UNIVERSIDADE DE SÃO PAULO

ESCOLA POLITÉCNICA DA UNIVERSIDADE DE SÃO PAULO

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PERFORMANCE ANALYSIS OF LISTED COMPANIES IN THE BRAZILIAN STOCK EXCHANGE MARKET (B3) IN RELATION TO ESG INDEXES AND SUSTAINABLE FINANCE INSTRUMENTS

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2021

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Trabalho de Formatura apresentado à

Escola Politécnica da Universidade de São Paulo

para obtenção do diploma de Engenheira de Produção

Orientador: Prof. Dr. Mauro Zilbovicius

SÃO PAULO

2021

FICHA CATALOGRÁFICA

Hibner, Carolina Ades

Performance Analysis of Listed Companies in the Brazilian Stock Exchange Market (B3) in relation to ESG Indexes and Sustainable Finance Instruments – São Paulo, 2021

101p.

Trabalho de Formatura - Escola Politécnica da Universidade de São Paulo. Departamento de Engenharia de Produção

(i) Índices ESG; (ii) Produtos Financeiros Sustentáveis; (iii) Bolsa Brasileira

"*You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete*." R. Buckminster Fuller

ACKNOWLEDGEMENTS

The following project was developed with the assistance of many people and institutions. Particularly, I would like to express my deepest gratitude:

To the University of São Paulo and Politecnico di Milano, which summarized my academic formation. I am thankful for being part of the double degree exchange program, which not only gave me international experience, but also complemented the regular management engineering course with a different perspective and focus on financial topics.

To my academic supervisor, prof. Dr. Mauro Zilbovicius, who assisted me through the process of developing this thesis.

And to my family and friends for the love and support during my whole life and academic journey.

RESUMO

Dado o contexto atual de enxergar o impacto como sendo crucial ao negócio, é importante entender como as empresas estão lidando com as novas exigências dessa tendência e com as mudanças na regulamentação dos países. Também, é fundamental ver como essa tendência impacta o seu desempenho financeiro e a percepção que os investidores têm dela. Esse projeto tem a intenção de trazer uma análise de empresas listadas na Bolsa Brasileira (B3), especialmente com relação ao seu desempenho financeiro com índices ESG e produtos financeiros sustentáveis. Além da análise numérica, o estudo examina as tendências do mercado, de forma mais holística, compreendendo a parte estratégica envolvida. *ESG Investing* tem aparentado ser uma alterna às técnicas de investimento tradicionais quando acontece junto com as atividades chave da empresa. No caso brasileiro, em especial, a mitigação dos riscos e a manutenção de uma estratégia sustentável são aspectos interessantes trazidos por essa abordagem. Além disso, existe um movimento global mostrando que companhias vão estar cada vez mais nessa tendência e será impossível operar sem considerá-la.

Palavras-chave: (i) Índices ESG; (ii) Produtos Financeiros Sustentáveis; (iii) Bolsa Brasileira

ABSTRACT

Given the actual context of seeing impact as crucial in the businesses, it is important to understand how companies are dealing with the new requirements of this tendency and with the countries' regulations changes. In addition to that, it is fundamental to see how this trend impacts the financial performance and the investors' perception of them. This project is intended to provide an overview on listed companies in the Brazilian Stock Exchange (B3), especially in the relation of the financial performance with the ESG indexes and sustainable finance instruments. Besides the numerical analysis, the study looked at market trends, in a more holistic approach, understanding the strategic behind. ESG Investing seems to be an attractive alternative to traditional investment techniques, once performed together with the core activities of the company. Considering specially the Brazilian case, the risk mitigation and the maintenance of a long-term sustainable strategy are interesting aspects brought by this strategy. Furthermore, there is a global movement showing that companies will be much more into this tendency, and it will be impossible to operate without considering it.

Keywords: (i) ESG Indexes; (ii) Sustainable Finance Instruments; (iii) Brazilian Stock Exchange

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SUMMARY

1. INTRODUCTION

The present work has the objective of analyzing the performance of listed companies in the Brazilian Stock Exchange Market in relation to the ESG Indexes and Sustainable Finance Instruments. There is a global trend related to ESG Investing, making it almost impossible for companies to operate, today, without considering those attributes. It is not just about protecting the environment anymore, but to create and sustain a long-term sustainable strategy and mitigate risks involved in the process.

In this way, as the graduation project from both *Escola Politécnica da USP*, for *Engenheria de Produção's* degree, and Politecnico di Milano, for the Master of Science in Management Engineering in the stream of Finance, this research took place. The methodology was based on a numerical analysis of the performance of the stocks compared to the issuance of the Sustainable Finance Instruments and their presence in the ESG Indexes. After that, it was analyzed the relationship between this performance with the sustainable strategy developed by reference companies. This made it possible to understand how the relationship between the core operation of those companies and its approach should be.

Beginning with the literature review, studying the global scenario and the indexes, the work was followed by the explanation of the Brazilian context and its indexes and products. After that, the pure numerical analysis was presented and a deeper dive into the sustainable strategy of selected examples was done. In the end, it was possible to see the dependence of the core operations of the companies with the sustainable strategy to build a solid long-term strategy.

2. THE IMPACT REVOLUTION AND THE MEASUREMENT PROBLEM

2.1. THE IMPACT REVOLUTION

The mainstream economic models used nowadays were developed in an era of resources abundance and limited emissions. The environmental aspect was not a concern, just the relationship between capital and labor mattered. Together with that, mass production in a competitive economic system has led to bad working conditions, long hours and underpaid employees (SCHOENMAKER e SCHRAMADE, 2019).

However, in the last decade, environmental and social aspects are not marginal anymore, becoming central and crucial issues to the economic system. Drivers of transformation, that can be seen in the current scenario, are putting impact in the spotlight. It is not possible anymore to build long term sustainable strategies not taking into account social and environmental trade-offs. Impact is based on the triad of intentionality, measurability and additionality. Organizations must address solutions to social and environmental problems, the outcome of this should be measurable qualitative and quantitatively speaking and the impact should be responsible for generating a positive change in the environment that was not possible before.

The welfare system is in crisis, traditional measures implemented by the states to address social needs and protection do not apply anymore in the current scenario. They were based on the strength of national states with an industrial society, with rapid growth. Mass production and consumption generated a lot of income that was distributed via huge taxes. Nowadays, businesses are much more focused on new models of production and services. Also, the decrease in the income generation motivated a vision of public spending reviews and cuts. Together with that, society is changing. The previous welfare system relied on defined family composition and roles, demographic stability and stable expectations. However, the classical family roles changed, fertility rates are decreasing, the population is ageing, and migrations are much more common.

In addition to that, people are facing new societal challenges. The urbanization phenomena, that will end up with the majority of the population living in cities in some years, put in evidence the inequality, poverty, education and scarcity of resources for some part of the population. It is also important to state that many innovations and technological developments relied on fossil fuels that are now under pressure and have a huge contribution in the climate change problem.

Another aspect to point out is that technological innovations contribute to the development of many solutions but can create new environmental and social problems that are also important to

be addressed. New regulations and business models should be introduced, in order to cope with the fast and unpredictable impact generated from those innovations.

The importance of new political advocacies initiatives in this change of mindset has to be highlighted. They have the intention to put policy makers together to fight against common problems and to promote the development of the same areas, guiding the transaction towards a more sustainable and inclusive economy. One of the main initiatives was the definition of the 17 Sustainable Development Goals (SDGs) to address the 2030 Agenda for Sustainable Development made by the United Nations. Those goals, that can be summarized in Figure 1, are a global partnership to promote prosperity to humankind aligned with social and environmental constraints (CALDERINI, 2020).

Figure 1 - 17 Sustainable Development goals[1]

This new way of approaching the economy and its implications can be defined as Sustainable Development. This integrated concept puts together economic, social and environmental developments in a way that current and future generations have the resources needed without stressing the system.

[1] Source: (UNITED NATIONS BRUSSELS, 2021)

2.2. MEASURING IMPACT

One of the challenges of the Impact Revolution is the measurement of the impact generated by companies and other initiatives. This is done by making a comparison between what would have happened differently without the output of the initiative in analysis and estimating a cause-effect relationship. Ultimately, this way of looking at impact sees it as the extent to which an action has a particular effect (Impact Measurement Definition, 2021).

In many cases, however, mistakenly the outcome is measured rather than the impact itself. It is fundamental to ensure, also, that the underlying data is reliable and sufficiently comparable, in order to avoid impact washing – companies or investors that claim having social or environmental impact without actually using them (Is participatory impact investing the antidote to "impact washing?", 2021). The logic chain of Impact Measurement, shown in Figure 2, discriminates the different concepts in order to align the process and guarantee its credibility (Sustainable Finance: it is action time, 2021).

	INPUT	OUTPUT	OUTCOME	IMPACT	CONTRIBUTION TO SDGs
DEFINITION	Resources (human capital, financial capital, operating capital invested in the activity)	Tangible products from the activity	Changes resulting from the activity	Broader change occurring in communities or systems resulting from the activity	SDG 4: quality education
CONCRETE EXAMPLE	Investment in microfinance institutions	Number of microentrepreneurs reached, number of microbusinesses created	Number of microentrepreneurs who were able to send their children to school	Increased literacy rates	% of contribution to SDG 4

Figure 2 - Impact Measurement Logic Chain[2]

2.3. CONSEQUENCES FOR THE FINANCIAL MARKET

Finance has an important role in the allocation of resources in sustainable corporations and projects to accelerate the transaction to a more sustainable economy. Sustainable finance aims at investing in companies that manage in a good way the trade-off between economic, social and environmental gains, together with the financial returns.

[2] Source: (Sustainable Finance: it is action time, 2021)

The financial system has the function of producing information ex ante about possible investments and allocation of capital. Allocating funds in the most productive way is the role of the system, however, it is also well positioned in a way to assist in the decision making regarding the trade-off between the sustainable goals. Also, the system has the function of monitoring investments and executing corporate governance in the companies invested. With that, it can balance the interest of many stakeholders. In addition to that, the financial system executes the role of facilitating the trading, diversifying and managing the risk. In this way, the uncertainties of the environment can be mitigated, and the long-term sustainability of the strategy is more likely to be achieved (LEVINE, 2004).

Together with that, due to the increase in the sustainability awareness, managers are searching for new opportunities to hedge against risks and to make the adaptation into this new mindset easier, also following the new regulatory frameworks. At the same time, the technological revolution creates a range of options for firms to innovate, allowing them to reach higher market shares and more attractive margins. The implementation of sustainable practices, like using renewable power technologies, is possible due to this revolution and it contributes to the sustainability side. It is not only about positioning the business inside the regulatory trend but also being benefited from new technological developments and changes in consumers' mind.

Consequently, investor should consider changing their investment approaches when valuing stocks and projects incorporating potential gains of sustainable measures.

2.4. VALUE AND SOCIAL RESPONSIBILITY

In 2009, 181 CEOs of America's most important companies signed the new version of the Statement on the Purpose of a Corporation, by the Business Roundtable – non-profit organization formed by CEOs of American companies. They are committing their companies to act in favor of all its stakeholders. The topics of the document can be summarized in delivering value to customers, investing in the employees, dealing fairly and ethically with the suppliers, supporting the communities in which they work and generating long term value to shareholders (Business Roundtable Redefines the Purpose of a Corporation to Promote 'An Economy That Serves All Americans', 2021).

This is an example of an initiative that important companies are committing nowadays when talking about social responsibility. It is not just about the image of the company or the adequacy to

the requirements and regulatory frameworks, but also that being "good" creates a cycle of positive outcomes, which makes the company more valuable.

The value of a company is determined by the discounted expected cash flows that will be generated in the future, considering its risk by the use of the cost of capital (k) in the formula bellow:

$$Value\ of\ the\ company = \sum^{T} \frac{Expected\ CF_n}{(1+k)^n} \quad (1)$$

Inside this equation, there are four drivers of value that can be analyzed. The first one is the growth lever, that refers to the increase in revenues as a result of growing markets or an increase in market share. After that, there is the profitability lever. It is based on the operating margin, the ability of the enterprise to be efficient in its operation. Also, the investment efficiency lever should be considered, it is the measure of how much reinvestment is needed to deliver the forecasted increase in revenues. And the last one is the risk lever. It is related to the default probability, the higher the risk, lower the value of the company.

By looking at the inputs of those levers, it is possible to see how companies acting in a socially responsible way can make positive impact in their financial structure. Figure 3 briefly summarizes the pay-off of being good when talking about the value of the company (CORNELL e DAMODARAN, 2020).

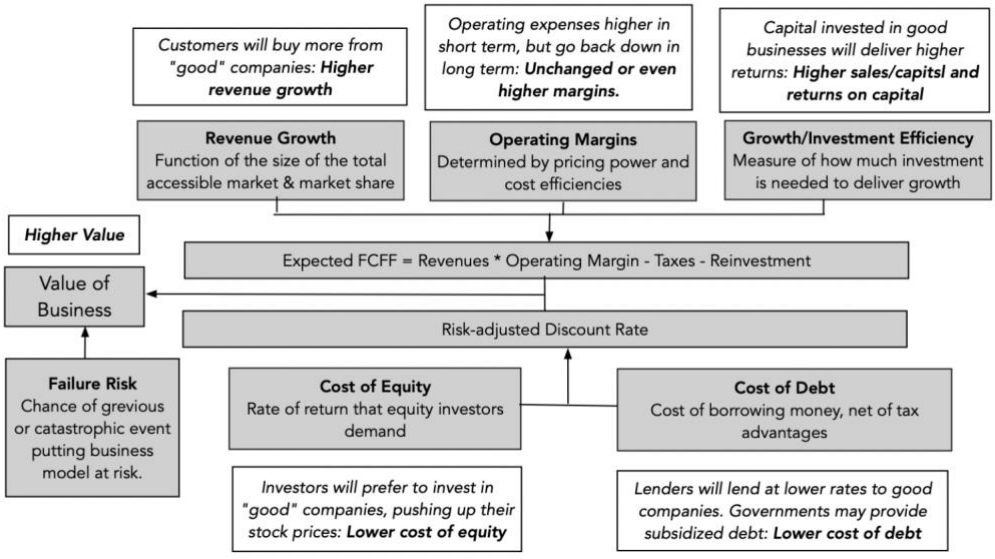

Figure 3 - The pay-off of being good[3]

[3] Source: (CORNELL e DAMODARAN, 2020)

2.5. ESG INVESTING

The concept of Socially Responsible Investing (SRI) refers to the investment process that considers social and environmental consequences of investments. This type of investment was first introduced in United States in the 60s, it considers both investor's financial needs and the impact the company would generate in society.

In the mid 2000s, as this market became more mature, investors saw the complexity of running those businesses and introduced non-financial indicators, ESG, environmental, social and governance. It is now seen as an important mechanism to measure the sustainability of investments (TRIPATHI e BHANDARI, 2014).

When searching for investment targets that will outperform the market, ESG investors evaluate also non-traditional aspects that may generate value, together with the financial return. It is possible to say that this additional relevant information allows more differentiated investment judgement by better assessing risks and opportunities (BASSEN e KAVACS, 2008). Assuming that ESG awareness means a source of competitive advantage, the ability of a company to generate positive environmental and social impacts is not the main driver to be considered when deciding where to invest, but a desirable consequence.

Some of the non-traditional aspects incorporated in this analysis, which can represent long-term competitive advantage of a determined company over its competitors, create substantial value and enhance risk-adjusted returns. Examples of non-financial metrics analyzed by ESG equity and corporate bonds investors can be seen in Figure 4:

GOVERNANCE ISSUES	SOCIAL ISSUES	ENVIRONMENTAL ISSUES
Business integrity	Human rights	Climate change
Shareholder rights	Employee relations	Biodiversity
Executive pay	Skilled labor	Energy resources and management
Audit practices	Health and safety	Biocapacity and ecosystem quality
Board independence and expertise	Diversity	Air pollution
Fiduciary duty	Customer relations	Natural resources
Transparency/accountability	Product responsibility	Water resources and pollution
Related-party transactions		
Dual-class share structures		
Tax practices		

Figure 4 - ESG Metrics[4]

[4] Source: (CFA INSTITUTE AND PRI, 2018)

Several different ESG based portfolio strategies can be implemented when talking about impact investing:

- **Screening**: portfolios are constructed by just including ESG standard respectful companies and eliminating non ethical sectors, like weapons tobacco and gambling. It is a passive approach that can be relatively easily applied but does not consider each company individually.
- **ESG integration**: only high ESG rating companies are included in the portfolio. It is an active based approach due to the individual assignment of ESG rating to companies. It demands a lot of data and time to analyze every company.
- **Best-in-class selection**: portfolio based only in companies that, within the same sector, have the best ESG rating scores.
- **Focalization**: this strategy focuses on an individual investment issue, in this way, building a portfolio which could be eco-friendly, not exploring employees and highlighting governance issues, for example.
- **Engagement**: the strategy will not only focus in building the portfolio in the investment phase, but will led investors to be active afterwards, including open criticism in appropriate forums, such as shareholders' meetings, in order to convince the funded companies to improve (GIUDICI, ANNESE e CORRADINI, 2020).

As an evolution of those techniques, the CFA Institute with the PRI (Principles for Responsible Investment) have developed an integrated Framework to be used as a reference for companies in identifying the strategies that are most useful for them and appliable to their situation (Figure 5). It can be defined as the explicit and systematic inclusion of ESG factors in investment analysis and decisions.

It has three components. The first one, the inner circle is related to the qualitative analysis. In a nutshell, it is the research part that is responsible for information gathering, materiality analysis and active ownership assessment. Practitioners gather financial and ESG information from multiple sectors; analyze relevant information to identify which aspects affect the company, sector and country; and discuss those aspects with the company. The second one, the middle circle, is related to the security and portfolio analysis. The impact of those financial and ESG information on the corporate and investment performance of the companies is analyzed. This is used to adjust the forecasted financials, valuation models variables, multiples, ratios, credit assessments and portfolio

weightings. The last one, the outer circle, is related to the investment decision. It is basically the evaluation of whether how investors should balance their portfolios (CFA INSTITUTE AND PRI, 2018).

Figure 5 - ESG Integration Framework[5]

It is important to stress out that there is a difference between ESG Investing and Impact Investing. While the first one looks at the company's environmental, social and governance practices, together with traditional financial measures, the second one looks to help the company to make a project or operate in a positive way to benefit society. Impact Investing intentionally seek investments that contribute to the SGDs (The difference between ESG and impact investing and why it matters, 2020).

[5] Source: (CFA INSTITUTE AND PRI, 2018)

2.6. RELATED STUDIES

Morgan Stanley Institute of Sustainable Investing has developed a study to compare the performance of sustainable funds with traditional ones. The research compared the evolution of total returns and also of a risk parameter. The result was that sustainable funds had a performance, in terms of return, in line with the traditional ones but showed a reduction of 20% in the downside risk. Also, in periods of extreme volatility, sustainable funds tended to be more stable. In contrary with what most people believe, in sustainable investing there is no trade-off in financial performance (MORGAN STANLEY INSTITUTE FOR SUSTAINABLE INVESTING, 2019).

Another research developed by Morningstar has compared the performance of European sustainable funds in relation to traditional ones. The study was performed in an interval of 10 years finishing in the first quarter of 2020 (including the beginning of the pandemic scenario). The conclusions were similar to the ones before. There was no financial trade-off for sustainable funds, in fact, the majority of them have outperformed when comparing to the traditional ones. Analysis shown that almost 60% of the sustainable funds had higher successful rates. Also, those funds have shown a higher survivorship rate, fewer funds have closed in relative terms. When looking specially at the covid pandemic period, results are interesting. Sustainable funds have proved to be able to hold better the situation when comparing to the equivalent traditional ones. They have outperformed with excess returns in all but one category (the global large cap one). This result can be explained first by the ESG portfolios. Weighting more in ESG-friendly sectors, like technology and healthcare and less in non ESG-friendly ones, like oil and gas, was a benefit in the pandemic situation. Also, companies with higher ESG scores tend to enjoy more conservative balance sheets and competitive advantages, making them more resilient during market downturns. And finally, those companies tend to be better in treating all their stakeholders, addressing their environmental challenges, with lower levels of controversies. Many such companies are better equipped to weather periods of uncertainty (MORNINGSTAR, 2020). It is clear that ESG nowadays is not only a trendy slogan but also quantitatively shows good responses and should be considered when pivoting a portfolio.

With the objective of investigating the effect of ESG indexes on stock returns, a studied was performed in the University of Rome, taking as source 46 companies in the Eurostoxx50 from 2010 until 2018. The data for ESG indexes was the parameter “ESG Overall” by CSRHub – that incorporates 12 indicators of employee, environment, community and governance performance and

flags many special issues (About CSRHub, 2021). It was possible to reach the conclusion that there is no significant linear correlation between ESG index and stock returns, in this sample. However, it was evident that this index has a statistically and positive impact on returns. There were 7 companies that showed a significant correlation between the variation of the index and stock returns. In this case, the ESG investing lead to higher returns. It can be explained, in a way because of the active role of these companies in the ESG field and to the sector they belong to, especially energy and utilities (LA TORRE, MANGO, *et al.*, 2020).

Another study that is interesting to show was the one performed by the Politecnico di Milano with the partnership of Banor SIM. The performance of 799 bonds listed in the European Stock Market was compared to their improvement in the ESG ratings, positive if improved and negative if it got worse. 234 were investment grade bonds (BBB Moody's rating or higher) and the remaining 565 high yield bonds – this category provides higher returns in comparison to the previous one due to a higher risk associated to it. For the values between 2014 and 2018, when insolvency risk was negligible, ESG indexes did not show a relevant impact on returns. Taking the improvement or worsening, however, there is a correlation with the social component. In cases in which the insolvency risk was considerable, the ESG indexes were more important. Portfolios with focus on Environmental and Governance factors were able to generate significant extra return. For the high yield bonds, it is possible to say that there is a higher focus on the green diversification of assets and the implementation of good practices in the board's composition, to monitor management in a better way and reduce the risk of opportunistic behavior.

Giese, Lee, Melas, Nagy and Nishikawa performed a study to assess the effects of ESG on equity valuation, risk and performance. It was based on the evaluation of the three transmission channels from ESG to financial performance.

