Sustainability and finance: a sustainable company has better financial performance than a non-sustainable one?

Sustentabilidade e finanças: uma empresa sustentável apresenta melhor desempenho financeiro do que uma empresa não sustentável?

Sustentabilidad y finanzas: una empresa sustentable tiene mejor desempeño financiero que una no sustentable?

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Abstract
This article aims to analyze the profitability of sustainable and unsustainable companies by comparing the performance of ISE and Ibovespa, which respectively, will serve as indicators of the average performance of the mentioned segments, between 2009 and 2018. The methodological design is based on a descriptive study of the average return of the stock portfolios of the ISE and Ibovespa, from 2009 to 2018. Analysis procedures considered measures of mean return, standard deviation, and Sharpe Ratio. Based on the results of the sample, the main finding is that investing in companies based on the TBL assumptions is slightly more advantageous than investing in neoclassical companies, as they return the investor higher returns for the same amount of risk. In addition, we concluded that from the beginning of 2011 the performance of ISE surpassed that of Ibovespa, and in the following years, its performance was considerably higher than the last one. The first implication or limitation is related to the possibility to isolate and analyze companies that participate in both indexes, to better evaluate the performance of each follow-up. Another implication is that no scientific reasons were found to explain why ISE performance was found as considerably higher than Ibovespa, which can open another path in order to analyze this phenomenon according to risk perception of non-sustainable companies. This paper offers specific contributions in terms of performance when comparing ISE and Ibovespa. Furthermore, our findings open the discussion of firm performance when sustainable or non-sustainable, which allows bringing theoretical aspects related to risk acceptance.
Keywords: Sustainable development; Sustainability; Finance.

Resumo
Este artigo tem como objetivo analisar a rentabilidade de empresas sustentáveis e insustentáveis por meio da comparação do desempenho do ISE e do Ibovespa, que respectivamente, servirão como indicadores do desempenho médio dos segmentos citados, entre 2009 e 2018. O desenho metodológico é baseado em um modelo descritivo estudo do retorno médio das carteiras de ações do ISE e Ibovespa, no período de 2009 a 2018. Os procedimentos de análise consideraram medidas de retorno médio, desvio padrão e Índice de Sharpe. Com base nos resultados da amostra, o principal achado é que investir em empresas com base nas premissas do TBL é um pouco mais vantajoso do que investir em empresas neoclássicas, pois elas retornam ao investidor maiores retornos pelo mesmo montante de risco. Além disso, concluímos que desde o início de 2011 o desempenho do ISE superou o do Ibovespa, e nos anos seguintes seu desempenho foi consideravelmente superior ao anterior. A primeira implicação ou limitação está relacionada à possibilidade de isolar e analisar empresas que participam de ambos os índices, para melhor avaliar o desempenho de

cada acompanhamento. Outra implicação é que não foram encontradas razões científicas para explicar porque o desempenho do ISE foi considerado consideravelmente superior ao do Ibovespa, o que pode abrir outro caminho para analisar esse fenômeno de acordo com a percepção de risco de empresas não sustentáveis. Este artigo oferece contribuições específicas em termos de desempenho na comparação do ISE e do Ibovespa. Além disso, nossos achados abrem a discussão sobre o desempenho da firma quando sustentável ou não sustentável, o que permite trazer aspectos teóricos relacionados à aceitação do risco.

Palavras-chave: Desenvolvimento sustentável; Sustentabilidade; Finanças.

