian residents or not executed on the Brazilian stock exchanges are subject to tax at a rate (1) that may vary between 15% and 22.5% depending on the capital gain amount if the investors are located in regular taxation jurisdictions, or (2) of 25% if the capital gain is realized by investors located in Low or Nil Tax Jurisdictions.

Please refer to "Item 10. Additional Information––E. Taxation––Brazilian Tax Considerations––Taxation of Gains."