The first one was the Cash Flow Channel:

- Companies with a stronger ESG profile are more competitive than their peers. It can be due to more efficient use of resources, better human capital development and better innovation management
- This competitive advantage is used to generate abnormal returns, leading to a higher profitability
- Higher profitability results in higher dividends

The second channel is the Idiosyncratic Risk Channel:

- Companies with a stronger ESG profile tend to have above-average risk control and compliance standards inside it and with the supply chain management
- Due to the better risk control, those companies suffer less frequently from severe incidents such as fraud, corruption and litigation
- Less frequent to risk incidents lead to less stock-specific downside

The third one is the Valuation Channel:

- Companies with a strong ESG profile are less vulnerable to systematic market shocks and therefore show lower systematic risk. For example, companies that rely on commodities and energy, tend to be less vulnerable to changes in its prices, so share prices are less sensible to systematic market risk
- Taking the Capital Asset Pricing Model (CAPM) framework, the risk of the company is translated into parameters: the beta and the equity risk premium. Lower systematic risk means a lower beta and a lower requirement by investors in terms of rate of return
- In the Discounted Cash Flow Method (DCF), a company with lower cost of capital will have a higher valuation

After this analysis, it was examined in which extent a change in company's ESG characteristics has been a leading indicator for changes in systematic and idiosyncratic risk, and how far it will lead to a change in financial target variable of the transmission channels. Companies with an upgraded rating demonstrated a relative improvement in their systematic risk profile. However, this value was statistically less significant than the corresponding analysis of the Valuation Channel. The same happened for the beta analysis, there was a decrease in its value but lower than the analysis for the Valuation Channel. The final step was the analysis of the cost of capital change in the company's valuation. By looking at the earning-to-price ratio, an improvement in the ESG rating, was translated in a reduction in it and, therefore, an increase in valuation (GIESE, LEE, *et al.*, 2019).

In order to evaluate the relationship between American stock returns and ESG factors, a study was performed taking as sample the 500 S&P companies and separating the 250 that are part of the Domini 400 Social Index (DSI). This index is widely used. It is based on the exclusion of controversial sector firms and the evaluation of the remaining ones according to some criteria grouped into community relations, corporate governance, diversity, employee relations, environment, human rights, and product quality. Regarding the relationship between stakeholder's

rating and stock returns, there was no significant relationship. However, there was a clearly positive relationship between total ESG rating and operating performance. This supports the theory that Corporate Social Performance (CSP), as a measure of effective management for the overall company, is positive for Corporate Financial Performance (CFP). Also, a significant positive relationship is found between broader ESG factors and firm valuations. As the previous study, higher rated companies are related to higher earnings multiples and due to that, higher valuation. Also, employee conditions are a more relevant influence than other stakeholder criteria. In this way, it suggests that ESG factors do impact corporate financial performance and hence are a relevant consideration for investment decision-makers (EVANS e PEIRIS, 2010).

2.6.1. Covid-19 Crisis

As a way to analyze the relationship between the ESG indexes and the resilience in hard times, an analysis was performed to check if ESG stocks were saver during the Covid Emergency. The performance of the stocks between February 2020 and January 2021 was compared with the ESG indexes and the Global Covid-19 Fear Index (GFI). This index measures the emotions and concerns regarding the pandemic scenario by taking a look at report cases index (RCI) and death index (RDI). Excessive fear could have significant influence for investors in the financial market. Studying the changes in the four of the global main ESG indexes – MSCI World ESG, MSCI KLD 400 and STOXX Global ESG –, it was possible to see that GFI has a significant relation to them. The intensity of it depends on the short or long-term view, it is stronger for long-term investments. So, long-term investors in the stock markets can diversify the risks by including the stocks related to ESG in their portfolios (RUBBANIY, KHALID, *et al.*, 2021).

Another study performed in the same field was made by Mahmoudi and Meyer. In order to prove the link between sustainability and market uncertainty, the US stock market was examined in the Covid-19 shock period. Via econometric analysis, it was proved that the immunity of sustainability only persists during the downturn and not during the rebound following the crash. It is driven by the uncertainty channel, considerably more than financial fundamentals or ESG components. The reason for this is probably due to two aspects. The first one is that quality, clarity and completeness of sustainability information about a stock is associated with stock ambiguity, in the sense that unavailable, bad, or ambiguous information leads to more uncertainty. The second one is that investors perceive sustainable stocks as uncertainty mitigating, consequent bias towards

sustainable stocks during the crash that incrementally contributes to stock price resilience (MAHMOUD e MEYER, 2020).

In the same line of though as the previous article, a study was performed to check whether responsible investing pays during economic downturns, specially looking at the Covid-19 Pandemic. As a starting point, it is pointed out that socially responsible or sustainable investing outperform due to three main reasons. The first one is that sustainable businesses improve their social image and are therefore able to differentiate themselves and their products from others. This created brand equity and brand loyalty, that results in higher profitability and reduces the sensitivity of responsible businesses against systematic risk and economic downturns. The second reason is that those businesses normally have high-quality and good management, attracting managers that are ethical conducting the business, threat well their employees and society as whole. This leads to higher productivity and organizational performance, increasing sales and profit. And the third reason is that responsible businesses attract loyal investors. As they are also motivated by non-financial reasons, such as ESG concerns, they stick with responsible companies even in periods of crisis when normally investors would sell off their shares.

As a result of the study, there was a confirmation that SRI indices outperform conventional indices before and during the Covid-19 crisis period. On the opposite side, the exchange-traded funds (ETF) – tracks an index, sector, commodity, or other asset, but are traded on a stock exchange (ETF, 2021) – focusing on responsible investments fail to obtain superior performance against the benchmark indices. This may be due to the mix of positive and negative screening strategies utilized by funds, which may have diluted the responsible investment factors. Furthermore, the presence of the ETF management fee and the time required to reflect benchmark changes may have affected the results (OMURA, ROCA e NAKAI, 2020).

3. ESG INDEXES

There is a fundamental difference between ESG rating and indexes, and ESG scoring and opinions. ESG rating measures the company exposition to ESG risks, higher rating indicates less relevance of the risk and better ability to manage it. On the other hand, ESG scoring measures the company's ESG attitude, offering a valuation of how companies have been and currently are in managing ESG factor.

The ESG research industry is made up of a growing set of companies that collect and analyze data related to many ESG issues. The process can be divided into the establishment of standards, the aggregation of data, the selection of data and the analysis performed by the rating agencies.

The evolution of scenario previously explained, however, has led to a vast and huge range of rating scores – rating in specific areas and looking at the overall company – as well as different tools to evaluate companies' ESG performance. Even with the consolidation of some rating agencies, there is still a considerable diversity in this field (ECCLES e STROEHLE, 2020). Traditionally rating players have also entered this market, like Moody's and S&P.

In the majority of the cases, the methodology and the steps are similar. In some cases, however, there is a focus on a specific industry or topic. Taking Moody's ESG framework as an example, one the most renowned agencies, it is possible to understand how the rating process normally happens. First of all, the agency relies on partnerships to constantly collect the data needed. Those companies are specialized in searching for data, products and innovations on the sector. It is important to highlight that the company will not capture all considerations that may be labelled green, sustainable or ethical but those that have a material influence on credit quality. Many companies have a multitude of ESG risks and opportunities which will have little or no impact in its operation and financial performance.

As an objective of ESG analysis, the agencies try to capture, with the most forward-looking view as possible, future risks. Of course, near term risks tend to be more meaningful and have a higher impact on ratings.

Moody's developed the ESG Analytical Tool that is responsible for an integrated credit analytical approach, putting ESG into the traditional credit analysis. It is divided in four core components as shown in Figure 6 (MOODY'S INVESTORS SERVICES, 2021).

Figure 6 - Moody's ESG Framework[6]

Beginning with the taxonomy determination, as it is common for ESG indexes, the key performance indicators used to analyze companies were divided into the three categories – environmental, social and governance, as it is possible to see in Figure 7. Some KPIs are also used in other rating frameworks.

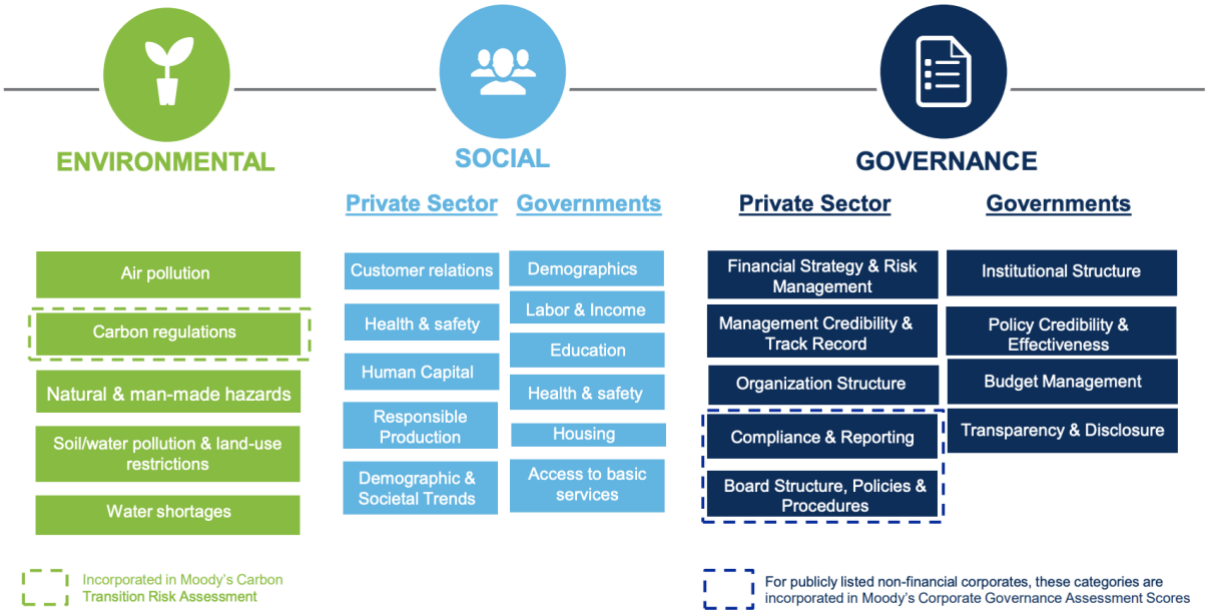

Figure 7 - Taxonomy for ESG Framework[7]

It is important to state that ESG considerations influence the risk of default and expected financial loss in case of default. However, there is no "one size fits all" approach by which a specific set of ESG issues will be material to all sectors (MOODY'S INVESTORS SERVICE, 2017).

After that, the heat map will provide the relative ranking of the different sectors in the ESG taxonomy. To finish, assessments are issuers specific scores and the rating the outcome.

[6] Source: (MOODY'S INVESTORS SERVICES, 2021)
[7] Source: (MOODY'S INVESTORS SERVICES, 2021)

Another important company that performs the ESG rating is Thomson Reuters. They measure companies' relative ESG performance and rank them in both percentage and letters. The process to reach the ranking differs a bit from the previously explained one. There are 178 data points that are analyzed for each company. Those points are grouped into 10 categories, as shown in Figure 8 (THOMSON REUTERS, 2017).

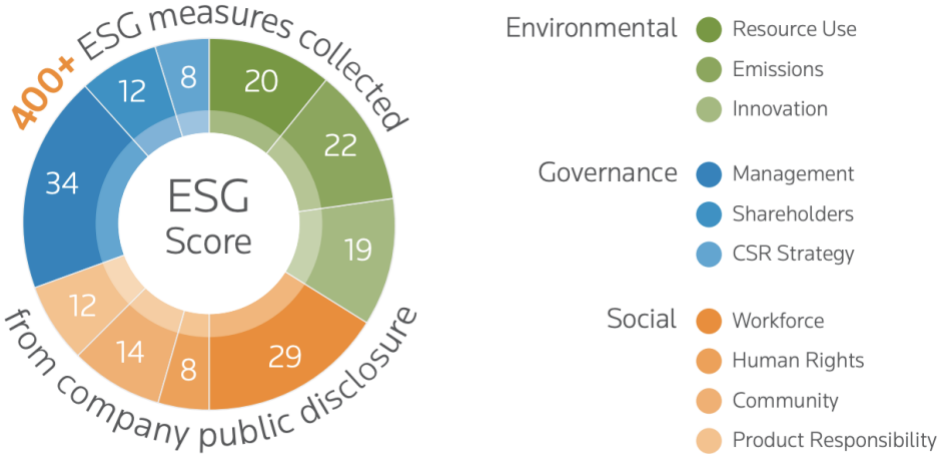

Figure 8 - Thomson Reuters ESG Framework[8]

[8] Source: (THOMSON REUTERS, 2017)

4. SUSTAINABLE FINANCE INSTRUMENTS

When talking about ESG Investing or Impact Investing, other aspects to be studied are the financial products or instruments in this area. They are debt-finance instruments used to raise private funds for sustainable development. Studies show that nowadays there is green premium in most of the markets, as a result of the higher demand in comparison to the supply of those bonds.

There are people, however, that disagree with this type of niche market. They say that the best way to finance sustainable projects is to make organizations as whole more sustainable so any bond issue would be in the category. It can be a good solution thinking about a long-term view, but the development of sustainable finance instruments is critical in the short-term to give funds to future sustainable development (A growing toolbox of sustainable finance instruments, 2021).

The main sustainable finance instruments are:

- **Green bonds**: have the objective of raising capital or investing in projects with environmental benefits. Projects eligible for green bonds can be, for example, related to the fields of green buildings, renewable energy, transportation, waste management and reduction, industry efficiency and agriculture.
- **Social impact bonds**: have the aim of raising funds for projects with positive social outcome. In this case, there are some particularities in its financing structure that can be better explained in Figure 9.

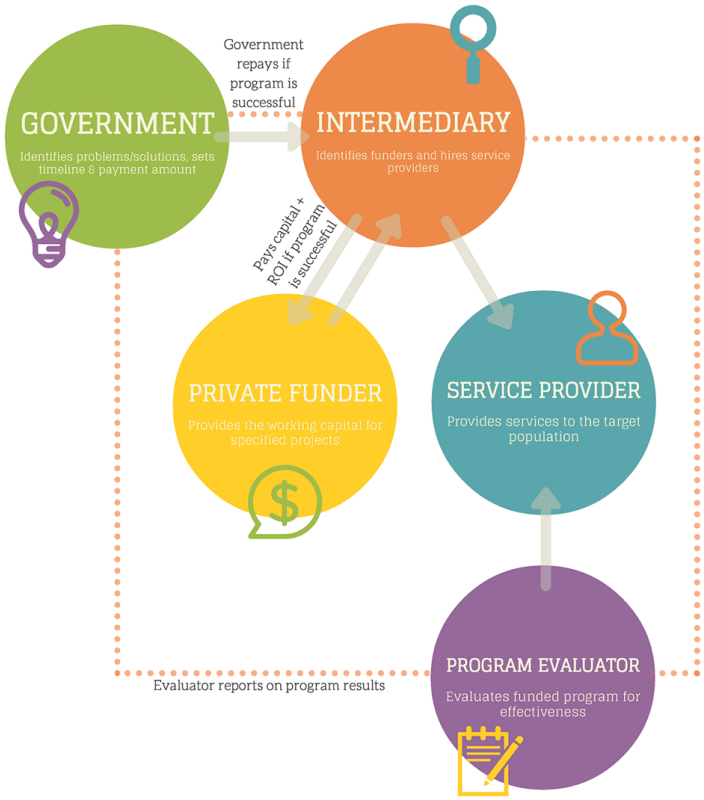

Figure 9 - Social Impact Bond[9]

Intermediaries act to guarantee the investment by private entities so that the government can repay later. It is the alignment between the private and public initiatives. The private party commits to pay for a program that leads to improved social results and public sector savings. The private investors are then repaid when contractually agreed upon objectives are achieved.

- **Sustainability bonds**: bonds that will be exclusively applied to a combination of social and green projects, in the same way as previously explained.
- **Sustainability-linked bonds**: they have the aim to funding and encouraging companies to contribute to sustainability. First, there should be a selection of KPIs that will be analyzed to guarantee that the objective of the financing is being met. Then, the sustainable performance targets, that are created based on the KPIs, should be calibrated to materialize the improvement in respect to them. After that, bond characteristics are determined. It is important to state, however, that reporting, and verification are mandatory to happen in frequent basis (Sustainability Linked Bonds Principles, 2021).

[9] Source: (Social Impact Bond, 2021)

- **Green loans**: loans that are available just to green projects, same fields of green bonds.
- **Sustainability-linked loans:** given to support environmentally and socially sustainable economic activity and growth (Sustainability (ESG) Communication and Sustainable Finance, 2021). It can be seen as an incentive from lenders to improve the sustainable profile of lenders, aligning loan terms to their performance against pre-determined sustainability performance targets.

Taking a look at some numbers, it is possible to see that the sustainable debt market has been, during the years, dominated by the green. In recent years, other themes have grown both in terms of amount issued and number of issuers. The market performed strongly in the first half of 2020 and has shown a difference in terms of composition due to the pandemic scenario, as it can be seen in Figure 10.

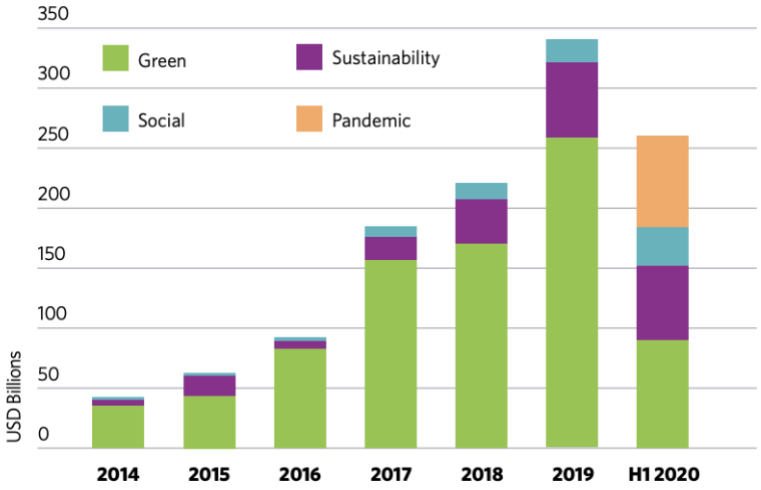

Figure 10 - Sustainable debt market analysis by theme[10]

Pandemic-themed bonds emerged in China, in its majority by non-financial corporates with several industry represented. Almost all its volume is short dated (CLIMATE BONDS INITIATIVE, 2020).

As benefits of sustainable bonds for issuers, it is possible to mention the external and internal synergies. It helps the issuer to communicate its sustainability strategy, showing its mobilization in order to meet the new regulations and sustainable goals. Also, it is seen as way to expand and improve relationships with debt providers, via the promotion of sustainability information. Diversifying the investor base is important for issuers from the financial risk

[10] Source: (CLIMATE BONDS INITIATIVE, 2020)

management point of view. In relation to external activities, the bond issuance, that includes the disclosure on the management of proceeds and evaluation of the environmental impacts of investment projects, may help to create a strong sustainability awareness in the company, reinforcing the relation between the financial and the sustainability departments.

When talking about the benefits for the investors, they have better information for impact investments. In this way, it is possible to develop a better-informed investment strategy and risk assessment. By increasing the transparency and information availability, the issuance of those bonds enhances the communication between issuers and lenders regarding the impact of the investments. In addition to that, it facilitates the implementation of investors' long term climate strategies and help responsible investors to broaden their restricted investment portfolios.

Despite its rapid growth, the dissemination of the sustainable finance instruments is now facing two major challenges. The first one is related to ensuring the environmental integrity of green bonds. Inside it, there is the question of defining "greenness", that ultimately depends on the objectives of those bonds. Also, there is the aspect of the reliability of information, linked to monitoring and evaluation procedures. The second one is to enhance the environmental impact of the bonds by growing the agenda for low-carbon projects, for example, bringing them tangible financial benefits (I4CE - INSTITUTE FOR CLIMATE ECONOMICS, 2016).

A study performed by Flammer analyzed the market for green bonds. First of all, three characteristics were highlighted. The first one is that corporate green bonds are becoming more prevalent over time. The second one is they are more common in industries in which the environmental aspect is material for the firm's operation, like energy industry. And the third one is that those financial instruments are mainly issued in China, US and Europe.

Also, this studied has shown that the issuance of corporate green bonds was seen as a positive signal for the company, generating positive responses in the market. This response is stronger for green bonds certified by third parties and first-time issuers. It just confirms the positive link between eco-friendly behavior and stock market outcomes. In addition to that, after the issuing, firms have shown an increase in the ownership by long-term and green investors.

Another interesting aspect of the study is that it was responsible to refute two negative ideas about corporate green bonds. The first one is that it is just a matter of greenwashing. This concept means the unjustified appropriation of environmental virtues by organizations or individuals, using marketing techniques. However, the improvements in environmental performance following the

issuance of green bonds have shown the opposite. And the second one is that companies issue green bonds just because they are a cheaper source of debt. Again, a comparison with quasi-identical bonds, discarded the idea (FLAMMER, 2020).

To complement this study, another one is worth mentioning. As the emission of green bonds can be seen as a proxy for firms that are making environmentally friendly investments and are changing their ESG profile, the analysis has shown a positive reaction of the market. Again, stock prices for green bond issuers have increased significantly around its issuance. Those reactions were stronger for the first-time issuers, in comparison with repeated issuers, and also stronger for corporate issuers than financial institution issuers. Three reasons were explored to justify this behavior. There was little evidence that green bonds are issued at lower yields, comparing to regular bonds from the same issuer, not justifying it as a cheaper source of debt. However, it was found an increase in the institutional ownership and an improvement in the stock liquidity after the issuance of this new instrument. Also, it was seen that the release of this type of instrument can attract more media exposure and can be used by impact investors to satisfy their investment mandates. On the overall perspective, it was possible to see that the issuance of green bonds generates net benefits for the existing shareholders (TANG e ZHANG, 2020).