Resumen

Este artículo tiene como objetivo analizar la rentabilidad de empresas sostenibles e insostenibles comparando el desempeño de ISE e Ibovespa, que respectivamente, servirán como indicadores del desempeño promedio de los segmentos mencionados, entre 2009 y 2018. El diseño metodológico se basa en una descripción descriptiva estudio de la rentabilidad media de las carteras de valores del ISE e Ibovespa, de 2009 a 2018. Los procedimientos de análisis consideraron medidas de rentabilidad media, desviación estándar y Ratio de Sharpe. Con base en los resultados de la muestra, el hallazgo principal es que invertir en empresas basadas en los supuestos de TBL es ligeramente más ventajoso que invertir en empresas neoclásicas, ya que le devuelven al inversor rendimientos más altos por la misma cantidad de riesgo. Además, concluimos que desde principios de 2011 el desempeño de ISE superó al de Ibovespa, y en los años siguientes, su desempeño fue considerablemente superior al anterior. La primera implicación o limitación está relacionada con la posibilidad de aislar y analizar empresas que participan en ambos índices, para evaluar mejor el desempeño de cada seguimiento. Otra implicación es que no se encontraron razones científicas que expliquen por qué el desempeño de ISE fue considerablemente superior al de Ibovespa, lo que puede abrir otro camino para analizar este fenómeno de acuerdo con la percepción de riesgo de las empresas no sostenibles. Este trabajo ofrece contribuciones específicas en términos de desempeño al comparar ISE e Ibovespa. Además, nuestros hallazgos abren la discusión sobre el desempeño de la empresa cuando es sustentable o no sustentable, lo que permite traer aspectos teóricos relacionados con la aceptación del riesgo.

Palabras clave: Desenvolvimiento sustentable; Sustentabilidad; Finanzas.

1. Introduction

Until the mid-twentieth century, societies had as their main driver the accumulation of capital from the profit of industrialized production (Dias and Cario, 2014). The ultimate goal of development policies at this time was, therefore, to improve people's living standards so that they could have increased access to consumer goods (Nordhaus & Samuelson, 1993).

However, from the 1980s onwards, the old model of financial capitalism began to be sharply questioned (Dias & Cario, 2014). Society has organized itself to demand that development policies cease to be purely materialistic and focus on meeting the "basic needs such as education, nutrition, health, hygiene and employment for the poor, on the grounds that the benefits of development - as thought so far - did not necessarily reach the neediest" (Charidade, 2011). This new development paradigm had the name "Development Sustainable" first coined in the Commission report Brundtland.

This report has highlighted the concern of meeting current needs without compromising the productive and survival capacity of future generations (1987 cited Brüseke, 1995). The critical components of so-called sustainable development are economic growth, environmental protection, and social equality.

These fundamentals eventually reached the private sphere and changed the paradigm by which people value a company. If once a successful company was the one that made the most profit, now it is the question of sustainability.

Currently, the issue is seen under three different approaches, social, economic, and environmental is called the Triple Bottom Line (Machado & Corrar cited Barbosa, 2007). According to exposed Machado and Corrar, the idea central to TBL is that the success and health of a company should not be evaluated only by traditional financial measures but also for its ethics, social responsibility, and environmental performance (MacDonald, 2003).

The first corporate performance measurement measure for sustainability practices came in 1999 in the United States with the publication of the Dow Jones Sustainability Index (DJSI). Following the same rationale, the Brazilian stock exchange, in 2005, the Corporate Sustainability Index (ISE). Regarding this index, the present article examines, through a comparative analysis with the Bovespa Index (Ibovespa), how the performance of sustainable companies is compared to that of companies

not guided by these principles.

This article aims to analyze the profitability of sustainable and unsustainable companies by comparing the performance of ISE and Ibovespa, which respectively, will serve as indicators of the average performance of the mentioned segments, between 2009 and 2018.

You can find ample literature relating to socially responsible investments and financial performance. Several authors have sought to compare the performance of this type of investment with other investments considered conventional, i.e., those that do not use social, environmental, and corporate governance indicators (Rezende, 2007).