There are studies, however, that point out for an increase in the premium paid by green bonds investors. After applying a regression model, a report published by Barclays proved that not only there is a significant spread for the sustainable products, but also that it has increased steadily as market has grown. Some explanations are proposed for that. The first one is a probable mismatch between the supply of and the demand for those bonds. Also, green bonds should trade at a tighter spread to reflect their externalities, such as mitigating climate risk through their commitments to environmental projects. It can be also a simple preference on the part of investors, accruing enough other benefits to offset the lower cash flow. The last reason was that maybe those bonds are actually less risky or volatile than similar conventional ones, making the tighter spreads appropriate to their risk-adjusted return (BARCLAYS, 2015).

5. THE BRAZILIAN CONTEXT

In order to better understand the Brazilian macroeconomic scenario, it is important to explain some political and economic aspects of the country. Highlighting those particularities, the risk management and the investment in more stable and long-term oriented opportunities will be, for sure, justified. This because, despite the overall systematic and country-related risks, ESG investors have the aim to avoid some additional uncertainty by investing in firms less exposed to industry or firm-specific risks.

Brazil is the world's sixth largest country in terms of population, having reached 212 million inhabitants in 2020. It covers an area of 8.510.295,914 km², being the world's fifth largest in terms of size. In 2020, Brazilian GDP was BRL 7.4 trillion (Instituto Brasileiro de Geografia e Estatística, 2021), which represents USD 1.42 trillions, considering the disclosed exchange rate of 31/12/2020 (Guia da Cotação, 2021). It is the biggest economy in South America and the world's 12th in terms of GDP. A reduction in 4.1% in 2020's GDP has made the country lose its position in the top 10 world's biggest economies (Estadão, 2021).

The country's main economic activities are the agribusiness, services, industry and trade. Its natural conditions are favorable for the development of the agribusiness. Also, the availability of minerals in the territory is an important factor to be considered when talking about Brazilian economy. Due to those conditions, Brazil is an important exporter, mainly focused on iron, steel, soy, sugar cane, coffee, meet, chicken and automotive products (Economia Brasileira, 2021).

It is evident that the country can be seen as very attractive to investors, that see the possibility of obtaining high returns. However, the recent unstable period made some investors refrain from betting on that specific market.

5.1. POLITICAL CONTEXT

Starting with the political scenario, Brazil is currently facing a turbulent period that raises uncertainty about its future, which is translated into higher risks for not only short but also to long-term investments.

In 2003, Luiz Inácio Lula da Silva (Lula) has started his mandate, which represented the victory of the left-wing, in the form of the "Worker's Party", *Partido dos Trabalhadores* in Portuguese. At that moment, the international market was favorable to commodities, contributing to the increase in exports and the growth of the economy. This enabled the president to invest in

social programs, which significantly reduced poverty and income inequality in the country. He created room for many other left-wing governments to arise in other Latin American countries, such as Bolivia and Venezuela. It was a period of descending interest rates, in order to increase the credit availability, and of huge international investments, that took advantage of the huge number of consumers and of the availability of labor force.

Due to the prosperity period, Lula was reelected for another 4-year mandate in 2007 and the party was able to elect another candidate both in 2011 and in 2015, Dilma Rousseff. The economic growth was only stopped when economic measures were not able anymore to contain the consequences of the 2008 financial crisis and China reduced its appetite for Brazilian commodities. Together with that, at that moment, the world had seen the saturation of the emerging markets, which was responsible for starting a wave of tightening budget policies. In 2014, Brazil saw the beginning of a financial crisis and the fiscal unbalance started to become evident.

At that moment, it has started a huge investigation called "Car Wash Operation", *Operação Lava-Jato*. It was responsible for the arrest of experienced politicians and executives involved in bribes from large companies. The operation is still running, and it was a huge political scandal. Together with that, in 2016, Dilma Rousseff was impeached due to criminal administrative misconduct and disregard for the federal budget.

Dilma's vice-president Michel Temer assumed. Temer's short mandate was mainly focused on the revision of the social insurance program, but since his government was not credible to the whole population, the proposed reform did not pass by all the bureaucratic process that exists to make it official. He was only able to implement one reform regarding the limit of government spending in social securities. At that moment, the country was experiencing low growth with no inflation pressure, that lead the floor to more monetary policies with the aim of reducing even more the interest rate. This scenario started to determine the current one, that is characterized by an increase in the allocations in variable income financial instruments (Investnews, 2021).

In 2018, Lula was arrested by the "Car Wash Operation" and the right-wing took advantage to elect Jair Bolsonaro, who assumed in 2019. With a past military formation and an authoritarian style, his ideas represent some additional risks to the democratic regime, to minorities, to the environment, to international relations and to the sustainable development. After 2 years of his mandate, it is possible to see some consequences of this. External investors are afraid of keeping

their money in Brazil as the president was inefficient in the deforestation fighting and has threatened reducing environment protection measures.

It is important to state also that Brazil was one of the major countries affected by the Covid emergency. Bolsonaro's popularity decreased a lot with his unpopular measures, against lockdowns and stopping economic activities. This was an important factor to increase even more the historical polarization right and left-wing in the country.

5.2. ECONOMIC CONTEXT

As previously explained, during the past decade, Brazil was immersed in a financial crisis derived from the political scandal and the social insurance aspect. Huge national enterprises suffered severe losses due to their involvement in corruption schemes. It was a period of high economic uncertainty that made many risk averse investors reconsider investing in Brazil.

In this way, in 2015 Brazil lost its investment category rating being downgraded to speculation category (BB S&P/Ba2 Moody's/BB Fitch) (G1, 2021). As it can be seen in Figure 11, the country went from a period of high economic growth and prosperity to a severe recession after 2014. This transformed into a financial crisis that made Brazilian Real GDP shrink for 2 consecutive years, showing a sign of recovery afterwards and shrinking again in 2020 (SCNT, 2021).

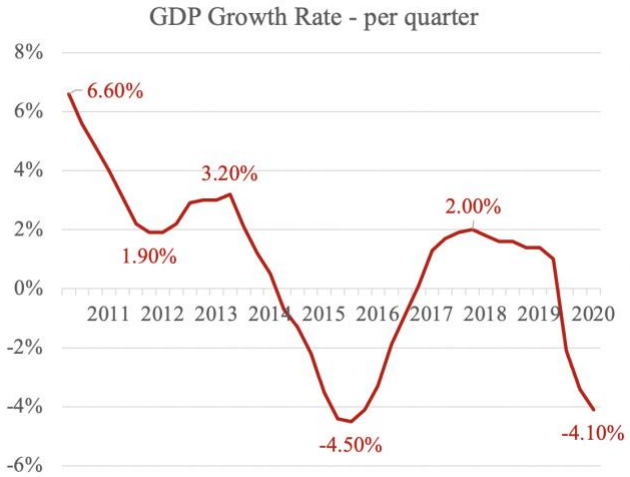

Figure 11 - Brazilian GDP Growth rate - per quarter[11]

[11] Source: elaborated by the author, based on data available at (IBGE, 2021)

In order to recover from the financial crisis, the government increased its expenditures to stimulate economy and solve infrastructure problems. However, these measures were not effective and also contributed to an increase in the inflation and in public debt, that rose more than 20% from 2015 until actual days. Interest rates went up until 2015, trying to follow the increase in inflation, that reached its peak in that year. Figure 12 shows the evolution of the IPCA index, the most used index to measure inflation in Brazil and Figure 13 of the Selic, the Brazilian interest rate (ADVFN, 2021) (IBGE, 2021).

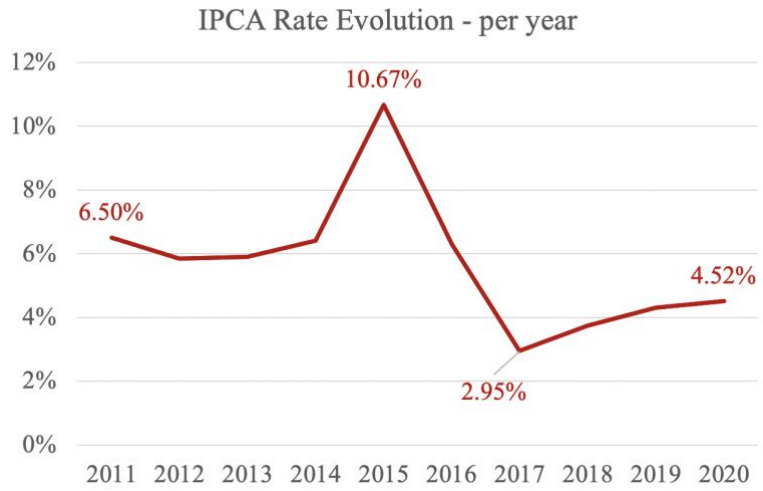

Figure 12 - Inflation Evolution - per year[12]

Figure 13 - Interest Rate Evolution - per month[13]

It is possible to see that after 2017, the inflation rate started to increase again. However, this time, as it was not followed by economic growth, policies did the exact opposite: reduced interested

[12] Source: elaborated by the author, based on data available at (IBGE, 2021)
[13] Source: elaborated by the author, based on data available at (ADVFN, 2021)

rates even more. This situation may lead the country to enter in a stagflation period, which means, increase in prices not followed by increase in economic activities, a very harmful scenario. Summing up, as a result of the political turbulence summed up with the world's financial crisis resulted from the Covid Emergency, Brazil is passing through a difficult economic period. However, there is still much opportunity of investments in the country, maybe with some uncertainties, that can be better managed with an ESG investing approach.

6. ESG IN THE BRAZILIAN STOCK EXCHANGE MARKET (B3)

The Brazilian Stock Exchange (B3) is in the center of the financial and capital markets in the country. Talking about sustainability and ESG Investing, it has the objective of promoting more sustainable practices among its stakeholders and offering investors products in the ESG field. Sustainability is inside the strategic objectives of the entity, in order to build long term competitive advantage to its clients.

In 2013, B3 approved a document – that is called "*Política de Sustentabilidade*", Sustainability Policies – related to its social and environmental responsibility policy. The objective is to formalize and drive the entity on its acting to reinforce the importance of the topic and develop the aspects related to the 2030 Agenda of Sustainable Development. B3 has both responsibilities as being a listed company and as being the Brazilian market inductor agent. The document is divided into two sections: environmental and social. In the first one, the main objective is to minimize environmental impacts related to the company's activities. B3 joined an ecoefficiency program to optimize its water, energy and paper consumption, reduce its emissions and discard its waste in the right way. Also, the company is responsible for introducing better environmental practices in its whole value chain. In the second one, B3's main objective is to respect internal and external human relations and to promote human right principles. It is in the mission of attracting and retaining the best talents to the company, improving their life quality and developing their skills. Together with that, incentivizing inclusion, diversity and gender equality.

B3 is member and partner of many institutions that focus on ESG. It was the first stock exchange in the world to sign the UN Global Compact in 2004 – principle-based framework for businesses with ten principles in the areas of human right, labor, environment and anti-corruption. Also, it was the first stock exchange from a developing country to join the 2010 Principles for

Responsible Investment (PRI) and founded the initiative of Sustainable Stock Exchange (SSE) in 2014 (B3, 2021).

Different from other countries, like the European ones, that have the NFRD, non-financial reporting directive – EU requirement for large companies to publish regular reports on the social and environmental impacts of their activities (European Commission, 2021) – Brazil does not yet have any similar regulation. However, there are two initiatives worth commenting, as they have the objective to evolute and become, eventually, similar to the one previously mentioned. The first one is that B3 is studying to toughen their requirements for companies to join their main indexes, not just the sustainability ones (for example, *Novo Mercado*, that will be explained afterwards). In this way, as companies have the interest to be on those indexes, they will have to develop some internal aspects in order to meet those ESG requirements. The second one is an initiative implemented by the CVM (Securities and Exchange Commission of Brazil), together with B3, called *Relate ou Explique para Relatório de Sustentabilidade ou Integrado*, which means "report or explain for sustainability or integrated reports". It is, nowadays, an optional requirement, that authorities are planning to make it mandatory, for listed companies to public sustainable reports. If they don't, they should justify the reason for not doing it. Unfortunately, just 30% of the current listed companies do frequently publish those reports (B3, 2021).

Giving this scenario and the engagement in the Sustainable Investing, B3 nowadays relies on some ESG indexes. They certify that companies meet certain requirements, a signal for the market. Also, B3 offers investors some Sustainable Related Finance Instruments.

6.1. INDEXES

6.1.1. S&P/B3 Brazil ESG Index

This index was jointly developed by S&P Dow Jones Indexes and B3 not just to highlight companies with a strong ESG component, but to enable investors to invest in those companies without taking major risks related to the market.

The Dow Jones Sustainability World Index (DJSI World), that was the precursor, includes the top 10% companies of each industry in relation to ESG performance. After this one, the DJSI to Emerging Markets was created, following the same logic but for emerging markets only. Both were successful in incentivizing companies to change in a positive way; however, they are too narrow for investors who want to have a really diversified portfolio. In this way, S&P/B3 Brazil

ESG Index was created to bring an invested-oriented ESG index for Brazilian companies. It maintains a large portion of companies from S&P Brazil BMI – broad market index, investable large, medium and small cap companies in Brazil by foreign investors (S&P, 2021) –, in this way, staying broad and diverse, but screening out controversial activities and companies.

As it is explained in detail in Figure 14, the methodology of the index is based on the development of a pool of companies using the screening strategy. First, companies involved in controversial sectors are excluded, after the ones that are non-compliant according to the Sustainalytics Global Standards Screening (GSS) – companies that are non-compliant are the ones involved in incidents don't meet some international norms (SUSTAINALYTICS, 2021). Then, companies that are not in the S&P DJI ESG Score are eliminated and the remaining ones are weighted by this index to reach the final value in the index.

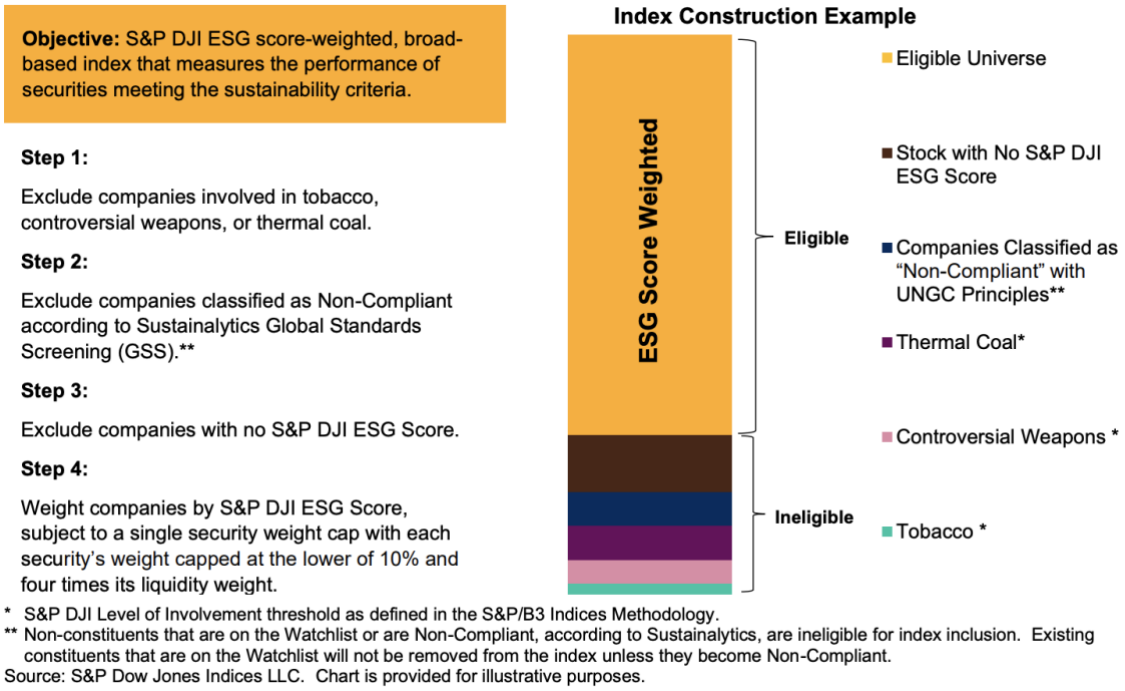

Figure 14 - S&P/B3 Brazil ESG Index Methodology Summary[14]

In 2020, the index retained 96 companies, 58% of the original ones in S&P Brazil BMI. At any time, a company can be removed from the S&P/B3 Brazil ESG Index if it is involved in a severe controversy, such as an economic crime and corruption, fraud, illegal commercial practices, human rights issues, labor disputes, workplace safety, catastrophic accidents, and environmental disasters (S&P, 2021).

[14] Source: (S&P, 2021)

6.1.2. ICO2 B3 Index

The ICO2 B3 Index, also known as Carbon Efficient Index (*Índice Carbono Eficiente*, in Portuguese) has the objective of indicating the average performance of some assets from the asset portfolio IBrX100 taking into consideration its greenhouse gases emissions. The IBrX100 is a theoretical portfolio that takes into consideration the average performance of the top 100 stocks in terms of liquidity and representation in the Brazilian stock exchange market.

Inside of the category of sustainable indexes, the ICO2 aims at considering all the emissions that companies generate in relation to the seven main greenhouse gases. The scope is well defined both in terms of the geographical and operational limits of those emissions. As example of activities that are used in the analysis are the ones related to industrial processes and agricultural activities (B3, 2021).

This index is a bit different from the previous one as it takes into consideration the total return. This means, it not just looks at the variation in those stock prices, but also looks at the impact of the overall income generation of those companies in the index value. In this way, this index incorporates dividends, interest on equity, subscription rights and any other value received that is different from the original asset one. Also, in the portfolio, are kept assets from the same classes that were result of subscription of rights.

The total value of the asset portfolio is calculated using the theoretical ex right price and the α parameter is changed in order to keep the value of the index constant. This adjustment is done in the subsequent day of the information of the income by the company to guarantee that the index will not be affected by it.

The computation of the theoretical ex right price is the following:

$$p_{ex} = \frac{p_c + (S * Z) - D - J - Yield - V_t}{1 + B + S} \quad (2)$$

p_c: last price cum right

S: subscription percentage

Z: total value of the stock to be subscribed

D: value received as divided

J: interest on equity

Yield: yield net of taxes

V_t: theoretical economic value resulted from the receiving of the income

B: bonification percentage, in number-index

And the index computation is the following (B3, 2021):

$$index_t = \frac{value\ of\ the\ portfolio\ of\ assets\ [price_t * quantity_t]}{\alpha} \quad (3)$$

Companies, to be included in the index, should meet three requirements. The first one, as previously explained, be part of the IBrX100 index. The second is to be into the initiatives of the ICO2 and the third one is to share regularly reports in greenhouse gases emissions in the deadlines established by B3. Those assets are weighted by its market value in relation to the free float assets, all the assets in circulation, and by the greenhouse gases emission ratio, that is the following (B3, 2021):

$$Emissions\ revenue\ ratio_t = \frac{emissions\ GHG_t[tCO_2e]}{revenues_t[R\$MM]} \quad (4)$$

6.1.3. ISE B3 Index

The ISE B3 Index, acronym for *Índice de Sustentabilidade Empresarial*, Corporate Sustainability Index, also indicates the average performance of a theoretical asset portfolio, for the year. This time, one composed by, at maximum, the top 40 companies in the stock exchange in relation to sustainable practices. It was created in 2005, the 4th index in the field to be created in the world. It looks not just at good environmental practices, but also at the market positioning of the companies and their type of investments.

Its methodology of computation is the same as the previous one, as it takes into consideration the total return of assets. The theoretical ex right price and the adjustment of the index value with the α parameter, follow the same logic as previously explained.

Together with that, to be included in the index, companies have to be in the first 200 positions, in descending order, in relation to the negotiability index, in the three previous portfolios. It is computed as following:

$$IN = \frac{\sum_{i=1}^{P} \sqrt[3]{\frac{n_{a,i}}{N_i} * \left(\frac{v_{a,i}}{V_i}\right)^2}}{P} \quad (5)$$

n_a: number of trades with the a asset in the market

N: number of total trades in the market of B3

v_a: financial volume generated with this asset in the market

V: total financial volume in the market of B3

P: number of days in the period of analysis

Also, the company has to have taken part in at least 50% of the days in the period in the three previous portfolios. It can't be a penny stock (less than R$1,00 price). In addition to that, having met all the criterium previously stated, the company should be, in the previous three periods, in descending order of negotiability index, representing, together, 99% of the total of this indicator.

Meeting all those requirements, the company will have to fulfill all the sustainability criterium determined by the board of the ISE and be selected by them. The criterium are divided into seven dimensions: environment, social, economic-financial, climate changes, corporate governance, product nature and general (B3, 2021).

For the economic-financial, environmental and social, B3 evaluates if the company adopts corporate policies that are in line with the good environmental practices and if its management is socially responsible. Together with that, it is checked if all legislations are fulfilled. In the general division, together with good environmental practices, it is evaluated the transparency level of information and if the company implements anti-corruption policies. Looking at the corporate governance, it is mainly evaluated what is the structure of the company, the relationship between shareholders, the organizational culture and the conflicts of interest. Climate changes refers to how the company deals with environmental changes and its daily practices about it. To end, the product nature evaluates the product that this company puts in the market and how it affects the environment.

Every division will be weighted with the same value and each criterium inside them will have different weights, depending on its relevance. After having a number, the board will deliberate about this company and see if it can join the index (CLEAR, 2021).

6.1.4. IGC B3 Index

The IGC B3, Special Corporate Governance Stock Index, is an index that takes into account the total return of a theoretical asset portfolio that meet a certain list of requirements in corporate governance.

To be part of the index, companies should have had taken part in at least 50% of the days in the period in the three previous portfolios and not being penny stocks, the same as the previous index. However, the difference here is that it should be listed in the *Novo Mercado* or in the 1st and 2nd levels of B3. Those are market segmentations that were created to better access the different profiles of the companies listed. *Novo Mercado*, which means new market, determines a list of companies that have the best corporate governance practices and meet certain requirements about it and about shareholders' rights. 1st level are companies that adopt the best transparency and information access practices. And 2nd level companies are the ones that meet almost the same requirements as the *Novo Mercado* but have some rights in terms of issuing new preferential shares (B3, 2021).

To compute the index, the assets are weighted by its market value in relation to the free float assets, multiplied by the governance factor. This value is equal to 2 to assets from *Novo Mercado* and 1,5 for assets in the 1st and 2nd levels.