Their research, however, has shown conflicting results, as the authors argue that these conflicts can be attributed to theoretical and methodological reasons such as lack of theoretical foundation, a systematic and adequate measure for corporate social performance; methodological rigor, small size and limitations of sample composition and incompatibility between social and financial variables (Barbosa, 2007). In 2007, Rezende et al. sought to ascertain whether ISE's return was similar to that of the other Bovespa stock indices. However, the study conducted presented questionable results, since the sample used was too small for the chosen statistical technique, i.e., Student's t-test. The unreliability of the conclusions of Rezende et al. motivated this study, which has a similar objective; However, based on daily turnover indices for a more extended period, namely between 2009, 2018, and is used Sharp Ratio based on the assumption of statistical tests.

2. Bovespa Index

The Bovespa index (Ibovespa) is the most critical indicator of the average performance of the Brazilian stock market quotations. With a composition that seeks to approximate the original configuration of spot trading on the Bovespa, the index aims to portray the behavior of the primary securities traded at BM&F.

Launched by the BM&F in 1968, the Ibovespa can, for its purpose, be compared to the Dow Jones Industrial Average (DJIA) created by Charles H. Dow in 1896. The DJIA is the first average of the behavior of the reported stock market. Initially with 12 stocks, and now 30 shares, it seeks to provide a clear and direct view of the stock market, and by extension of the US economy (Dow Jones, 2013).

In terms of liquidity, the shares that make up Ibovespa's hypothetical portfolio account for about 80% of BM&F's number of trades and spot market financial volume. As for capitalization, companies whose shares are listed on the index account for approximately 70% of the stock market capitalization.

The Ibovespa is calculated in real-time, considering the latest trades in the spot market with the stocks that are part of its portfolio. Participation of each share in the portfolio is directly related to its representativeness in the spot market - in terms of many trades and financial volume - adjusted to the sample size (BM&F BOVESPA, 2019 a). The representativeness of each share is called the "Negotiability Index", and is calculated by the following formula:

$$IN = \sqrt{\frac{ni}{N} x \frac{vi}{V}}$$

Where:
- IN = negotiability index
- ni = number of trades with stock "i" in the spot market (standard lot)
- N = total number of trades on the BOVESPA spot market (standard lot)
- vi = financial value generated by business with the action "i" in the cash market (around lot - default)
- V = total financial volume of BOVESPA spot market (standard lot)

The sum of the shares, weighted by their trade index, results in the Bovespa Index:

$$\sum_{i=1}^{n} Pi,t * Qi,t$$

Where:

• Ibovespa t = Bovespa Index at time t

• N = total number of shares of the theoretical portfolio

• P = last price of share "i" at time t

• Q = theoretical amount of the share "i" in the portfolio at time t

For the Index to better mirror the Brazilian stock market, its portfolio is reevaluated at the end of each quarter. In evaluations, we identify changes in the relative share of each share in the index, as well as its permanence or exclusion, and the inclusion of new securities (BM&F BOVESPA, 2019 a).

Besides, the Ibovespa is adjusted whenever the issuing companies in its portfolio distribute dividends. The adjustment is made considering that the investor sold the shares at the last closing price before the commencement of ex-dividend trading and used the proceeds to purchase the same shares without the distributed dividend (BM&F BOVESPA, 2019 a). The below, formula used for this purpose:

$$Qn = \frac{Q0 x Pc}{Pex}$$

Where:

• Qn = new quantity

• Q0 = old quantity

• Pc = last previous trading price at the start of trading "ex-earning"

• Pex = ex-theoretical price, calculated based on Pc

Table 1: ISE 2018 Wallet.

Companies					
AES Tiete	CCR	CPFL	Engie	Klabin	Natura
B2W	Celesc	Duratex	Fibria	Light	Santander
Banco do Brasil	Cemig	Ecorodovias	Fleury	Lojas Americanas	Telefônica
Bradesco	Cielo	EDP	Itaú Unibanco	Lojas Renner	Tim
Braskem	Copel	Eletropaulo	Itaúsa	MRV	Weg

Source: B3.

3. Corporate Sustainability Index

During Financial Capitalism, investors based their investments on the financial performance of the companies in which they proposed to invest. According to Savitz (2006), the market view that is directed only to the shareholder and to action led the corporate environment to disregard crucial political, environmental, and cultural trends, which impacted on the organizational performance itself.

However, from the 1980s onwards, the realization of the real environmental impacts of productivity has increased, driving business, shareholders, and investors to turn to a new business model. Companies had to recreate their production strategies by focusing on both the economy and society and the environment.

The financial market, of course, has absorbed this trend, and stock markets around the world have begun to organize to create indices that capture more information than purely economic ones. In 1999, the United States created the first index to measure the financial performance of leading sustainability companies, the Dow Jones Sustainability Index (DJSI). The index takes into account the economic, social, and environmental performance of its member companies (Dow Jones, 2019).

In Brazil, ABN AMRO created in 2001 the Ethos Fund, the first investment fund composed only of companies recognized for developing good social, environmental, and corporate responsibility practices. Also seeking to cater to socially responsible investors, in 2005, Brazilian Stock Exchange launched the Corporate Sustainability Index (ISE) - the fourth of its kind in the world.

ISE can be understood as a benchmarking tool for B3 listed companies in terms of corporate sustainability, economic efficiency, environmental balance, social justice, and corporate governance, with the ultimate goal of identifying companies that stand out for their performance. Commitment to social development and strategic alignment with sustainability, differentiating companies for investors with other concerns (other than short-term financial returns), creating an investment environment compatible with society's demands, encouraging the creation of investment funds responsible, and becoming a standard for comparing their performances.

The purpose of the Brazilian Stock Exchange's Corporate Sustainability Index (ISE) is to provide an adequate means of investment compatible with economic, social, and environmental demands, and to encourage corporate ethical responsibility. Teixeira, Nossa, and Funchal (2011) affirm that the Index has the goal of being a benchmark of firms that stands out in the promotion of sustainable attitudes, committing Corporate Social Responsibility (CSR) and Corporate Sustainability.

To be part of the ISE portfolio, companies must cumulatively be among B3's 200 most traded shares, have their shares traded in at least 50% of trading sessions in the 12 months prior to the start of the revaluation process, and meet the sustainability criteria endorsed by the ISE Council (ISE BMFV, 2019 a).

The companies are evaluated by the Getulio Vargas Foundation's Center for Sustainability Studies (Gvces). Companies are evaluated using a questionnaire developed by Gvces itself, based on the Triple Bottom Line (TBL) concept. Completion of the survey is voluntary, and responses are analyzed using "cluster analysis". Indicators of company commitment, program

indicators, management targets and monitoring, the legal performance of the organization, and finally, the economic performance of companies are evaluated (ISE BMFV, 2019 a).

The 40 best-performing companies in the questionnaire are now part of ISE's hypothetical portfolio for one year. The shares of these companies are weighted according to the formula below:

$$ISE\,(t) = \;ISE\,(t-1)\;x\;\frac{\sum_{i=1}^{n} Qi_{t-1}\;x\,Pi_{t}}{\sum_{i=1}^{n} Qi_{t-1}\;x\,Pi_{t-1}}$$

Where:

• ISE (t) = index value on day t

• ISE (t-1): Index value on day t-1

• n = number of shares in the theoretical index portfolio

• Qi_(t-1): the theoretical amount of stock i available for trading on day t-1

• Pi_t: share price i at the close of day t

• Pi_(t-1): i share price at the close of day t-1

Table 2 shows the evolution of the theoretical portfolio of the index:

Table 2: ISE companies and shares.

Number of Companies and Shares in ISE									
Ticket	2009	2010	2011	2012	2019	2014	2015	2016	2017	2018
Companies	30	34	38	38	37	40	40	35	34	30
Shares	38	43	47	51	51	51	51	40	38	33

Source: B3.