6.1.5. ITAG B3 Index

The ITAG B3, Special Tag-Along Stock Index, evaluates the average performance of a theoretical asset portfolio that counts with the companies that offer the best conditions to minority shareholders. It is also a total return index.

To take part in the index, companies must have ordinary shares with a percentage higher than 80% in tag along – allow minority shareholders to take part in sales done by major shareholders – and with preferential shares with tag along of any percentage. Also, companies should have had taken part in at least 30% of the days in the period in the three previous portfolios and not being penny stocks. The assets are weighted by its market value in relation to the free float assets (B3, 2021).

6.1.6. IGCT B3 Index

The IGCT Index, Corporate Governance Trade Index, looks at the average performance of companies from the IGC that meet certain extra requirements. It is also a total return index.

To be part of the index, companies should have had taken part in at least 95% of the days in the period in the three previous portfolios and not being penny stocks. They have also to be in the *Novo Mercado* or in the 1st and 2nd levels of B3. Together with that, the company should be, in the previous three periods, in descending order of negotiability index, representing, together, 99% of the total of the negotiability indicator (B3, 2021).

6.1.7. IGC-NM B3 Index

The IGC-NM, *Novo Mercado* Corporate Governance Equity Index, is originated from the IGC B3. This time, however, companies with the best corporate governance practices can join the index if they are listed in the *Novo Mercado*. All the other requirements are the same (B3, 2021).

Having clarified the whole technical part behind the indexes, some remarks should be pointed out. First, it is possible to say that they can be seen as a bridge between the needs of the environment and society, and the current market scenario. As the indexes' analysis is regarding listed companies, in a way, the indexes scope is of companies that are references and examples to the market, so they are an important part of the market to be tackled. In addition to that, the metrics involved in the indexes considerably changed over the years, mainly when talking about the ISE, to meet with market trends and requirements. In this way, they are legitimate and updated sources of metric.

Again, about the most important and well-known index, the ISE, some changes have been settled for 2022, updating the metrics and generating more accurate results. The idea behind the proposal is to focus more specifically on the five areas that the index proposes itself to tackle (environmental, governance, social, climate and product). In terms of companies, as the first requirement to be part of the index is to be on the top 200 most traded stocks at B3, the group is formed by big and important market presence companies. The case of *Banco do Brasil* is an example. As one of the most important banks in Brazil, the company has always been part of the ISE and is also considered one of the top 100 most sustainable companies in the world by Corporate Knight – one of the most renowned valuation agencies worldwide. Another example is B2W,

formed by the merger between Shoptime, Submarino and Americanas.com. It is also part of the ISE index and reference in the CO2 emission management (CLEAR CORRETORA, 2021).

In this way, it is evident that those indexes play an important role in the sustainable investment area in Brazil. It is not only about signaling traders which are the companies that are taking care of those aspects but is about making a good pressure in the market for changing their management strategies to build a more solid sustainable structure. In terms of focus, the ISE is the most complete one, as it talks about all the three ESG areas, evaluating environmental, social and governance attributes of the companies. The S&P/B3 Brazil ESG Index is also an ESG index, covering all the areas. The others are specialized in one of the three parts of the acronym. The ICO2 refers to the environment while the remaining four are about governance.

6.2. INSTRUMENTS

6.2.1. Thematic Bonds B3

B3 offers a variety of sustainable related finance instruments for its customers divided into four main categories. The first three (green, social and sustainability bonds) are company, government or multilateral entities issued bonds that have the aim of attracting funds to social and environmental related projects. The fourth category, however, sustainability linked bonds, are created to ensure that issuer achieves ESG targets based on KPIs. Those bonds were first created in 2018 and can be found in the regular trading platform of the stock exchange. Figure 15 shows some examples of instruments by category.

Green Bonds	Climate change adaptation, Clean transportation, Eco-efficient and/or circular economy adapted products, production technologies and processes, Energy efficiency, Environmentally sustainable management of living natural resources and land use, Pollution prevention and control, Renewable energy, Sustainable water and wastewater management, Terrestrial and aquatic biodiversity conservation
Social Bonds	Affordable basic infrastructure, Access to essential services, Affordable housing, Employment generation, and programs designed to prevent and/or alleviate unemployment stemming from socioeconomic crises, including through the potential effect of SME financing and microfinance, Food security and sustainable food systems
Sustentability Bonds	Socio-environmental projects (Green and Social combined)
Sustentability-Linked Bonds	Indicator: Emissions management / Target: reduce the intensity of GHG emissions by 15% until 2030, Indicator: Waste Management / Target: 97% recycled waste until 2025, Indicator: Renewable Energy / Target: Achieve 100% energy consumption renewable electric energy until 2022

Figure 15 - Thematic Bonds examples by type[15]

In 2020, there was 13 different types of instruments registered from 11 different companies, representing R$4 billion. It is still a small volume, but the growth in recent years is clear and also

[15] Source: (B3, 2021)

the increase in the demand from the issuers to issue more and the investors to buy more (Brazil: Market Trends and Thematic Bonds, 2021).

It is important to state, however, that this number is not so significant because many companies listed in the Brazilian Stock Exchange have issued those type of instruments outside the country. One remarkable example is Suzano S.A. It was the first Brazilian green bond, and the company has issued some other important bonds over the years, mainly via Fibria Overseas Finance Ltd. – a regulated market by the U.S. Security and Exchange Commission and incorporated in the state of Cayman Islands (Fibria Overseas Finance Ltd., 2021). Also, the company was the second one in the world to issue a sustainability-linked bond. The first one was the Italian Enel (2021).

6.2.2. CBIO B3

In order to meet the requirements proposed by the 2015 United Nations Climate Change Conference (COP 21), Brazil has created its National Biofuel Policy (RenovaBio). Annual goals for decarbonization were created in order to achieve the target of 18% of bio energy in 2030 in the Brazilian plant.

The decarbonization credit (CBIO) is an instrument that was created by this program to help in the achievement of this goals. Certified producers and importers issue those credits and sell them to fossil fuel distributors that only have this option to meet the decarbonization goal. Each CBIO corresponds to one tone of CO_2 avoided. This instrument is commercialized in the same platform as the one used for bonds and other fixed income instruments (B3, 2021).

It is interesting to mention that there are two types of market for carbon credits, the regulated and the voluntary. The first one, as previously explained, occurs due to the need of meeting certain regulation requirements. However, there is the voluntary market in which firms compensate their carbon emission just for a reputational issue, as a reaction to customers and investors' pressure to actively act in environmental causes. There is an international platform, called Verra, that registers those credits. It has created the Voluntary Carbon Standards (VCS) that is globally used as reference. The prices for the credits vary depending on the type and the quantity offered. There are credits for renewable energy, forests and land use, waste management, chemical and industry processes, energy efficiency and transportation (CAPITAL RESET, 2021).

The increasing importance of the ESG issues in the corporate world made those carbon credits become like coins. However, for them to really be the future currency of companies and

countries, it is necessary for national and international markets to create and regulate those initiatives. As it was stipulated by the COP 21, the idea behind this initiative is to incentivize the reduction in carbon emissions, not being a way of covering 100% of those emissions by compensating them. That is why regulations are necessary, limiting the amount that a company can use those credits, in terms of the amount of CO2 emissions, and continue polluting (O ESPECIALISTA, 2021).

Regarding the voluntary market, US$1B is projected to be the total amount transacted between companies and entities in 2021. There is an increase interest from speculators to pursue those credits and this combined value is becoming a robust source of financing for green projects around the world. The challenge today for the voluntary markets is not anymore finding people to buy those credits, but to guide the markets to deliver the higher quality as possible with higher benefit for both people and the planet. Asia, Latin America, and Caribbean are the regions with higher amount of voluntary carbon credit transactions in recent years. 80% of those credits come from forest and land use (RESET, 2021).

7. ANALYSIS

As a starting point for the analysis, the performance of the sustainable indexes was compared with the performance of benchmarks. For every index, the most appropriate benchmark was selected, in order to make the comparison the most coherent as possible. It is important to explain that all indexes were standardized for base 1000 values and the starting point, in terms of date, was different for each one due to their different implementation moments.

Starting with the S&P/B3 Brazil ESG Index, its performance was compared with the performance of the index S&P Brazil BMI (LCL) TR. As it was already explained in detail, companies in the Brazil ESG index are the ones selected in the BMI, being this one the best benchmark for the analysis. BMI is a broad index that takes into account listed Brazilian companies that are available for foreign investors. By looking at Figure 16, there is a clear evidence, since 2019, of a better performance of the ESG index. However, before that moment, the difference was not so expressive. In most of the time, this index has shown similar or higher values when comparing to the benchmark.

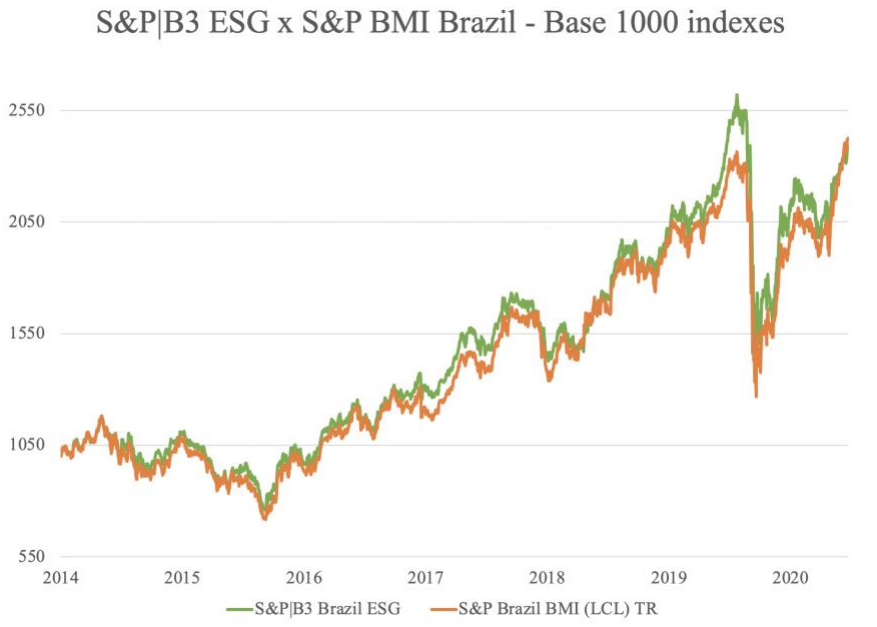

Figure 16 - S&P Brazil ESG x BMI Indexes[16]

However, by looking at the total return, in monetary terms, the ESG index has shown a worse performance then the BMI index. The analysis, that is possible to be seen in Figure 17, considered monthly and yearly values. In the long run – 5 years – the performance of the indexes

[16] Source: elaborated by the author, based on data available at (S&P, 2021) (S&P, 2021)

was considerably similar. Although, in the medium-short run – 1 year – the discrepancy between those values was evident. Also, in the short run, there is a substantial difference.

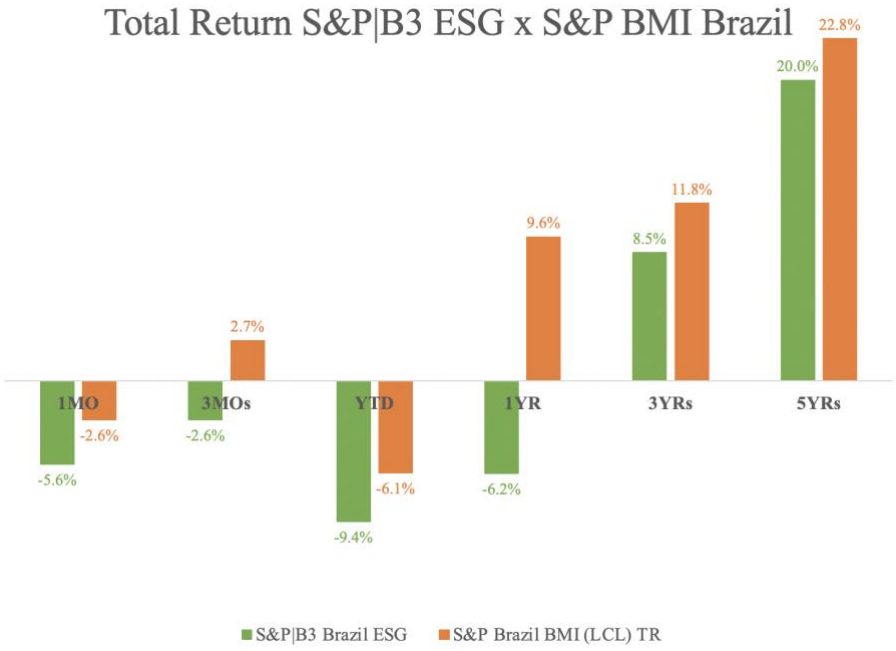

Figure 17 - S&P Brazil ESG x BMI Total Return[17]

Now, as a way to look at the risk of those indexes, something that should be taken into account when talking about long term and ESG investing, the standard deviation of total returns was computed. By looking at Figure 18, it is evident that the shorter the time intervals, the higher the risk perceived, in both the ESG and the benchmark indexes. It is possible to say that there is a relation between the time interval and the risk perceived: standard deviation of returns, of samples with fewer days, tend to be higher. However, when comparing both indexes, even with both showing decreases of risk with the increase in the time interval considered, this difference is more significant for the ESG index. The reduction in the risk from the 3 to the 5 years analysis was, respectively, 12.03% and 8.90% for the ESG and the BMI indexes. It is an evidence that companies that follow the ESG principles will probably have a reduction in the uncertainty and a more stable pattern of return the higher the time interval.

[17] Source: elaborated by the author, based on data available at (S&P, 2021) (S&P, 2021)

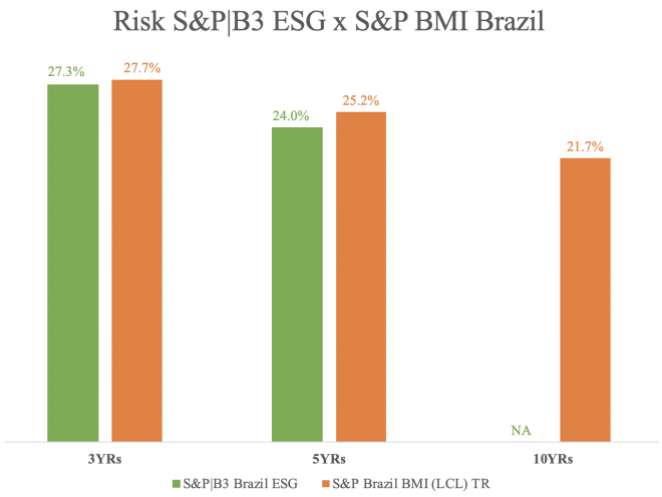

Figure 18 - S&P Brazil ESG x BMI Risk[18]

The second analysis that was performed was the one for the ICO2 index. The benchmark chosen was the IBrX100, as all the companies that joined the initiative of this index are part of the 100 biggest companies in terms of liquidity and representation in the Brazilian stock exchange market. It was possible to see, again, a clear extra performance of the ICO2 index when compared to the benchmark. In the period analyzed in Figure 19, the index has shown an equal or higher performance in almost every moment.

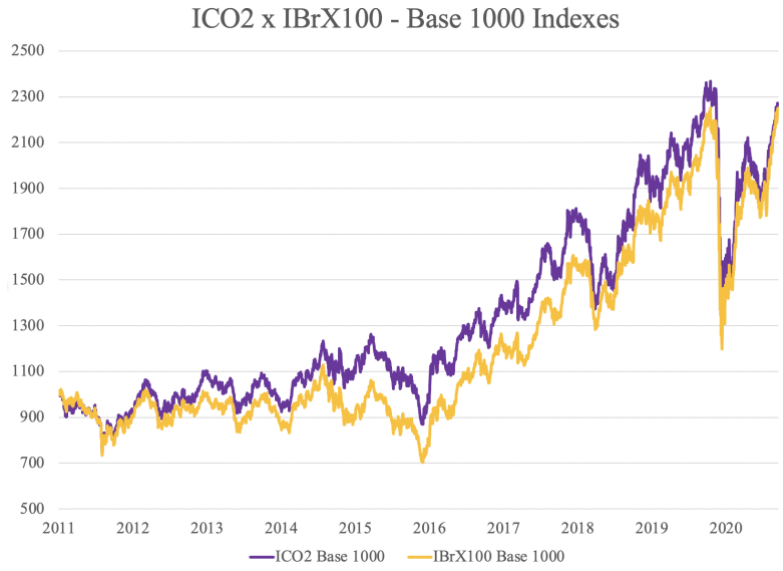

Figure 19 - ICO2 x IBrX100 Indexes[19]

[18] Source: elaborated by the author, based on data available at (S&P, 2021) (S&P, 2021)
[19] Source: elaborated by the author, based on data available at (B3, 2021) (B3, 2021)

To see the risk, the volatility for both indexes was computed and compared. In this case, however, the one related to sustainable companies did not show a substantial difference from the benchmark. This can be seen in Figure 20. It is important to mention also the tendency, in moments of economic shocks or crisis, such as the 2020's pandemic beginning, both indexes varied a lot. Constructing a solid ESG structure and long-term sustainable strategy, will not prevent the company from suffering with those events, but maybe will mitigate the damage, reducing the risk perceived by investors.

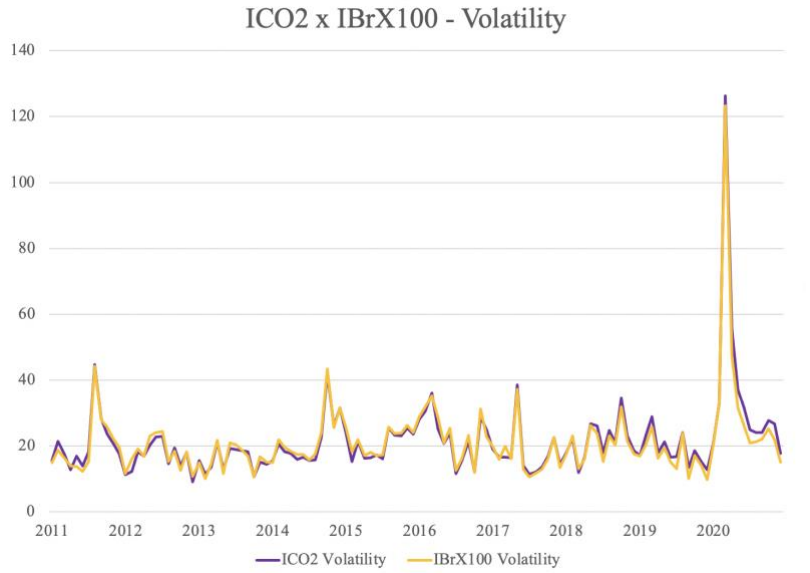

Figure 20 - ICO2 x IBrX100 Volatility[20]

The analysis performed for the ISE index was quite similar to the one for the ICO2, but, this time, using the IBOV as benchmark, *Índice Bovespa*, Bovespa Index. It is formed by the stocks that represented 80% of the total transacted volume in the previous time interval before forming that theorical wallet. It is the most used index as benchmark for comparing listed companies in Brazil. In relation to the indexes value, as shown in Figure 21, the extra performance of the companies in the ISE was evident.

[20] Source: elaborated by the author, based on data available at (B3, 2021) (B3, 2021)

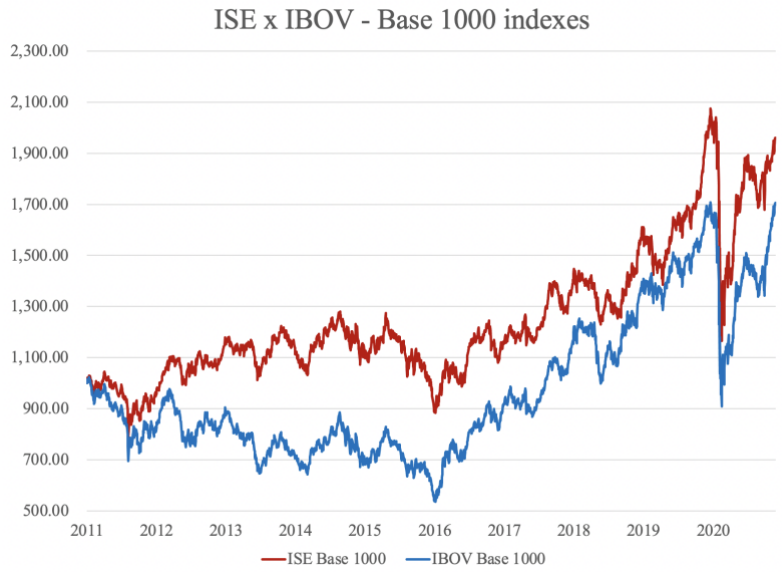

Figure 21 - ISE x IBOV Indexes[21]

Also, taking a look at the volatility of both indexes, the one of the ISE was quite lower than the one of the IBOV in most of the time of the analysis. This is clear in Figure 22. It may be an evidence of a stronger risk management and uncertainty mitigation for companies that take care of the ESG aspects and meet all the requirements to be part of this such important index.