4. Corporate Management Model

The shareholder is the physical or legal individual who shares or holds corporate shares or shares. Thus, the theory of shareholders seeks to understand the organizational and inter-organizational movement from the maximization of shareholder wealth, where the financial manager is compelled to act in pursuit of the owners' strict interest (Brealey & Myers, 2000). In another way, stakeholder theory seeks to analyze organizations in the light of everyone involved with it.

The term stakeholder was first used in the field of business administration in 1963 in an internal memo from the Stanford Research Institute (SRI). This term originally referred to as all groups without which the company would cease to exist (Freeman & McVea, 2000, quoted by Borba, Silveira, & Yoshinaga, 2005). The groups would consist of employees, customers, suppliers, shareholders, creditors, and society. In 1984, Freeman refined this concept and defined the term as any group or individual that affects or is affected by the achievement of company goals (Borba, et al., 2005).

Management based on stakeholder theory encompasses the allocation of organizational resources as well as the impacts of such assignment on the various groups linked to an organization. These groups may be from primary stakeholders, such as shareholders and creditors with defined rights within the organization or from secondary stakeholders such as suppliers,

consumers, the local community, and other entities with formally not established rights (Wright et al., 2000).

For Donaldson and Preston (1995), all persons or groups with legitimate interests in a given organization receive and offer their benefits through interrelationship; in the first instance, there is no overlap of interests between groups. This interaction set can be identified from Figure 1, which shows the interdependence between the actors:

Figure 1: Stakeholder Model.
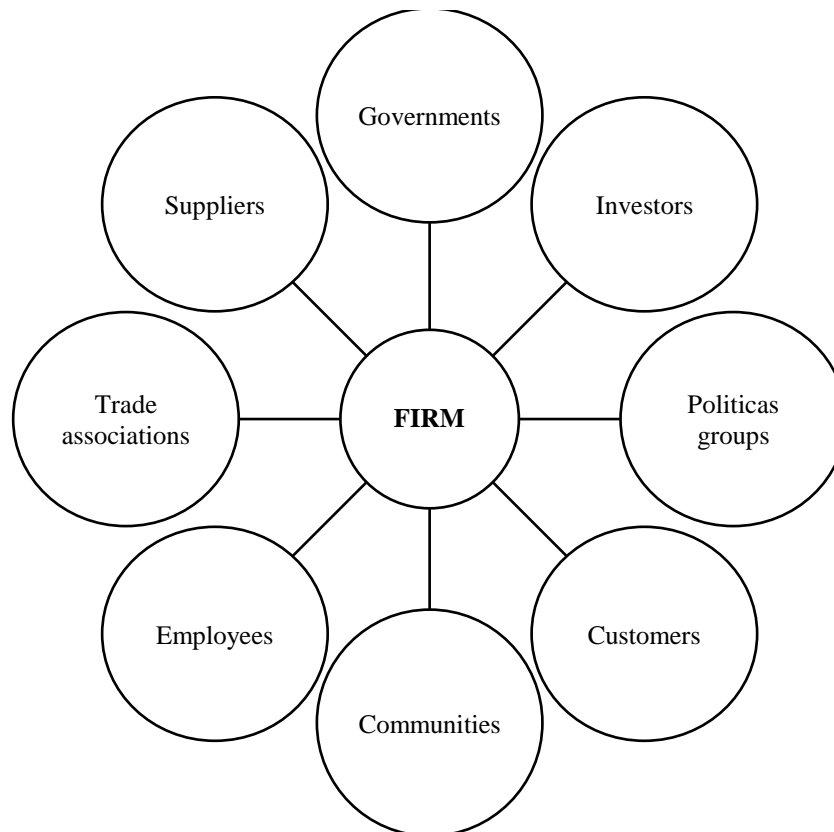
Source: Donaldson and Preston (1995).

The stakeholder theory has a managerial character because it builds its analytical apparatus by observing the firm's relations with the parties involved, without broadening its analysis to the institutional and political field. From this character, the descriptive, instrumental and normative aspects emerge, as subsequent development.

The descriptive precision of this theory lies in its ability to tangent and deepen organizational characteristics related to the cooperation and competing interests of the parties involved. This aspect makes it possible to describe the nature of the firm, managerial thinking of managers, and the overall interest of the corporation (Donaldson & Preston, 1995).

Complementarily, the instrumental aspect of this theory allows the evaluation of the connection between stakeholders, the managerial action, and the overall goals of the organization, relying on statistical methodologies. The instrumental power of stakeholder theory stems from its ability to identify the connections, or lack thereof, between stakeholder management and the achievement of traditional company objectives such as profit and growth (Rodrigues, 2005).

Finally, the normative aspect makes mention of the fact that the real and legitimate interests of stakeholders in the value-generating business for her.

These three aspects are interconnected and interdependent, and allow further analysis of the interaction between the firm and its stakeholders. The following discusses how these two currents are reflected in the management and performance of an organization.

5. Methodology

This article presents a descriptive study of the average return of the stock portfolios of the ISE and Ibovespa, within the range of 2009 to 2018. As an analysis procedure, the measures of mean return, standard deviation, and Sharpe Ratio were raised.

One of the most critical performance indicators for most investors is the expected return on their investment over a specific period. However, there is enormous difficulty in obtaining these expected values. Thus, an average estimate for this return v in the evaluation of your average historical return, so that implicitly is assumed that the past will be repeated in some way (Varga, 2011).

In this article, we chose to use the logarithmic expression to calculate the average return of ISE and Ibovespa, according to the formula below:

$$r = \ln \left(\frac{Pt}{Pt - 1} \right)$$

Where:

• r: return

• Pt: Portfolio quote at date t

• Pt-1: Portfolio quote at date t-1

According to Hull (1996), share prices follow a random movement; This means that proportional changes in the share price over a short period are usually distributed. However, so that the share price at any time in the future, has a distribution log standard.

Another significant investment driver is the risk that a particular asset represents to the investor. This risk can be understood as the probability of the asset generating a lower than expected return, or as the deviation from the expected value in the future. The following expression can calculate the standard deviation of the historical performance of an asset:

$$\delta k = \sqrt{\sum_{j-1}^{n} \frac{(Kj - K\ medium)2}{n - 1}}$$

Where:

• Kj is the return of the asset on observation j

• Average K is the average return on the asset

• N is the number of observations

The Sharpe Ratio is an indicator that allows you to assess the relationship between the return and risk of an asset. Also known as the variability premium, the Sharpe Ratio measures the additional performance that each risk unit brings to an investment (Nogueira & Gomes, 2012), providing an opportunity for the investor to choose the highest return asset at the same level of risk. The risk or even the lowest risk asset is given the same return level.

In this article, the Sharp Ratio and was used as a comparison tool between ISE and Ibovespa performance. Below is the formula used:

$$Sharpe\ Ratio = \frac{Rp - Rf}{\sigma p}$$

Where:

• Rp is the expected return on an investment

• Rf is the interest rate of a risk-free asset

• σp is the standard deviation (risk) of a portfolio

• Rp - Rf represents the investment risk premium

For the calculation of the Sharpe Ratio, the Selic rate was used as a risk-free asset.

6. Sustainability and Finance

Discussions about economics and collective welfare have been present in various fields of society since ancient Greece. However, in the last century, this debate has sharpened considerably due to what Egri and Pinfield (2012) have called concern for the quality of the natural environment. Today, the topic is in many forms and has ranged from the establishment of global environmental forums to formal assessments of large-scale ecological archives (Rice, 1993 cited Egri & Pinfield, 2012).