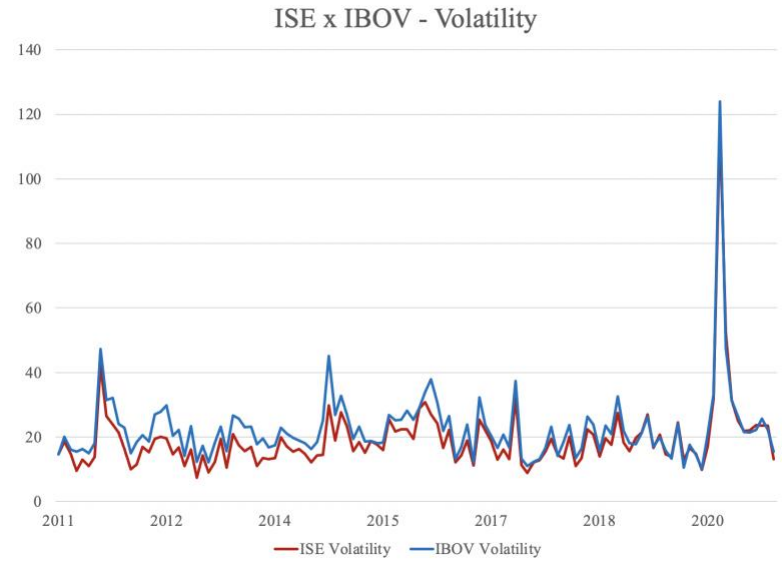

Figure 22 - ISE x IBOV Volatility[22]

Considering now all the 4 indexes that are related to Corporate Governance together, comparisons were made between them and with the benchmark, again the IBOV, as it is shown in

[21] Source: elaborated by the author, based on data available at (B3, 2021) (B3, 2021)
[22] Source: elaborated by the author, based on data available at (B3, 2021) (B3, 2021)

Figure 23. Talking about the indexes value, IBOV was, during the whole period analyzed, bellow all the others. The IGCNM was the Corporate Governance index that has shown the best performance in the majority of the time, with a special focus for the recovery period after the 2020 drastic fall due to the pandemic crisis. However, all the indexes tend to follow more or less the same tendency during time, in terms of value. This extra performance of the IGCNM index may be explained by the fact that companies that are in the *Novo Mercado* index have to meet a lot of requirements, not just in terms of ESG, but also in size, transparency and compliance. In this way, those companies tend to show a distinctive resilience in the market and also are positively affected by the signaling effect of the index.

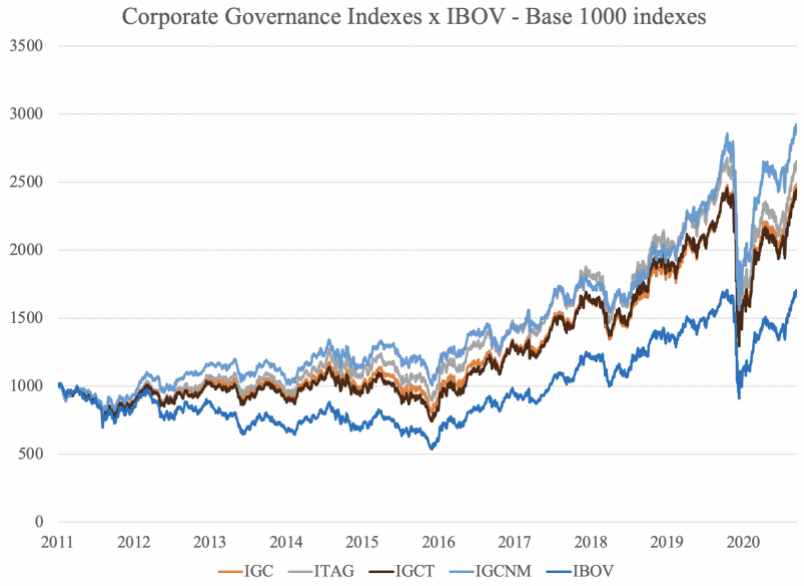

Figure 23 - Corporate Governance x IBOV Indexes[23]

Talking about volatility, the tendency is not so clear. In most of the cases, it is possible to see that IBOV had a higher volatility value than the other indexes did. However, the different risk profile of those indexes is not substantially different and also there is not a significant discrepancy with the benchmark values. In Figure 24, this is evidenced.

[23] Source: elaborated by the author, based on data available at (B3, 2021) (B3, 2021)

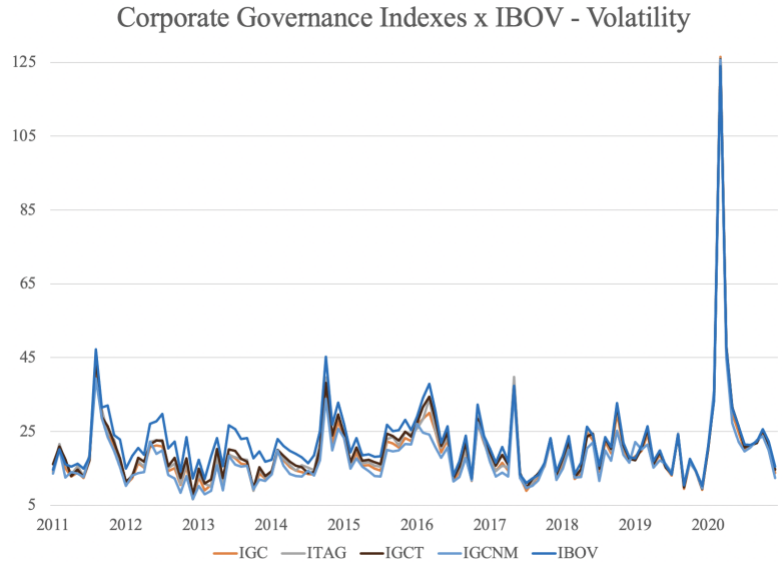

Figure 24 - Corporate Governance x IBOV Volatility[24]

Summing up, in the majority of the cases, the sustainable indexes have shown a performance better than their benchmarks. This can be seen also in periods of crisis and recovery from more critical moments. The general tendency, however, is normally the same. When there is an event that affects the price of regular stocks and its performance, it affects also the ones related to the firms in the sustainable indexes. The difference is that firms linked to ESG purposes, tend to be more resilient, being less sensible to market changes, as there is a better risk and uncertainty management. Also, what is evident in many of the research previously cited, is that even in moments of crisis, investors tend to keep their investments in assets that they believe in the purpose. If it is just a matter of money, if the financial return is not good due to external or internal causes, there is no point in keeping an investment.

Talking about risk, it is not a clear in all moments of the analysis, but sustainable firms have shown a tendency of better managing it. In the same logic as before, the general tendency of the volatility is normally the same for sustainable firms. However, those companies present lower values of deviation, being less sensible to market changes.

Now, by looking at the stocks individually inside the indexes, some analysis can be made.[25] There are 259 stocks listed in B3 in 2021, from 232 different companies. It was considered the four governance indexes and the ISE and ICO2. First of all, observing the number of sustainable indexes

[24] Source: elaborated by the author, based on data available at (B3, 2021) (B3, 2021)
[25] To see the complete table of stocks and the indexes they are in, see Annex A

in which those stocks are in, it is possible to see that just 2.70% of them are not in any index (Figure 25). It is a clear evidence of the fact that companies as a whole are taking some effort, in terms of ESG, to be eligible for the indexes. They are an important signal for the market and, in way, a negative evidence in case the company is not able to meet the requirements asked to join them.

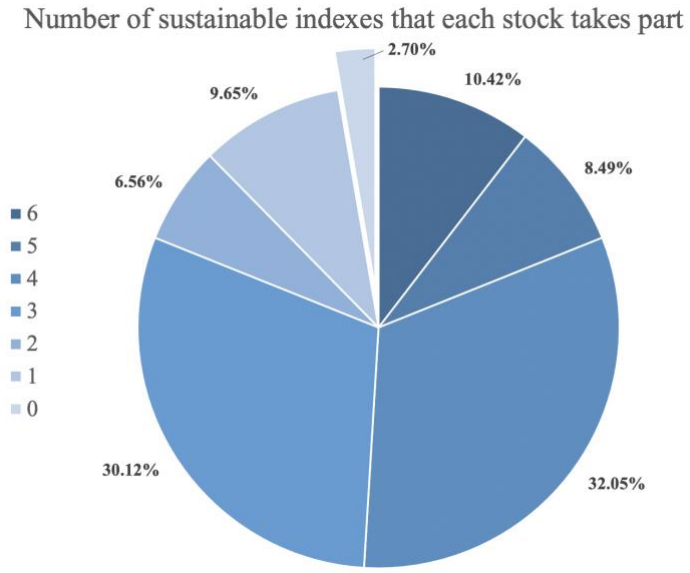

Figure 25 - Indexes per stocks[26]

In order to evaluate whether the sector that companies are is a relevant aspect when talking about ESG indexes, the representation, in terms of percentage of companies by sector[27], in each of the indexes was computed (Figure 26).

[26] Source: elaborated by the author, based on data available at (B3, 2021)
[27] To see the complete table of representation by subsectors, see Annex B

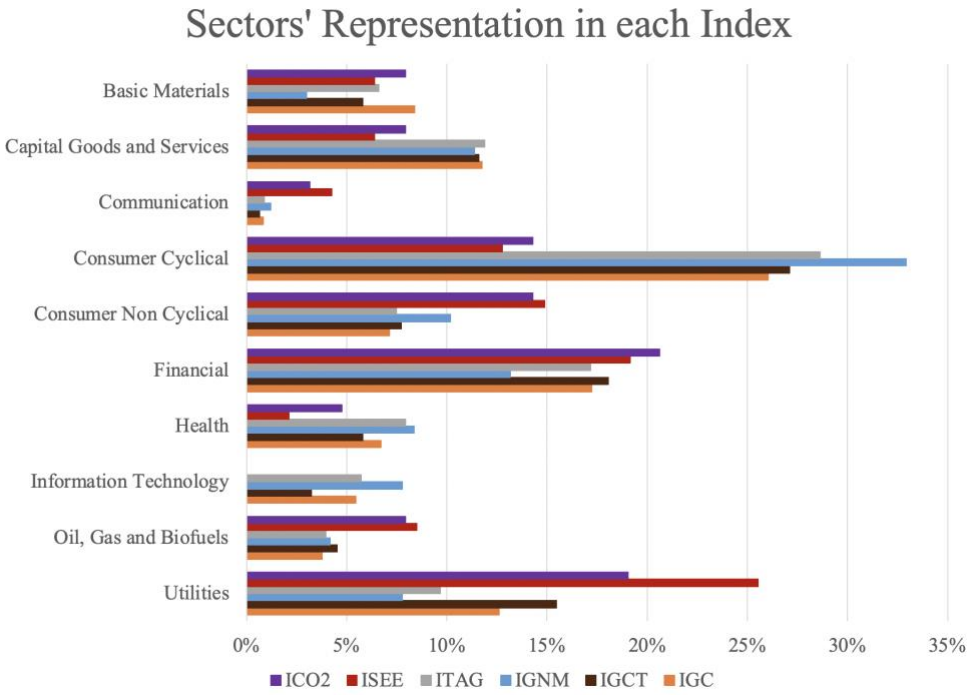

Figure 26 - Sectors in each Index[28]

The first thing that comes in mind when looking at the graph is the greater representativeness of the Consumer Cyclical sector in all indexes. It is the sector formed by companies that are considerably affected by economic factors, such as inflation, interest and exchange rates, financial crisis and economic growth. For consumers, prices can change in relation to them. Because of the vulnerability of companies in this sector, in relation to market oscillations, ESG investing may be seen as a good alternative. Customers and investors tend to adopt companies with more ESG indexes or better reputation in its terms to have a better risk and uncertainty management, more resilient investments in tough moments and showing sustainable strategies in the long term. In this way, the concern of companies of the sector to have a better reputation in relation to ESG and join the indexes, can be justified by the need of a signal for the market, obviously together with having a better performance as a whole.

In the same line of thought, the considerable representation of the Goods Capital and Service and the Financial sectors can be seen as the result of the increasing importance that customers are putting in ESG aspects when investing their money. Those sectors are not seen as

[28] Source: elaborated by the author, based on data available at (B3, 2021)

traditionally harmful for the environment or the society, but also have to be in line with the current causes and concerns of this new way of performing.

On the other hand, the sectors that are traditionally related to environmental harm, such as Oil and Gas, and Utilities – Electric, Water and Gas Utilities – were expected to have a higher contribution in terms of representativeness as they did. However, one thing that can justify those not so expressive numbers is the fact that those sectors are really concentrated in few companies. All its top-of-mind firms are part of, at least, one of the ESG indexes. What affects this representativeness, in terms of number of companies, is the fact that they are responsible for huge market shares.

The last thing that calls the attention when looking at the figure is the low representativeness of both Communication, and Information and Technology sectors. For sure it is not possible to be sure about it, but there is an important aspect to be highlighted. Those companies are normally digital and based in online, cloud and digital infrastructure, not having a clear relation, inside investors' minds, to environment and social harm. Maybe being part of those ESG indexes may not be seen as mandatory for many companies in those sectors.

Other analysis can be performed by looking at the companies that have issued sustainable bonds in Brazil and the amount of money they have raised. As it was said before, there are cases of companies that issued those bonds in foreign stock exchanges, that will not be analyzed in the present work.

The field of Green Bonds in Brazil is still not much explored. In 2019, only one of the companies that have issued a Green Bond had more than 10% of its capital financed by them. For all the remaining ones, this number was much lower. However, it is important to state that Brazil is considered one of the top players in this field, having 41% of all the Green Bond emissions in Latin America and Caribe. This potential may be justified by its natural and economic characteristics (MANTOVANI, CASSAJUS e TAKAASI, 2020).

In order to understand the Green Bond issuing process in Brazil, a research was performed with 66 companies considered potential issuers. From those companies, 9% has already issued one of those bonds. It was seen that the bureaucracy involved in launching those products in the market is considerable, contributing to generate a reduction in the interest for doing it. This was considered the main barrier when deciding to issue a sustainable product. However, it was also evident that the lack of previous examples in the country, to prove the benefits of those bonds for companies,

was an important aspect to reduce this interest. The whole bureaucracy involved in this process comes with a substantial cost to hire external advisors, train employees, get green certifications and so on. In this way, simplifying the registration and issuing process of sustainable bonds can be seen as an urgency to stimulate this market in Brazil (LABORATÓRIO DE INOVAÇÃO FINANCEIRA).

However, it is possible to observe that there is a significant difference between the amount of money raised with those sustainable finance instruments until 2019 and from 2020 to 2021. From 2016 to 2019, the capital raised was around BRL2 billions (MANTOVANI, CASSAJUS e TAKAASI, 2020) and from 2020 to 2021 this amount was approximately BRL10.5 billions (B3, 2021). Taking the issuances of 2020 and 2021, it is possible to see that they are divided into Bonds – *debentures*, DEB –, Credit for Agricultural Projects – *Certificado de Recebíveis do Agronegócio*, CRA –, for Real Estate – *Certificado de Recebíveis Imobiliários*, CRI – and Environmentally related Investment Funds – *Fundo de Investmento em Direitos Creditoriais Socio Ambientais*, CFF. The remuneration is, in almost all the cases, the inflation rate, represented by the IPCA index, with the addition of a fixed spread. [29] Just to put in perspective, the total amount of bonds generated in the first semester of 2021 was of BRL99 billions in Brazil. This shows that the proportion of sustainable bonds is still small in the total amount generated and there is a huge space for growth (EU QUERO INVESTIR, 2021).

[29] To see the complete table of Sustainable Finance Instruments from 2020 to 2021, see Annex C

8. CASE STUDIES

Having all the previous numbers and analysis, one question appears: does the pure numerical approach is enough to reach into a conclusion about the ESG influence in the financial performance of a company?

Taking a step forward, the following analysis was performed to create a counter point with the previous study. Conclusions pointed out that there was no point on only looking at the pure financial performance of the companies, translated by the price of its stocks, with the ESG indexes. There is a clear need of taking a deeper dive into the sustainable strategy, by putting ESG initiatives not as something additional, but as a core part of the operations of all businesses. So, companies were chosen as examples to be analyzed and see if the ESG strategy is part of its core operation and, if so, how this is translated to its financial performance. In the negative case, as well, by looking at how extra initiatives, taken as separate activities, do not have a real effect in the results of the companies.

In this way, together with the financial performance of the stocks, other non-traditional metrics were considered. Beginning with Omega Energia, one of B3 listed companies, some remarks can be pointed out. The company is nowadays reference in sustainable energy generation in Brazil, according to MSCI. Its main activities are the development of projects and implementation of renewable assets together with the energy generation. Also, Omega developed a digital platform to allow the energy trading. In the web site it is possible not just to sell energy directly to customers, but also to make long term agreements attached to projects and allow the energy trading between customers (OMEGA ENERGIA, 2021).

The IPO of Omega happened in August 2017. In 2021, its market capitalization was around BRL7 billion, a medium size listed company. Omega is part of the four B3 governance indexes (IGC, IGCT, IGNM and ITAG) and has issued three sustainable finance instruments – green bonds – in the last two years. Figure 27 shows the evolution of the price of the shares in comparison with the IBOV benchmark, since the IPO, in base 1000.

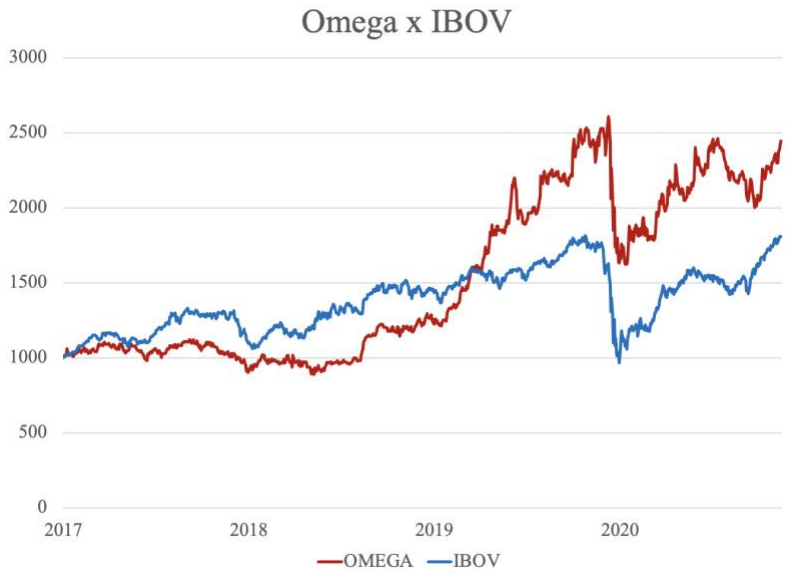

Figure 27 - Comparison between Omega shares and IBOV[30]

It is possible to observe that, in the beginning, the performance of the shares was a bit worse than the benchmark. However, in 2019, Omega shares' price increased considerably. After this moment, even during the 2020 pandemic crisis, the price seemed to have suffered the same impacts of the benchmark index, as it can be seen by the tendency of both lines, but the baseline kept higher. In other words, they were also impacted by the market conditions, but in a way more resilient to them.

Looking at the price of its shares is not enough to really understand what happened to the company during this period. For sure it is a good measure to see how the market reaction in relation to the company was, during the years, but it is important look at the reasons behind it.

In 2019, Omega presented a substantial improve in its financial results when comparing with the same period in the previous year. Using the 3Q data, it is possible to see that there was an increase of 105% in the energy generation in GWh, which was responsible for an increase of 87% in the energy gross profit. The EBITDA of the company increased 94% in this period and the EBITDA margin went from 84.3% to 87.2%. And the net profits were 11% higher than the previous year.

Now looking at the 2020 data, the main highlight was the increase of 78% in the operating capacity of the company, in comparison to the previous year. Also, the energy gross profit and the EBITDA were, respectively, 18 and 9% higher than the 2019 values. Another interesting aspect of

[30] Source: elaborated by the author, based on data available at (INVESTING.COM, 2021)

2020 results is the importance given to the ESG factors mainly related to the Covid emergency. The company, in partnership with Unicef, donated tools and resources for people in need and participated in educational initiatives to improve the online teaching, tackling the social part of the ESG initiatives.

Putting all the aspects together, it is possible to see that the company, mainly from 2019 on, showed important improvements in its financial results and interesting ESG achievements as a whole. This was reflected in the overall market perception of the company, as it can be seen by the share price curve. Even in tougher moments, the company was able to deliver good financial results and not leave its environment and social responsibility aside. Talking about the sustainable finance instruments, Omega seems to be into the tendency launching more and more bonds each year. The question here is if those remarkable financial results are a consequence of the ESG responsibility that the company proposed to take or if the fact of being well-structured and with strong financial results were the cause for Omega to pay attention to the ESG side. Most probably, both ways of seeing the situation are correct and correlated. The involvement in ESG issues, focusing on more critical moments, is seen as a positive aspect by investors, this can be seen by the fact that they tend to be more loyal to the company and keep their shares in moments that do not seem so promising. This will have a positive reflect in the financial stability of the company as well. Together with that, financially strong companies are nowadays more and more into the ESG responsibility as there is not the possibility anymore to not care about it. The better the structure and stability of the company, the easier it is to join the indexes and meet the requirements for launching a green bond, for example.

Now, looking at a company that is not related to an environmentally friendly sector, Petrobras, at first sight, some other interesting insights can be highlighted. It is one of the largest producers of oil and gas in the world, primarily engaged in exploration and production, refining, energy generation and trading. Petrobras' major shareholder is the Brazilian Federal Government. By looking at Figure 28, it is possible to see that the evolution of the benchmark index in comparison with Petrobras shares is not so similar as the it is in the case of Omega.

Figure 28 - Comparison between Petrobras shares and IBOV[31]

Again, there are for sure other possible explanations to this phenomenon, but there is an important aspect to be pointed out. Due to the sector and the straight relation with the Federal Government, Petrobras invested in its ESG status, as a way to show investors that, even with those inevitably related aspects, the company is working to improve its social and environmental responsibility. Petrobras is part of all the six ESG index in B3 and took part in some initiatives to help the local community, for example.

However, there are a lot of controversies. The environmental impact of the oil exploitation is still an issue. Together with that, the company has already been involved in many political scandals, such as *Operação Lava-Jato*. Also, there were important changes in the executive management team during the years, mostly related to political preferences of the government in force at those moments. The market and political sensibility of the company are reflected on the investors' appetite to remain shareholders. Even with the ESG bias in recent years, some aspects are still inevitably related to the company, affecting its financial performance as well. It is possible see in Figure 29 that governance issues and external political scandals, especially in Petrobras case, is not something one-off, but an aspect that can be seen routinely in the financial performance of the company, consequently on stock prices.