If, until organizations saw the 1970s environmental considerations as detrimental to their performance, today, they are part of the decision-making process, giving rise to the so-called "Corporate Environmentalism". This phenomenon emerged as the concepts of "Environmental Restoration" and "Sustainable Development", which mark the process of institutionalization of environmental causes.

Sustainable Development can be understood as a concern to meet the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987).

The Environmental Restoration, in turn, is the result of the attempt d in industrialized society to incorporate environment to organizational processes, and combine different approaches for sustainable development. This current encompasses social, health, and economic issues, as well as the traditional approach to the environment (Sitarz, 1993).

Among the existing constructs in the renewed environmentalism, stand out the green economy, green industrialism, and the regulation of environmental risks by the market and government agencies. As for the first, it can be said that it is an attempt to relate the economic process with the physical conditions of the environment. Industrialism, on the other hand, seeks to make companies incorporate sustainable practices to minimize the impacts of large-scale production, giving greater importance to ecotechnologies. Finally, regulation maintains the neoclassical view that the market itself regulates environmental risks but adds to it natural capital as a factor for decision making (Egri & Pinfield, 2012).

Figure 2: Mapping visions of sustainable development.
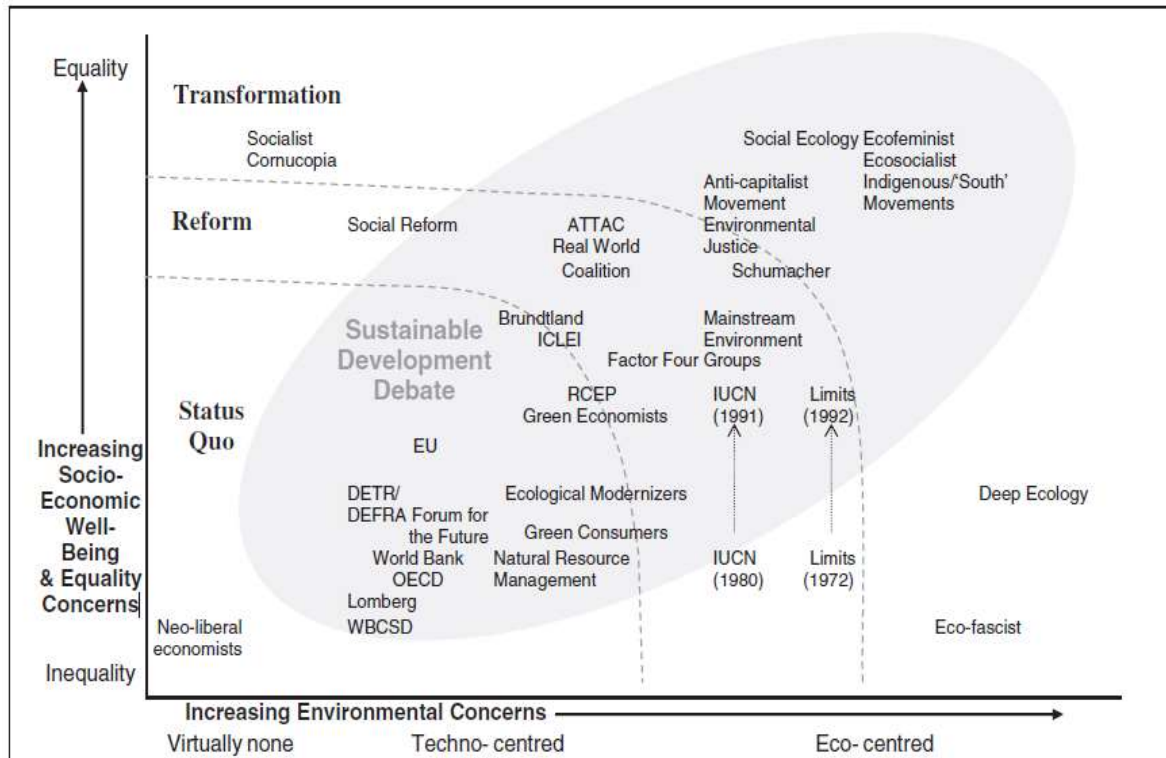
Source: Hopwood et al (2005).