[31] Source: elaborated by the author, based on data available at (YAHOO FINANCE, 2021)

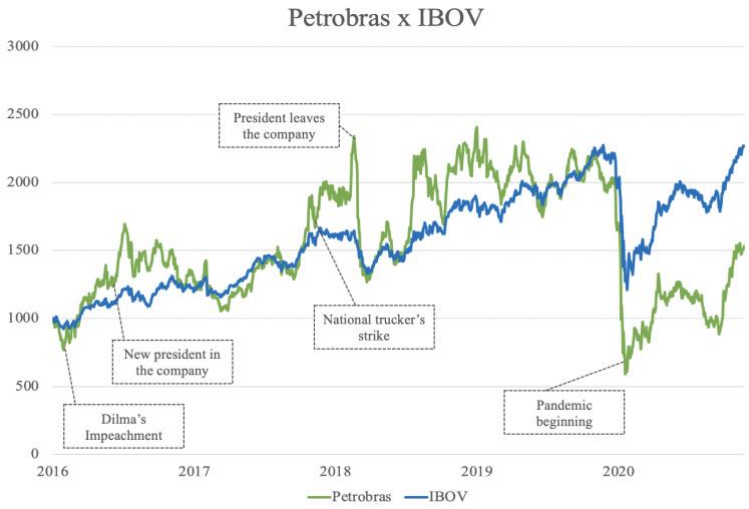

Figure 29 - Petrobras performance with governance and political shocks[32]

Being part of the ESG indexes and issue sustainable finance instruments improve the image that the company has to its investors. The relation with the financial performance is also present, as explained before. However, the relation cause and consequence is not super clear. External factors matter a lot. Showing the world that the company is into the ESG tendency is not enough to guarantee this external good looking and generate positive financial outcomes.

Both companies, Omega and Petrobras, are part of some B3 ESG indexes, even if having a lot of differences in terms of the way they introduce the ESG approach in their operations. For sure, the different sectors they are part of and the different managerial structure they have play an important role in this distinction. Those companies, however, have something in common: the ESG is not part of its core, it is an aspect that is separately introduced in their daily activities. The question that arises is about whether being the ESG strategy taken as a separate aspect of the company's operation has the power to influence positively its financial performance. A deeper dive will be taken in each of the two companies' ESG strategy to understand how this integration with overall operation and strategy is.

8.1. OMEGA ESG STRATEGY

Omega, once it is a renewable energy provider, has not a harmful relationship with the environment in its essence. However, this does not mean that taking care of it is something that the

[32] Source: elaborated by the author, based on data available at (YAHOO FINANCE, 2021)

company has in its core business. In 2020, Omega launched its first integrated report, putting together the main actions and results from sustainable solutions management related to the 17 UN's SDGs. The first step of the sustainable strategy was the releasing of the sustainability policy to ensure the transversal strengthening and to guarantee the alignment of all the internal activities with the company's objectives.

This sustainable strategy, created in 2019, has the aim of making Omega a reference in ESG by 2024. In 2020, the company has able to implement 6 of the 25 actions determined by the plan. They were categorized into 5 groups: Sustainability, Sustainability Culture Alignment, Governance, People and Climate. Together with that, the company understood that everything is connected and affects the stakeholders. In this way, sustainability can only be achieved by creating value for all stakeholders and delivering results that are self-sustaining, mutually reinforcing, and enduring. So, Omega determined how the approach for each stakeholder to engage in the strategy will happen and the scope of those activities.

To better access the objectives and actions, prioritizing them, the company built a Materiality Matrix, as shown in Figures 30 and 31, with the members of the Board of Directors actively participating in the process:

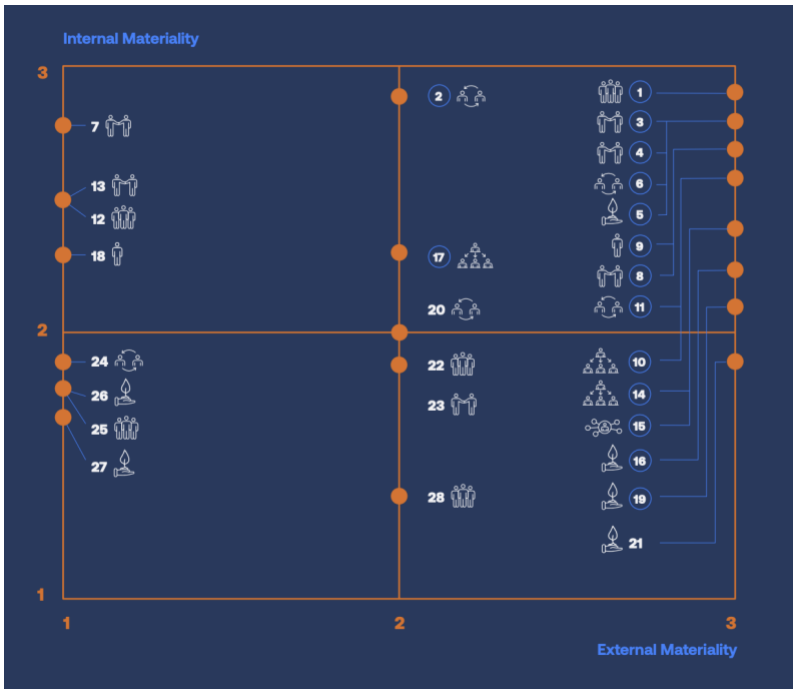

Figure 30 – Omega ESG Materiality Matrix Graph[33]

[33] Source: (OMEGA ENERGIA, 2020)

Figure 31 - Omega Materiality Matrix Subtitles[34]

It is possible to see that there are seven categories to classify the measures (Human rights, Business conduct, Environment, Human resources, Communities, Corporate governance, and Organizational practices). The prioritized topics are mainly part of the Environment and Business conduct categories. This can be seen as an indicator of the company's overall focus for the next few years in terms of ESG conduct.

As a deeper dive in the ESG strategy, the company segmented its acting into the three letters of the ESG acronym. First, in relation to governance, Omega created a Sustainability Committee that advises the Board of Directors in prioritizing sustainability initiatives, setting the ESG agenda for the current year, and monitoring performance against ESG Action Plan. Numbers show the evolution of the company in this aspect: while in 2020, ESG issues accounted for 7.8% of corporate targets and 24% of individual performance metrics, in 2021 those numbers were 6.5% and 24% respectively. This means that the relative importance of the ESG attributes in the employees' remuneration, that is reflected by the goals each employee must achieve, is increasing each year.

[34] Source: (OMEGA ENERGIA, 2020)

In relation to the environment, the main sustainable objective of the company is to lead the clean energy transition by actively supporting efforts to limit global warming and to make Brazil's energy mix cleaner and less carbon intensive. Inside it, there are three verticals: Climate Change, Waste Management and Biodiversity. Actions vary from monitoring to reduction in utilization and waste of natural resources. It is important to state that the main objective of the company, as a whole, is regarding purely financial results, not the environmental one.

Finally, about the social aspect, Omega acts in three areas: with the internal team, the suppliers, and the local communities. The Code of Conduct, Anticorruption, Human Rights and Sustainability Policies define the company's guidelines regarding the social aspects of the ESG agenda: health, safety, people, and community. Internally and with the suppliers, the company focuses on building solid, healthy, and secure relationships. In relation to the community, the ambition is to become a benchmark for social transformation of the regions where it operates by 2024 (OMEGA ENERGIA, 2020).

Having said all of that, it is possible to see how the company is trying to put the ESG strategy into its core operations. Bringing the discussion to the Board and creating a more stable relationship with the parts involved in the value chain are examples of that. However, as it has been introduced before, those activities are still implemented as an additional part of the whole company structure. Employees should change their mindset and daily activities must be adapted to attend the needs of those new metrics and standards. The idea is to implement measures that will tackle the whole employees' journey, from the way activities are performed in the company to the goals that must be reached when talking about remuneration.

It is important to point out that in terms of environment the company is one step ahead in its ESG awareness dissemination. For sure as part of an eco-friendly sector, Omega is favored in this aspect, however, the company, since its foundation, has been worried about it. The clean energy generation is part of its core activities and the positive impact generated in the landscape it operates comes as a natural consequence. For investors, this aspect can be seen as a strength of the company and a competitive differentiator, when thinking about sustaining a superior position in the long run and generating positive financial returns in the future. In this way, the ESG strategy can be connected to the financial performance in a much stronger and resilient way, not just as an additional signal the company expresses to its share and stakeholders.

8.2. PETROBRAS ESG STRATEGY

Petrobras, different from Omega, has a big strategic plan, the Strategic Plan 2021-25, that is based on five pillars to support the implementation of a set of strategies. There are also two topics transversal to the strategic pillars: cultural and digital transformation, as shown in Figure 32:

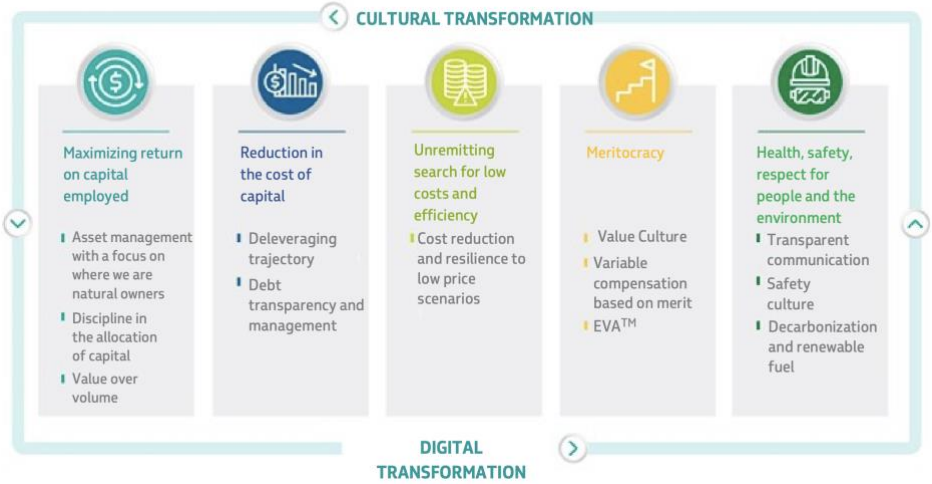

Figure 32 - Pillars of Petrobras Strategic Plan 2021-25[35]

Inside this plan, due to the importance of reinforcing the carbon considerations in the decision-making process of the company, intensively monitoring the emissions in the value chain and maintaining an emphasis on the technological preparation for future renewable energy businesses, Petrobras has determined 10 sustainable commitments inside this agenda, as shown in Figure 33:

Figure 33 - Petrobras 10 Sustainability Commitments[36]

[35] Source: (PETROBRAS, 2020)
[36] Source: (PETROBRAS, 2020)

Now, talking about the ESG strategy itself, the company performed internal interviews and surveys to understand the objectives it should focus, the priorities and the stakeholders involved in each one. The first step was to build a Materiality Matrix, as shown in Figure 34, evaluating the aspects of the ESG strategy into the importance of its impact and the influence in the stakeholder assessment. Having done that, for each topic, the stakeholders involved were determined and the SDGs related, as in Figure 35. This is used by the company as a holistic view of the strategy. The specific measures and goals are better determined for each of them.

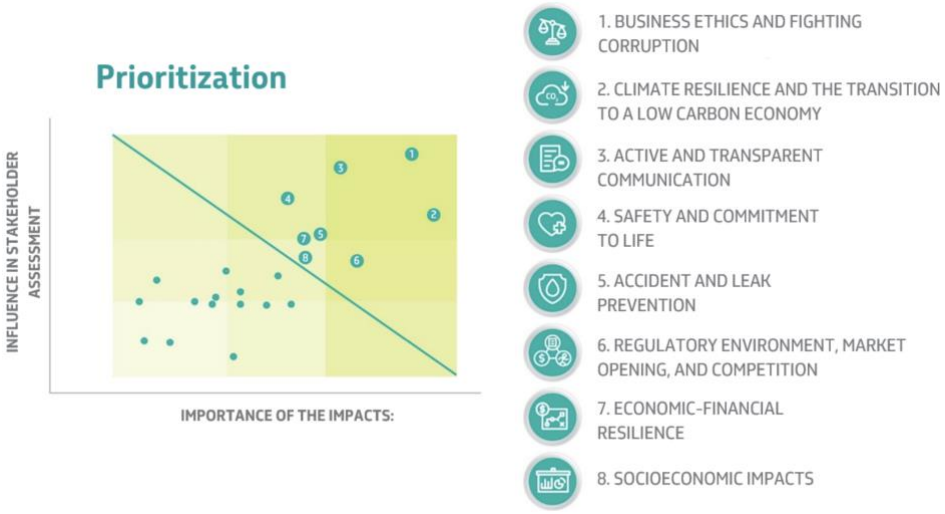

Figure 34 - Petrobras Materiality Matrix[37]

Figure 35 - Petrobras SDGs Priority[38]

[37] Source: (PETROBRAS, 2020)
[38] Source: (PETROBRAS, 2020)

Now, taking a deeper dive into the three letters of the acronym ESG, the company established goals and measures for each of them. Starting with governance, Petrobras is committed to ensure a governance model that allows a balance between efficiency and control, to act with integrity and transparency, and zero tolerance for fraud and corruption. In environmental terms, there are three main focuses in the plan: carbon emissions reduction, biodiversity protection and reduction in water withdrawal. And, in relation to social issues Petrobras takes a results-oriented behavior, rewarding people for the goals achieved, and providing special compensation for delivery, contributing to the attraction and retention of talent, in a strategy to promote meritocracy. Also, safety and respect to human rights are the main values the company is based on (PETROBRAS, 2020).

Again, like Omega's case, it is possible to see how the ESG strategy was implemented separately from the core activities of the company. Measures are not strictly related to the oil extraction and production activities, but to the compensation of the environmental and social negative impacts that those activities are responsible for. In this case, however, the fact that the company is part of an environmentally controversial sector has a stronger weight to be compensated by the ESG measures. For investors, those strategies can be seen as a positive signal, meaning that the company is trying to compensate for its harms in the environment with good actions, but this may not be enough. Also, political scandals involving Petrobras' management team have a huge weight in the compensation balance.

This equilibrium is delicate. The introduction of the ESG measures in a context like this may be seen with good eyes. Having an environmentally controversial operation and adding measures to try to mitigate the damage they create in the communities and in the nature are constantly seen as greenwashing. It is hard for investors to understand those aspects as separate things, when thinking about the introduction of ESG measures, the regular operation of the company is taken also in consideration.

As it was previously explained in item 3, greenwashing is the unjustified appropriation of environmental virtues by organizations or individuals, using marketing techniques. Petrobras is the company responsible for removing oil form the ground and turning it into fossil, which means, is the company that gives people the tools needed to pollute the environment by releasing greenhouse gases. So, by trying to create a great image with the incentive and promotion of ESG initiatives, the greenwashing question becomes really present. The point of showing the media and investors

that it is worried about environmental and social causes, is a way of changing people's focus from the real damage that the company is causing.

8.3. NATURA: THE ESG BENCHMARK

To understand how an ESG strategy can be successfully integrated with the strategy of a company, Natura was selected. The company is reference when talking about the topic both in financial and strategical terms.

First, by looking at the performance of the stock (NTCO3) in relation to the benchmark, IBOV, it is possible to see a considerable overperformance of the company in recent years and in the whole period of analysis. In 2019, Natura had a growth of 73.98% while IBOV had of 31.58% on the same period. Considering a broader period, from September 2015, the company had an increase of 363.34% in its stock prices, more than 3 times the 116.60% increase IBOV had. In 2020, the most critical period for the stock exchange market, Natura was able to register a 26.36% increase while IBOV had a decrease of 14.82% (CAPITALIZO, 2021). Figure 36 illustrates this scenario:

Figure 36 - Comparison between Natura shares and IBOV[39]

It is possible to see that the company showed an important resilience during more critical periods, as it can be seen in 2020. Also, the company was able to deliver an important financial result for its shareholders in the long term, for someone who invested in Natura's stocks five years ago, the numerical return was considerable.

[39] Source: (CAPITALIZO, 2021)

In order to understand how the ESG strategy is something that is part of the company's core, a bit of its history and foundations must be explained. Founded in 1969 as a small cosmetic factory and store, Natura has always launched products addressing the well-being needs of its customers. Their idea, since the beginning, was to bring comfort and care. In 1974, Natura closed its physical stores and moved to the direct sales model. In this model, the bet is on the relationship between the parts, to increase sales reaching regions and social segments that were previously hard to be reached by traditional sales models. Sellers or consultants, in its majority women, sell the products in their neighborhoods and social circle, and are in charge of the product last mile delivery. With this activity, they gain a percentage of the sales they perform and help the company increasing the customer base and geographical penetration. After that, the company increased a lot, expanding to other Latam countries (Argentina and Peru in 1994) and eventually making the public offer of its stocks at B3 in 2004. From that moment on, many social and environmental initiatives were implemented on the company and many projects launched in partnership with public and private institutions. In 2014, Natura became the first listed company to get the B Corporation certificate – a certificate that ensures that companies balance purpose and profit, being legally required to consider the impact of their decisions on their workers, customers, suppliers, community, and the environment (B CORPORATION, 2021). In 2020, after acquiring Avon, Natura became the 4th largest beauty segment in the world (NATURA , 2021).

By looking at today's scenario, the company is well positioned in the global scenario, having about 12% of the market share. It has invested in diversifying the sales channels, focusing on the online selling, and opening physical stores. In geographical terms, Natura is now in different regions, diversifying its currency risk as well and with factories in other countries. In terms of future risks, the company should be aware of currency rates fluctuations and the integration with recent companies that have been acquired (CAPITALIZO, 2021).

Entering the ESG strategy itself, the company is committed to the sustainable development, fragmenting its strategy into four areas. The first one, Conserving the Forest, has been done by trading ethically with communities in Brazil and specially in Amazon, helping them to improve their income and to preserve the region. The second one, Protecting the Climate, is being achieved by a rigorous monitored environment, where all the company guarantees that all manufacturing, transport, and storage of products are 100% carbon free. The third one, Reducing Waste, is being guaranteed by using only recycled, green plastic or refill bottles. And the last, Practicing Fair Trade,

is done by making fair agreements with local populations in order to guarantee the best quality ingredients without burning or deforesting and respecting them. Also, together with the B Corporation certificate, the company has the Leaping Bunny Certificate, a worldwide program with cruelty free standards and legal requirements.

Inside the strategic pillars of the company, it connects the sustainability to the business. In 2014, the 2050 Sustainability Vision was determined, the aim was to make the company a driver of positive impact, delivering value for the entire relationship network in all the businesses, brands, and geographies. This should be done with all products, services, and distribution channels. 2020 was the end of the first cycle, the company had important evolutions in terms of the relation with communities and the use of ingredients. Together with that, the recycling chain was considerably improved. The most remarkable achievement, however, was that Natura was the pioneer with the first integrated model of the valuation of socioenvironmental externalities with the development of the IP&L (Integrated Profit and Loss).

The company has built a chart, putting the 2050 visions, the ambition for 2020, what has been achieved, the SDG related to each of them and the status (fully, partially, and not achieved).[40] The learnings from this period helped to define the goals to set the 2030 Vision.

8.3.1. The Integrated Vision

As previously shown in the case studies and in the numerical analysis, there is no point on just analyzing the financial performance of companies versus its ESG measures to look at how taking care of non-traditional aspects have influence on the monetary return for a company. In this way, alternative solutions should be considered as well. Natura has created an integrated vision of the business, taking care of both sustainable and financial metrics to evaluate the influence of one in the other and the impact the company truly generates. Financial standards alone are not enough to demonstrate the value the company generates for society.

The company considers the effects generated by the business for employees, suppliers, community, consultants, and society in addition to the economic impacts generated. There is the computation of the Consultant-HDI and Social Progress Index (SPI). The first one monitors the living conditions in terms of healthcare, knowledge, and work dimension of the sellers (or

[40] To see the complete diagram, see Annex D

consultants) in order to formulate strategies to improve this impact. The second evaluates the effect of territory management on development.

Together with that, Natura measures the environmental footprint using the Environmental Profit and Loss method, EP&L, that quantifies the financial consequences of the environmental impacts caused by the value chain for society, relating to net revenues. The environmental aspects computed in this analysis are the consumption and quality of water, the emission of greenhouse gases and other atmospheric pollutants, waste generated and land use. Programs and green initiatives are, on the other side, responsible for positive impacts. The company does not release exactly how the computation is done, just the yearly results. The environmental impacts were responsible for a reduction in revenues of 7.4% in 2018, 6.80% in 2019 and 5.6% in 2020, showing a considerable improvement over the years. Together with that, the company also developed the SP&L (Social Profit and Loss), following the same logic as the previous one, considering human and social in quantified terms.

It was recognized the need of developing a disruptive approach that was responsible for connecting the impact of the company's sustainable actions with business decisions and financial returns. In other words, it was necessary to connect the financial performance of the company with the EP&L, the SP&L, the sustainable measures and Natura's strategy as a whole. So, the Integrated Profit and Loss (IP&L) was created, showing how the value generation goes beyond the financial indicators. The methodology consists in attributing value for social, environmental, and human impacts, translating those effects into monetary terms, showing costs and benefits of them. It considers the entire value chain, from raw materials to post consumption. The results should be translated into new learning and incorporated in the business model to contribute to more integrated business decision making.

The IP&L is the solution to make trade-offs in managing impact, so the idea behind it is to consider all stakeholders and capital forms in the same language. The methodology takes the traditional P&L as basis but puts it in perspective, analyzing its relations with the world outside the company's boundaries. For example, when thinking about paying salaries, it generates a cost for the company, reducing profits, but generates value for the employee and it is beneficial for society.

In practice, companies develop its own model, in a personalized way, depending on the sector they are part of, on the country the operation happens and so on. In general lines, however, they tend to encompass six main attributes: financial, manufactured, intellectual, environmental,

social, and human capital. Inside those categories, there are three frameworks that have the final aim of giving the monetary value of the impacts to be combined with the traditional P&L. First, there is the Value Creation Framework that provides the list of impacts. Then, the Impact Measurement comes to quantify the aspects on this list, and, in the end, the Impact Valuation monetizes those values (TRUE PRICE, 2021).

Natura's IP&L is the way to develop the goals of the 2050 Vision, guaranteeing that the management team is driving the business in a way to promote impact on society. This vision should also be integrated to the commitment with the B Corporation Movement, creating a more inclusive and sustainable economy (NATURA, 2021). Figure 37 shows the aspects Natura considers in the IP&L. Also, there is not an official release of the exact method used in the IP&L, just the attributes considered and the final numbers the company show investors.

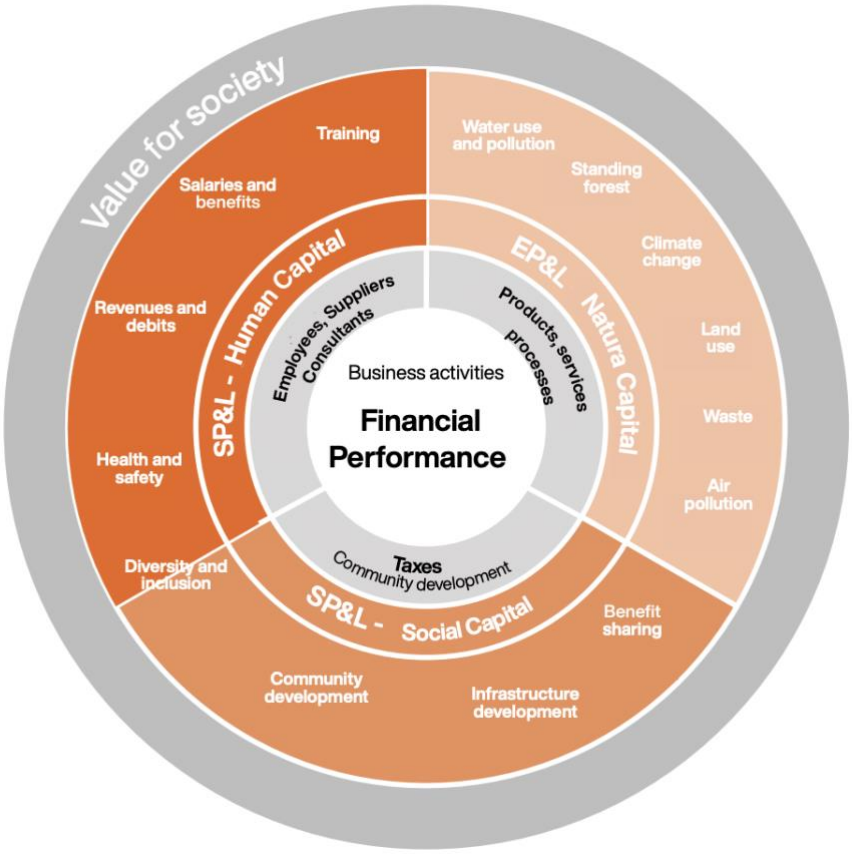

Figure 37 - Aspects considers in Natura's IP&L[41]

[41] Source: (NATURA, 2021)

It is possible to see that all the goals inside the three categories are related, in a way, to the Sustainable Development Goals and, therefore, to the company's agenda. They are not just related to the operations and boundaries of the company, but also to the environment and society it is part of. From the micro to the macro perspective, Natura has a complete ESG performance. From the core of its products and operations, since the raw material extraction, to the outside impact generated in the society, the company measures and considers all its responsibility and role.

9. FINAL REMARKS

Coming back to the main objective of the present report, that was to understand whether the engagement in ESG indexes and the issuance of sustainable finance instruments do contribute positively to the financial performance of the company, especially in the Brazilian case, some conclusions can be pointed out.

First, in the era of the impact revolution, the one we are today, that impact is not seen as something secondary, but as a priority. It is becoming impossible for companies not being minimally into the environmental, social and governance causes. It is not enough to address the responsibility just to the C-level employees anymore, when talking about companies, day-to-day activities should be performed considering the impacts they generate in all aspects of the ESG studies. Even if in some cases the legislations and the requirements are not yet well structured and determined, it is possible to see that countries are continuously implementing new requirements and goals to contribute to the Sustainable Development Goals in the 2030 Agenda for Sustainable Development made by the United Nations.

The financial market as a whole is being affected by this new trend. More attention is taken to those non-financial attributes when looking at companies and sectors. This is creating the necessity of new tools and measurements. Many rating agencies created their own analytical instruments, ratings, and indexes for companies in the ESG attributes. There is still, however, not a uniform or universal tool in the sector.

Together with that, it is possible to see the increase in the issuance and sophistication of the sustainable finance instruments. More alternative types, such as sustainability linked bonds, gained more space in recent years. Also, pandemic linked bonds also had their importance in the field.

Now, talking about Brazil, the whole historical, political, and economic situation of the country may worry the investors in relation to the future stability and risk associated to the investments. In this way, there is an important opportunity for the development of an ESG environment, where companies create a better risk management and try to focus on the establishment of long-term sustainable strategies. The deep dive taken into the historical performance of the listed companies in B3 in recent years, together with the research made in other similar studies around the world, pointed out some important reflections.

Although the analysis was performed just for one specific set of indexes and in a specific context and country, the question of whether it makes sense to analyze the financial performance

of the companies compared to the binary approach of being or not part of indexes, in other words. meeting or not environmental, social and governance requirements, could be answered. The conclusion here is that no, there is no sense on just performing a pure numerical approach to reach into a conclusion about the ESG influence in the company's financial performance.

Sustainable indexes showed, in most of the cases, an overperformance when compared to their benchmarks. However, this statement is not enough to guarantee that a company which is part of those indexes will have its financial performance improved. Also, being part of the index does not guarantee a remarkable ESG performance as well. Bigger and more structured companies will, inevitably, need to dedicate their strengths to meet regulatory requirements and keep their image appealing for the society. This because, those companies have a greater exposition and importance in society, being targets of regulatory entities and part of important initiatives. In this way, they will probably have more organized, structured and developed ESG initiatives and measurements, being easier to become part of those indexes. It is not a consequence relation, but a causal one.

Measurement tools are not yet uniform or universal, there is still a lot to be done in terms of innovation in the sector. Current available indexes are not able to measure, with accuracy, if financial performance of companies is strictly related to their ESG implementation. The problem is on the measurement tools and not on what is being measured. In order to evaluate if implemented measures in the operations of the company do have an impact on their ESG and financial results, it would be necessary to analyze the whole scenario, understand how the environment that company is in and the economic situation it is part of influence on its performance. Also, the evaluation of how it responds to changes in the current situation and in the society should be part of this analysis.

It is important to point out that there are many companies that implement ESG initiatives to compensate the impact they generate in society and in the environment. This can be questioned: is it legitimate to operate in ways that are not sustainable, performing activities that are harmful to society and environment, and compensate them with ESG initiatives totally separate from the core activities of the company? Which is the limit between compensation and greenwashing?

Greenwashing is the creation of a false impression about how a company's operation is in terms of the relation with the environment. Those separate measures introduced to compensate the harm generated in the environment and in society can be seen as a way of greenwashing. This was the case of Petrobras, that was presented in the case study section. The company's operation is mainly related to the exploitation of fossil fuels, that is one of the main causes today of greenhouse

gases emissions. However, the company donates funds and creates initiatives to collaborate with the populations that are affected by those activities. So, there is no sense on evaluating the participation of the company in those ESG indexes to see how they affect its financial performance. The two aspects are not just completely separated, but are controversial when combined in the same company.

In the same line of thought, Omega Energia was analyzed. The company, as it was already explained, is naturally part of an environmentally friendly sector. However, the implementation of ESG initiatives is done as something complementary, not part of the core operation of the company. In this way, although the introduction of those measures is not controversial with the operations (as it was Petrobras case), it is something unattached. Because of that, there is also no sense on evaluating the influence of those measures in the financial performance of the company only by a numerical approach. The whole environment, society and relationships should be considered.

Because of that, Natura's case was presented. Different from the other cases, the company has the ESG measures as part of its core activities. Every product and service are developed considering those attributes. This is also perceived with good eyes by the investors, not just in terms of the positive impact that is generated, but of the resilience of the company in the long term and in more critical moments. Also, Natura uses an interesting way of measuring the impact of ESG causes in its financial performance. It is the IP&L, previously explained in details, that integrated in numerical terms the influence of the actions of the company in ESG terms in its traditional profit and loss statement.

Wrapping up everything that was studied, it is possible to say that for companies really implementing ESG measures in its activities and seeing positive financial consequences of it, those measures should be implemented in its core activities. In this way, it becomes possible to evaluate the influence in monetary terms that those measures are being responsible for. However, there is still a problem with the measurement tools used by companies. There is a lack of uniformity and accuracy in the evaluations, not really showing what it proposes to show. There is an enormous room for improvement and development in this area. Not implementing, not measuring, and not monitoring ESG measures in companies is not an option anymore.

In order to propose an alternative to the current indexes and ways to see the ESG performance of companies, future works should be focused on the measurement tools. In other words, new instruments, that accurately put together financial and sustainable measures, should be

developed, and used when evaluating companies. As today it is not enough to just look at number to see how a company is performing, its results should be shown in a way that is coherent to that. Financial and sustainable performances should be mixed and combined. Natura is in the right path with the use of the IP&L, but there is still a lot of improvements that could be added to it and a lot of research to be performed globally speaking.

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ANNEX A – Stocks per indexes 2021

Empresa	Código	Ação	IGC	IGCT	IGNM	ITAG	ISEE	ICO2	#
ASSAI	ON NM	ASAI3	x	x	x	x	x	x	6
B2W DIGITAL	ON NM	BTOW3	x	x	x	x	x	x	6
BRASIL	ON NM	BBAS3	x	x	x	x	x	x	6
BRF SA	ON NM	BRFS3	x	x	x	x	x	x	6
CCR SA	ON NM	CCRO3	x	x	x	x	x	x	6
CIELO	ON NM	CIEL3	x	x	x	x	x	x	6
COSAN	ON NM	CSAN3	x	x	x	x	x	x	6
CPFL ENERGIA	ON NM	CPFE3	x	x	x	x	x	x	6
DURATEX	ON NM	DTEX3	x	x	x	x	x	x	6
ECORODOVIAS	ON NM	ECOR3	x	x	x	x	x	x	6
ENERGIAS BR	ON NM	ENBR3	x	x	x	x	x	x	6
ENGIE BRASIL	ON NM	EGIE3	x	x	x	x	x	x	6
FLEURY	ON NM	FLRY3	x	x	x	x	x	x	6
GRUPO NATURA	ON NM	NTCO3	x	x	x	x	x	x	6
LIGHT S/A	ON NM	LIGT3	x	x	x	x	x	x	6
LOJAS RENNER	ON NM	LREN3	x	x	x	x	x	x	6
M.DIASBRANCO	ON NM	MDIA3	x	x	x	x	x	x	6
MARFRIG	ON NM	MRFG3	x	x	x	x	x	x	6
MINERVA	ON NM	BEEF3	x	x	x	x	x	x	6
MOVIDA	ON NM	MOVI3	x	x	x	x	x	x	6
MRV	ON NM	MRVE3	x	x	x	x	x	x	6
NEOENERGIA	ON NM	NEOE3	x	x	x	x	x	x	6
P.ACUCAR-CBD	ON NM	PCAR3	x	x	x	x	x	x	6
PETROBRAS BR	ON NM	BRDT3	x	x	x	x	x	x	6
SUZANO S.A.	ON NM	SUZB3	x	x	x	x	x	x	6
TIM	ON NM	TIMS3	x	x	x	x	x	x	6
WEG	ON NM	WEGE3	x	x	x	x	x	x	6
B3	ON NM	B3SA3	x	x	x	x		x	5
BR MALLS PAR	ON NM	BRML3	x	x	x	x		x	5
BRADESCO	ON N1	BBDC3	x	x		x	x	x	5
BRADESCO	PN N1	BBDC4	x	x		x	x	x	5
BTGP BANCO	UNT N2	BPAC11	x	x		x	x	x	5
COPASA	ON NM	CSMG3	x	x	x	x		x	5
HYPERA	ON NM	HYPE3	x	x	x	x		x	5
ITAUSA	PN N1	ITSA4	x	x		x	x	x	5
ITAUUNIBANCO	PN N1	ITUB4	x	x		x	x	x	5
JBS	ON NM	JBSS3	x	x	x	x		x	5
KLABIN S/A	UNT N2	KLBN11	x	x		x	x	x	5
LOCALIZA	ON NM	RENT3	x	x	x	x		x	5
LOCAMERICA	ON NM	LCAM3	x	x	x	x		x	5
LOJAS AMERIC	ON N1	LAME3	x	x		x	x	x	5
LOJAS AMERIC	PN N1	LAME4	x	x		x	x	x	5
MAGAZ LUIZA	ON NM	MGLU3	x	x	x	x		x	5
PETROBRAS	ON N2	PETR3	x	x		x	x	x	5
PETROBRAS	PN N2	PETR4	x	x		x	x	x	5
PORTO SEGURO	ON NM	PSSA3	x	x	x	x		x	5
RAIADROGASIL	ON NM	RADL3	x	x	x	x		x	5
RUMO S.A.	ON NM	RAIL3	x	x	x	x		x	5
ULTRAPAR	ON NM	UGPA3	x	x	x	x		x	5
AES TIETE E	UNT N2	TIET11	x	x		x	x		4
ALIANSCSONAE	ON NM	ALSO3	x	x	x	x			4
ALLIAR	ON NM	AALR3	x	x	x	x			4
ANIMA	ON NM	ANIM3	x	x	x	x			4
AREZZO CO	ON NM	ARZZ3	x	x	x	x			4
BBSEGURIDADE	ON NM	BBSE3	x	x	x	x			4
BK BRASIL	ON NM	BKBR3	x	x	x	x			4
BR PROPERT	ON NM	BRPR3	x	x	x	x			4
BRASKEM	PNA N1	BRKM5	x	x		x		x	4
CAMIL	ON NM	CAML3	x	x	x	x			4
CARREFOUR BR	ON NM	CRFB3	x	x	x	x			4

CEA MODAS	ON NM	CEAB3	x	x	x	x			4
CEMIG	PN N1	CMIG4	x	x			x	x	4
CENTAURO	ON NM	CNTO3	x	x	x	x			4
CIA HERING	ON NM	HGTX3	x	x	x	x			4
COGNA ON	ON NM	COGN3	x	x	x	x			4
COPEL	PNB N1	CPLE6	x	x			x	x	4
CVC BRASIL	ON NM	CVCB3	x	x	x	x			4
CYRELA REALT	ON NM	CYRE3	x	x	x	x			4
DIRECIONAL	ON NM	DIRR3	x	x	x	x			4
ELETROBRAS	ON N1	ELET3	x	x			x	x	4
ELETROBRAS	PNB N1	ELET6	x	x			x	x	4
EMBRAER	ON NM	EMBR3	x	x	x	x			4
ENAUTA PART	ON NM	ENAT3	x	x	x	x			4
ENEVA	ON NM	ENEV3	x	x	x	x			4
EQUATORIAL	ON NM	EQTL3	x	x	x	x			4
EVEN	ON NM	EVEN3	x	x	x	x			4
EZTEC	ON NM	EZTC3	x	x	x	x			4
GAFISA	ON NM	GFSA3	x	x	x	x			4
GERDAU	PN N1	GGBR4	x	x		x		x	4
GOL	PN N2	GOLL4	x	x		x		x	4
GRENDENE	ON NM	GRND3	x	x	x	x			4
GRUPO SOMA	ON NM	SOMA3	x	x	x	x			4
HAPVIDA	ON NM	HAPV3	x	x	x	x			4
HELBOR	ON NM	HBOR3	x	x	x	x			4
IGUATEMI	ON NM	IGTA3	x	x	x	x			4
IHPARDINI	ON NM	PARD3	x	x	x	x			4
IMC S/A	ON NM	MEAL3	x	x	x	x			4
INDS ROMI	ON NM	ROMI3	x	x	x	x			4
INTERMEDICA	ON NM	GNDI3	x	x	x	x			4
IOCHP-MAXION	ON NM	MYPK3	x	x	x	x			4
IRBBRASIL RE	ON NM	IRBR3	x	x	x	x			4
JHSF PART	ON NM	JHSF3	x	x	x	x			4
LINX	ON NM	LINX3	x	x	x	x			4
LOCAWEB	ON NM	LWSA3	x	x	x	x			4
LOG COM PROP	ON NM	LOGG3	x	x	x	x			4
LOG-IN	ON NM	LOGN3	x	x	x	x			4
LOJAS MARISA	ON NM	AMAR3	x	x	x	x			4
LOPES BRASIL	ON NM	LPSB3	x	x	x	x			4
METAL LEVE	ON NM	LEVE3	x	x	x	x			4
MILLS	ON NM	MILS3	x	x	x	x			4
MITRE REALTY	ON NM	MTRE3	x	x	x	x			4
MULTIPLAN	ON N2	MULT3	x	x		x		x	4
ODONTOPREV	ON NM	ODPV3	x	x	x	x			4
OMEGA GER	ON NM	OMGE3	x	x	x	x			4
PETRORIO	ON NM	PRIO3	x	x	x	x			4
PORTOBELLO	ON NM	PTBL3	x	x	x	x			4
POSITIVO TEC	ON NM	POSI3	x	x	x	x			4
QUALICORP	ON NM	QUAL3	x	x	x	x			4
QUERO-QUERO	ON NM	LJQQ3	x	x	x	x			4
SABESP	ON NM	SBSP3	x	x	x	x			4
SANEPAR	UNT N2	SAPR11	x	x		x		x	4
SANTOS BRP	ON NM	STBP3	x	x	x	x			4
SAO MARTINHO	ON NM	SMTO3	x	x	x	x			4
SER EDUCA	ON NM	SEER3	x	x	x	x			4
SIMPAR	ON NM	SIMH3	x	x	x	x			4
SINQIA	ON NM	SQIA3	x	x	x	x			4
SLC AGRICOLA	ON NM	SLCE3	x	x	x	x			4
SMILES	ON NM	SMLS3	x	x	x	x			4
SUL AMERICA	UNT N2	SULA11	x	x		x		x	4
TECNISA	ON NM	TCSA3	x	x	x	x			4
TEGMA	ON NM	TGMA3	x	x	x	x			4
TENDA	ON NM	TEND3	x	x	x	x			4

TOTVS	ON NM	TOTS3	x	x	x	x			4
TRISUL	ON NM	TRIS3	x	x	x	x			4
TUPY	ON NM	TUPY3	x	x	x	x			4
VALE	ON NM	VALE3	x	x	x	x			4
VALID	ON NM	VLID3	x	x	x	x			4
VIAVAREJO	ON NM	VVAR3	x	x	x	x			4
VIVARA S.A.	ON NM	VIVA3	x	x	x	x			4
VULCABRAS	ON NM	VULC3	x	x	x	x			4
WIZ S.A.	ON NM	WIZS3	x	x	x	x			4
YDUQS PART	ON NM	YDUQ3	x	x	x	x			4
3R PETROLEUM	ON NM	RRRP3	x		x	x			3
ABC BRASIL	PN N2	ABCB4	x	x		x			3
AERIS	ON NM	AERI3	x		x	x			3
ALPER S.A.	ON NM	APER3	x		x	x			3
ALPHAVILLE	ON NM	AVLL3	x		x	x			3
ALUPAR	UNT N2	ALUP11	x	x		x			3
AMBIPAR	ON NM	AMBP3	x		x	x			3
AZUL	PN N2	AZUL4	x	x		x			3
BANCO BMG	PN N1	BMGB4	x	x		x			3
BANCO INTER	PN N2	BIDI4	x	x		x			3
BANCO INTER	UNT N2	BIDI11	x	x		x			3
BANCO PAN	PN N1	BPAN4	x	x		x			3
BANRISUL	PNB N1	BRSR6	x	x		x			3
BEMOBI TECH	ON NM	BMOB3	x		x	x			3
BIOSEV	ON NM	BSEV3	x		x	x			3
BOA VISTA	ON NM	BOAS3	x		x	x			3
BR BROKERS	ON NM	BBRK3	x		x	x			3
BRADESPAR	PN N1	BRAP4	x	x		x			3
BRASILAGRO	ON NM	AGRO3	x		x	x			3
CEMIG	ON N1	CMIG3	x	x			x		3
CESP	PNB N1	CESP6	x	x		x			3
COPEL	ON N1	CPLE3	x	x			x		3
CRUZEIRO EDU	ON NM	CSED3	x		x	x			3
CSU CARDSYST	ON NM	CARD3	x		x	x			3
CURY S/A	ON NM	CURY3	x		x	x			3
CYRE COM-CCP	ON NM	CCPR3	x		x	x			3
D1000VFARMA	ON NM	DMVF3	x		x	x			3
ELETROMIDIA	ON NM	ELMD3	x		x	x			3
ENERGISA	UNT N2	ENGI11	x	x		x			3
ENJOEI	ON NM	ENJU3	x		x	x			3
ESPACOLASER	ON NM	ESPA3	x		x	x			3
ESTAPAR	ON NM	ALPK3	x		x	x			3
FOCUS ON	ON NM	POWE3	x		x	x			3
GENERALSHOPP	ON NM	GSHP3	x		x	x			3
GERDAU MET	PN N1	GOAU4	x	x		x			3
GRUPO MATEUS	ON NM	GMAT3	x		x	x			3
HBR REALTY	ON NM	HBRE3	x		x	x			3
HIDROVIAS	ON NM	HBSA3	x		x	x			3
INTELBRAS	ON NM	INTB3	x		x	x			3
IRANI	ON NM	RANI3	x		x	x			3
ITAUUNIBANCO	ON N1	ITUB3	x	x			x		3
JALLESMACHAD	ON NM	JALL3	x		x	x			3
LAVVI	ON NM	LAVV3	x		x	x			3
MARCOPOLO	PN N2	POMO4	x	x		x			3
MELIUZ	ON NM	CASH3	x		x	x			3
MELNICK	ON NM	MELK3	x		x	x			3
MOBLY	ON NM	MBLY3	x		x	x			3
MOSAICO	ON NM	MOSI3	x		x	x			3
MOURA DUBEUX	ON NM	MDNE3	x		x	x			3
NEOGRID	ON NM	NGRD3	x		x	x			3
OCEANPACT	ON NM	OPCT3	x		x	x			3
ORIZON	ON NM	ORVR3	x		x	x			3

OUROFINO S/A	ON NM	OFSA3	x		x	x			3
PAGUE MENOS	ON NM	PGMN3	x		x	x			3
PARANAPANEMA	ON NM	PMAM3	x		x	x			3
PETZ	ON NM	PETZ3	x		x	x			3
PLANOEPLANO	ON NM	PLPL3	x		x	x			3
PRINER	ON NM	PRNR3	x		x	x			3
PROFARMA	ON NM	PFRM3	x		x	x			3
RANDON PART	PN N1	RAPT4	x	x		x			3
REDE D OR	ON NM	RDOR3	x		x	x			3
RNI	ON NM	RDNI3	x		x	x			3
ROSSI RESID	ON NM	RSID3	x		x	x			3
SANEPAR	PN N2	SAPR4	x	x		x			3
SANTANDER BR	UNT	SANB11				x	x	x	3
SAO CARLOS	ON NM	SCAR3	x		x	x			3
SEQUOIA LOG	ON NM	SEQL3	x		x	x			3
SPRINGS	ON NM	SGPS3	x		x	x			3
TAESA	UNT N2	TAEE11	x	x		x			3
TAURUS ARMAS	PN N2	TASA4	x	x		x			3
TECHNOS	ON NM	TECN3	x		x	x			3
TERRA SANTA	ON NM	TESA3	x		x	x			3
TIME FOR FUN	ON NM	SHOW3	x		x	x			3
TRAN PAULIST	PN N1	TRPL4	x	x				x	3
TRIUNFO PART	ON NM	TPIS3	x		x	x			3
UNICASA	ON NM	UCAS3	x		x	x			3
VAMOS	ON NM	VAMO3	x		x	x			3
WESTWING	ON NM	WEST3	x		x	x			3
ALPARGATAS	PN N1	ALPA4	x	x					2
BANRISUL	ON N1	BRSR3	x			x			2
BRADESPAR	ON N1	BRAP3	x			x			2
BRASKEM	ON N1	BRKM3	x			x			2
CEDRO	PN N1	CEDO4	x			x			2
CELESC	PN N2	CLSC4	x			x			2
CSNMINERACAO	ON N2	CMIN3	x			x			2
DIMED	ON N2	PNVL3	x			x			2
DIMED	PN N2	PNVL4	x			x			2
GERDAU	ON N1	GGBR3	x			x			2
GERDAU MET	ON N1	GOAU3	x			x			2
MARCOPOLO	ON N2	POMO3	x			x			2
PINE	PN N2	PINE4	x			x			2
TAURUS ARMAS	ON N2	TASA3	x			x			2
TELEF BRASIL	ON	VIVT3					x	x	2
TRACK FIELD	PN N2	TFCO4	x			x			2
USIMINAS	PNA N1	USIM5	x	x					2
ALPARGATAS	ON N1	ALPA3	x						1
AMBEV S/A	ON	ABEV3						x	1
BAHEMA	ON MA	BAHI3				x			1
BANESE	PN	BGIP4				x			1
BIOMM	ON MA	BIOM3				x			1
CEDRO	ON N1	CEDO3	x						1
CESP	ON N1	CESP3	x						1
COTEMINAS	PN	CTNM4				x			1
CR2	ON	CRDE3				x			1
DASA	ON	DASA3				x			1
EUCATEX	ON N1	EUCA3	x						1
EUCATEX	PN N1	EUCA4	x						1
FERBASA	PN N1	FESA4	x						1
FRAS-LE	ON N1	FRAS3	x						1
GER PARANAP	PN	GEPA4				x			1
GRAZZIOTIN	ON	CGRA3				x			1
GRAZZIOTIN	PN	CGRA4				x			1
ITAUSA	ON N1	ITSA3	x						1
KEPLER WEBER	ON	KEPL3				x			1

MERC BRASIL	ON N1	BMEB3	x		1
MERC BRASIL	PN N1	BMEB4	x		1
PETTENATI	PN	PTNT4		x	1
RANDON PART	ON N1	RAPT3	x		1
TRAN PAULIST	ON N1	TRPL3	x		1
USIMINAS	ON N1	USIM3	x		1
COELCE	PNA	COCE5			0
DOMMO	ON	DMMO3			0
GUARARAPES	ON	GUAR3			0
JEREISSATI	ON	JPSA3			0
RECRUSUL	PN	RCSL4			0
SID NACIONAL	ON	CSNA3			0
UNIPAR	PNB	UNIP6			0

ANNEX B – Subsectors' representation in each Index

Subsector	IGC	IGCT	IGNM	ITAG	ISE	ICO2
Agribusiness	1.26%	0.65%	1.80%	1.32%		
Automobiles and Motorcycles	0.84%	1.29%	1.20%	0.88%		
Beverage						1.59%
Chemicals	0.84%	0.65%		0.88%		1.59%
Construction and Engineering	0.84%	1.29%	1.20%	0.88%		
Diversified	4.20%	5.16%	5.99%	4.85%	2.13%	4.76%
Diversified Financial Services	1.68%	1.29%	2.40%	1.76%	2.13%	3.17%
Diversified Services	1.68%	0.65%	2.40%	1.76%		
Eletric Utilities	10.08%	12.90%	5.39%	7.05%	25.53%	15.87%
Financial Intermediaries	7.56%	8.39%	0.60%	7.05%	17.02%	11.11%
Food Processors	3.78%	4.52%	5.39%	3.96%	8.51%	7.94%
Hardware and Equipments	0.84%	0.65%	1.20%	0.88%		
Heavy Construction	8.40%	7.74%	11.98%	9.25%	2.13%	1.59%
Holdings - Diversified	0.42%	0.65%	0.60%	0.44%		
Hotels and Restaurants	0.84%	1.29%	1.20%	0.88%		
Household Products	0.42%		0.60%	0.44%		
Insurance, Life and Multi-line	2.52%	3.23%	2.99%	2.64%		3.17%
Machines and Equipments	2.10%	1.94%	1.80%	2.64%	2.13%	1.59%
Media	0.42%		0.60%	0.44%		
Medical and Hospitalar Services	3.36%	4.52%	4.79%	3.96%	2.13%	1.59%
Mining	1.68%	1.29%	0.60%	1.76%		
Oil, Gas and Biofuels	3.78%	4.52%	4.19%	3.96%	8.51%	7.94%
Personal Care and Cleaning Products	0.42%	0.65%	0.60%	0.44%	2.13%	1.59%
Pharmaceutical and Others Products	0.42%		0.60%	0.88%		
Real Estate	5.04%	4.52%	6.59%	5.29%		3.17%
Retail	5.88%	7.74%	7.19%	7.05%	8.51%	7.94%
Retail and Distribution	4.62%	3.23%	5.39%	4.85%	4.26%	6.35%
Software and Services	4.62%	2.58%	6.59%	4.85%		
Steel and Metalurgy	3.36%	1.94%	0.60%	2.20%		1.59%
Telecommunications	0.42%	0.65%	0.60%	0.44%	4.26%	3.17%
Textiles, Apparel and Footwear	4.62%	3.23%	3.59%	4.41%		
Transportation	4.20%	5.16%	4.79%	4.41%	4.26%	6.35%
Transportation Equipment and Components	2.94%	2.58%	1.20%	2.20%		
Travel, Entertainment and Leisure	0.84%	0.65%	1.20%	0.88%		
Water Utilities	2.52%	2.58%	2.40%	2.64%		3.17%
Wood and Paper	2.52%	1.94%	1.80%	1.76%	6.38%	4.76%

ANNEX C – Sustainable Finance Instruments B3 2020-2021

Code	Type	Issuer		Value	Issue date	Maturity	Variable spread	Fixed spread (%)
IGSN15	DEB	IGUA SANEAMENTO S.A	R$	620,486,000.00	7/15/20	7/15/34	IPCA	6.10
PASN12	DEB	PARANAGUA SANEAMENTO S/A	R$	259,804,000.00	7/15/20	7/15/30	IPCA	6.10
CRA02000337	CRA	ECO SECURITIZADORA DE DIREITOS CREDITORIOS DO AGRONEGOCIO S.A.	R$	20,000,000.00	8/20/20	8/30/27	IPCA	7.00
CRA02000338	CRA	ECO SECURITIZADORA DE DIREITOS CREDITORIOS DO AGRONEGOCIO S.A.	R$	5,000,000.00	8/20/20	8/30/27	IPCA	9.00
ENEV26	DEB	ENEVA S.A.	R$	573,969,000.00	9/15/20	9/15/35	IPCA	4.50
OMGE12	DEB	OMEGA GERACAO S.A.	R$	110,000,000.00	9/15/20	9/15/28	IPCA	4.37
OMGE22	DEB	OMEGA GERACAO S.A.	R$	50,000,000.00	9/15/20	9/15/28	IPCA	4.37
BRKP18	DEB	BRK AMBIENTAL PARTICIPACOES S/A	R$	795,000,000.00	9/15/20	9/15/25	DI	3.80
BRKP28	DEB	BRK AMBIENTAL PARTICIPACOES S/A	R$	305,000,000.00	9/15/20	3/15/21	IPCA	5.54
GYRA12	DEB	COMPANHIA SECURITIZADORA DE CREDITOS FINANCEIROS VERT-GYRA	R$	35,000,000.00	9/30/20	3/30/24	DI	7.00
GYRA22	DEB	COMPANHIA SECURITIZADORA DE CREDITOS FINANCEIROS VERT-GYRA	R$	5,000,000.00	9/30/20	3/30/24	DI	11.00
GYRA32	DEB	COMPANHIA SECURITIZADORA DE CREDITOS FINANCEIROS VERT-GYRA	R$	10,000,000.00	9/30/20	3/30/24	DI	0.00
LTTE15	DEB	LINHAS DE TAUBATE TRANSMISSORA DE ENERGIA S.A.	R$	410,000,000.00	11/19/20	10/15/22	IPCA	5.09
CRA020003PZ	CRA	ISEC SECURITIZADORA S.A	R$	65,550,000.00	11/27/20	11/26/25	DI	3.70
CRA020003Q0	CRA	ISEC SECURITIZADORA S.A	R$	84,450,000.00	11/27/20	11/26/25	IPCA	5.18
CRA020003VB	CRA	ISEC SECURITIZADORA S.A	R$	480,000,000.00	12/22/20	12/11/25	IPCA	3.67
CRA020003VK	CRA	GAIA IMPACTO SECURITIZADORA S/A	R$	1,050,000,000.00	12/17/20	3/30/26	IPCA	5.00
CTEE29	DEB	CTEEP - COMPANHIA DE TRANSMISSAO DE ENERGIA ELETRICA PAULISTA	R$	800,000,000.00	11/15/20	5/15/44	IPCA	5.30
CTEEA0	DEB	CTEEP - COMPANHIA DE TRANSMISSAO DE ENERGIA ELETRICA PAULISTA	R$	672,500,000.00	1/15/21	7/15/44	IPCA	5.07
MTRJ19	DEB	CONCESSAO METROVIARIA DO RIO DE JANEIRO S/A	R$	1,200,000,000.00	1/15/21	12/15/31	IPCA	7.09
CRA021000GP	CRA	ECO SECURITIZADORA DE DIREITOS CREDITORIOS DO AGRONEGOCIO S.A.	R$	30,000,000.00	2/18/21	8/26/26	IPCA	5.50
CRA021000GQ	CRA	ECO SECURITIZADORA DE DIREITOS CREDITORIOS DO AGRONEGOCIO S.A.	R$	30,000,000.00	2/18/21	8/26/26	IPCA	7.50
21B0134869	CRI	TRUE SECURITIZADORA S/A	R$	16,016,651.00	2/9/21	3/6/36	IPCA	10.00
CRA021000MB	CRA	ECO SECURITIZADORA DE DIREITOS CREDITORIOS DO AGRONEGOCIO S.A.	R$	358,425,000.00	3/23/21	3/15/27	IPCA	4.45
CRA021000MF	CRA	VERT COMPANHIA SECURITIZADORA	R$	347,809,000.00	3/30/21	3/16/26	IPCA	4.93
CRA021000MI	CRA	ECO SECURITIZADORA DE DIREITOS CREDITORIOS DO AGRONEGOCIO S.A.	R$	25,000,000.00	3/19/21	3/26/29	IPCA	7.00
CRA021000M9	CRA	ISEC SECURITIZADORA S.A	R$	253,636,000.00	3/22/21	3/16/26	IPCA	5.01
ESBG11	DEB	EI SUBHOLDING S.A.	R$	150,000,000.00	3/15/21	3/15/30	IPCA	5.40
OMGE13	DEB	OMEGA GERACAO S.A.	R$	1,050,000,000.00	3/15/21	3/15/29	DI	1.99
RSAN34	DEB	COMPANHIA RIOGRANDENSE DE SANEAMENTO - CORSAN	R$	115,000,000.00	2/15/21	2/15/28	IPCA	4.39
RSAN44	DEB	COMPANHIA RIOGRANDENSE DE SANEAMENTO - CORSAN	R$	335,000,000.00	2/15/21	2/15/31	IPCA	4.83
SDMH11	DEB	SERRA DO MEL HOLDING S.A	R$	142,000,000.00	3/15/21	12/15/35	IPCA	5.29
3951021MA1	CFF	GREEN FIDC SOLAR GD - FUNDO DE INVESTIMENTO EM DIREITOS CREDITORIOS SOCIOAMBIENTAL - ENERGIA SOLAR	R$	7,168,000.00	3/31/21	4/30/30	N/A	N/A
3951021MA2	CFF	GREEN FIDC SOLAR GD - FUNDO DE INVESTIMENTO EM DIREITOS CREDITORIOS SOCIOAMBIENTAL - ENERGIA SOLAR	R$	5,600,000.00	4/15/21	5/15/31	N/A	N/A
3951021SN1	CFF	GREEN FIDC SOLAR GD - FUNDO DE INVESTIMENTO EM DIREITOS CREDITORIOS SOCIOAMBIENTAL - ENERGIA SOLAR	R$	49,638,000.00	3/31/21	4/30/30	N/A	N/A
3951021SN2	CFF	GREEN FIDC SOLAR GD - FUNDO DE INVESTIMENTO EM DIREITOS CREDITORIOS SOCIOAMBIENTAL - ENERGIA SOLAR	R$	38,904,000.00	4/15/21	5/15/31	N/A	N/A
			R$	10,505,955,651.00				

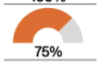
ANNEX D – Natura's 2050 Vision Overview

Topic	2020 Ambition	Achieved	Material topics	SDG	SDG targets	Index	Status
Brands	Disclosure of product socioenvironmental footprint	The environmental impact is communicated via metrics, formula attributes, packaging and EP&L in the Annual Report and in communications with investors. For consumers, part of the impact is reported on the website and on the Natura APP at the moment of purchase. The full disclosure of the environmental and social impact is still being enhanced to ensure more effective communication.	Transparency and product origin	12	12.2, 12.8	50%	
Formulations	30% of inputs from Pan-Amazon, in purchase value (Natura Brazil)	16.5% | Impacts of changes in the original ingredient innovation investment plan and exchange effects. In absolute values, we have increased the use of inputs by a factor of 7x since the beginning of the Amazônia Programme (2011	Valuation of social biodiversity	3 12 15	3.9, 12.7, 15.1, 15.2	55%	
Packaging	10% post-consumer recycled material in packaging (Natura Brazil)	10% | Significant advances in recycled glass and plastic. Result maintained in spite of effects of pandemic on recycling chain.	Waste			100%	
	74% recyclable material in packaging mass (Natura Brazil)	44% | Technological challenges still exist, such as recycling of coloured materials (glass and plastic) and pouch packs in recyclable material (refills).	Climate Change	3 11 12	3.9, 11.6, 12.2, 12.4, 12.5	60%	
	40% of units billed in eco-efficient packs[1] (Natura Brazil)	18% | There was a 19% increase in global sales of refills; evolution of portfolio aligned with principles of ecodesign and circularity; prioritisation of recycled and renewable materials, green plastic and other refill options.	Waste			43%	
Social biodiversity	10,000 families in the Pan-Amazon production chains	7,039 families | Significant growth in 2020. Advance linked with expansion in use of new ingredients.	Climate change	1 10 15	1.1, 10.1, 10.2 10.3, 15.1, 15.2	70%	
	R$ 1 billion in business volume in Pan-Amazon.	R$ 2.14 b | Target exceeded in 2017. Noteworthy are growth in use of inputs and local development efforts oriented to our territorial strategy.	Waste	1 6 10 12 15	11.6.6, 6.b, 10.1, 10.2, 10.3, 12.2, 15.1, 15.2	100%	
Climate change	Reduce relative GHG emissions by 33% (Scopes 1, 2 and 3)	-11% | Influenced by product mix and performance of some lines, lower increase in maritime freight and innovations that have not yet become technically feasible (recycled materials, fleet electrification, renewable energy in loco).	Climate Change	13 17	13.1, 13.3, 17.3, 17.14	33%	
	Maintain 100% offsetting of GHG emissions	100% | In addition to offsetting, Natura launched its Climate Commitment platform to mobilize other companies to do likewise.	Valuation of social biodiversity	6 13 15 17	6.6, 13.1, 13.3, 13.b, 15.1, 17.3, 17.14	100%	

1. Due to the pandemic we are still finalising some carbon credit purchase contracts. Up to the publication of the report, Natura had acquired 97.2% of the credits and is committed to acquiring the rest to offset 100% of its emissions by December 2021.

fully achieved · partially achieved (delivered over 75% of ambition) · not achieved (delivered under 75%)

Topic	2020 Ambition	Achieved	Material topics	SDG	SDG targets	Index	Status
Energy	Strategy to diversify sources of renewable energy (Natura Brazil)	Integrated policy that includes energy efficiency and renewable energies. Negotiation for acquisition of I-REC certificates to ensure traceability of renewable energies used by Natura.	Climate change	13	13.1	100%	
Waste	Collect and recycle 50% of the waste generated by products (Natura Brazil)	50% | Results maintained in spite of effects of pandemic on operations of recycling cooperatives. Complementary purchase of reverse logistics credits to reach target when necessary.	Waste	11 12 14 15	11.6, 12.2, 12.4, 12.5, 14.1, 15.5	100%	
Water	Strategy to reduce and neutralise impact based on water footprint throughout chain (Natura Brazil)	We conducted measures related to consumption in the operations, and development of a water footprint methodology, which is the basis for quantifying water in the EP&L.	Water	6	6.3, 6.4, 6.6	33%	
Supply chain	Traceability of 100% of the direct inputs (last link) and traceability programme for other links in value chain	UEBT certification ensures traceability of vegetable and critical raw material chain (first link). It is still necessary to evolve a complete programme for other links.	Transparency and product origin	8 12	8.3, 12.8	75%	
Consumers	Define priority topics and mobilise Natura brand consumer	The priority topic strategy, organised in three causes "Living Amazon Forest", "Every Person Matters" and "More Beauty, Less Waste", is a new way of mobilising and engaging society initiated in 2020.	-	12	12.8	100%	
Natura consultants	Significantly increase the average income of the consultants (Natura Brazil)	Evolution of methodology to calculate consultant income; evaluation of living income for consultants; segmentation of channel which helped in evaluation and definition of actions and plans to leverage consultant income.	Generation of work and income	1 5 8 10	1.1, 1.2, 1.4, 5.5, 8.3, 10.1 10.2, 10.3	50%	
	Offer education measures	Educational programmes for consultants oriented to Consultant-HDI.	Education for the development of employees and consultants	4 5 8	4.3, 5.5, 8.3	100%	
	Create a human development indicator for the consultants	The HDI was the strategy adopted and is implanted in Brazil and in Hispanic America.	-	5 8	5.5, 8.3	100%	
	Expand the collaboration network for socioenvironmental entrepreneurial actions	R$ 2.5 million invested in seven editions of the Acolher Social Entrepreneurship Programme.	Education for the development of employees and consultants	4 5 8	4.3, 5.5, 8.3	100%	
Employees	50% of women occupying leadership positions (director level and above)	51% | Result achieved in Natura and Natura &Co Latin America	Diversity and equality	5 10	5.5, 10.2	100%	
	8% of employees with disabilities in work force (Natura Brazil)	7.3% | We opened exclusive vacancies. We were recognized for our employer brand and we developed actions for employees with disabilities and managers	Diversity and equality	8 10	8.3, 10.2, 10.3	91%	
	Strategy to leverage employees' execution potential through engagement in the Natura culture.	The plan to engage employees in the Natura culture was reviewed in 2018 with a new priority to drive mobilisation in alignment with the Natura Causes and commitments.	Education for the development of employees and consultants	4 12 16	4.3, 12.2, 16.6, 16.7	100%	
Communities	Grow human and social development indicators of the communities	Social Progress Index (SPI) validated as measurement method for territory development and implantation plan approved for other strategic territories.	-	8 10 16	8.3, 10.2, 10.3, 16.6	100%	
	Strategy for Pan-Amazon territories and areas surrounding main operations (Natura Brazil)	Amazon Strategic Territorial Development Plan since 2014. As a result of the review of the 2020 strategy for more territories, the "Nós da Floresta" alliance was launched as an operating model. Plan re-established for the area surrounding Benevides (PA), prioritised, implanted and reviewed.	Valuation of social biodiversity	8 10 15	8.3, 10.2, 10.3, 15.1	100%	
Suppliers	Expand integration of socioenvironmental parameters in selection and management of suppliers	We achieved UEBT certification for the critical and vegetable raw material chain (first link in the value chain), but did not implement the complete traceability programme for the other links.	Transparency and product origin	8 12 16	8.3, 12.8, 16.6	50%	
Management model	Implement the valuation of socioenvironmental externalities in the value chain	Relative EP&L defined as target in sustainability PEN. Disclosure of IP&L results in 2021, including social dimension (SP&L).	Transparency and product origin	6 12 13 15	6.6, 12.8, 13.1, 15.1	100%	

Topic	2020 Ambition	Achieved	Material topics	SDG	SDG targets	Index	Status
Government and society	Promote discussion of the material topics	Material topics prioritised in advocacy agenda with government, civil society organisations and strategic plans for our Causes.	-	16 17	16.6, 17.14		
Stakeholder engagement	Governance model with external engagement to evolve sustainability management and strategy	Employee engagement and mobilisation plan for our Causes is also focused on the end consumer.	-	12 16	12.1, 16.6		
Ethics and transparency	Total transparency in product information and evolution of 2050 Vision	Positive impact disclosures in online purchases and external communications. Vision index also launched in 2018 and disclosed in Annual Reports.	Transparency and product origin	12	12.8		
Governance for Sustainability	Implant Advisory Council with specialists to assess progress and evolve strategy	New proposal developed based on Causes strategy: external technical committees involved in construction of theory of change for each Cause (methodology).	-	12 16	12.1, 16.6