According to renewed environmentalism, the neoclassical economic perspective, associated with natural capital used for decision making, enables the achievement of an efficient economy. From this logic comes what has been termed "sustainable finance" (Borba, 2005). How climate change and scarcity of natural resources impact public policies of governments, such as economic relations between countries and the global corporate system, thus changing as industrial relations in the private area. Using this knowledge, companies have sought competitive advantages through natural resource economics and environmental maintenance (Demajorovic, 2003). In a complementary manner, society also aims to allocate its resources to companies that balance socio-environmental responsibility and financial performance.

To capture the investments of this portion of society, some organizations adopted the corporate management model of their finances, through which they measured stakeholder interest by weighing profitability and liquidity to maximize the market value of shareholders' capital and optimize the benefits of their partners. Stakeholders (Ross, 2000). Regarding the adoption of corporate sustainability policies, some authors claim to undermine the financial performance of organizations. For the followers of this current, the remuneration of the invested capital tends to be inversely proportional to the investment in fronts of social and environmental responsibility. This fact would lead shareholders to withdraw their finance from the company, leading to a situation of decapitalization and reduced liquidity that, in turn, would bring financial loss to the other stakeholders of the organization.

The opposite current, however, argues that financial performance has a positive relationship with social and environmental investments since the adoption of sustainable practices influences the expectations that stakeholders have regarding the organization. These competing strands provide input for debate. From them, several study fronts emerged that seek to explain the differences in profitability between ISE and Ibovespa. The following are the data from this study, who used the Sharpe Ratio to buy both indexes.

7. Data Presentation and Analysis

For this paper, it was assumed that ISE's performance is equivalent to the average performance of companies that adopt sustainable finance practices. As stated above, these companies seek to balance financial results with social and environmental responsibility to maximize the benefit of their stakeholders. In turn, Ibovespa's performance was considered to be equivalent to that of traditional neoclassical companies, which believe that the return on invested capital tends to be inversely proportional to investment in fronts of social and environmental responsibility.

The first indicator performance analyzed was the profitability, i.e., how much each index has appreciated or depreciated between 2005 and 2012. From this point of view alone, investing in sustainable companies is slightly more beneficial than investing in profit-oriented companies. As the table below shows, the maximum appreciation of the ISE was higher than the full recognition of the Ibovespa; and the maximum devaluation of the former was lower than the maximum depreciation of the latter:

Table 3: Comparative analysis of index appreciation.

Ibovespa		ISE	
Maximum	13.68%	Maximum	14.49%
Minimum	-12.10%	Minimum	-10.36%

Source: Authors.

To alone compare risk and return, the results of the indices are slightly divergent. The combination of these two variables, however, gives companies that adopt the TBL assumptions a more significant advantage. From the analysis of the asset variability premium, it is clear that the ISE has a return increase of 5.68% for each 1% increase in risk, while Ibovespa, under the same conditions, t increased 4.53% return.

Table 4: Return versus risk analysis.

Analysis	Selic	Ibovespa	ISE
Return	-0.05%	0.03%	0.05%
Risk	0.84%	1.93%	1.80%
Sharp Ratio	-	4.53%	5.68%

Source: Authors.

Figure 3: ISE x Ibovespa.

Source: BM&F Bovespa.

Table 5: Average growth rate Ibovespa.

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Ibovespa
2009											68.588,41
2010	1										69.304,81
2011	-9	-18,1									56.754,08
2012	-3,9	-6,2	7,4								60.952,08
2013	-6,9	-9,4	-4,7	-15,5							51.507,16
2014	-6,1	-7,8	-4,1	-9,4	-2,9						50.007,41
2015	-7,4	-9	-6,5	-10,7	-8,3	-13,3					43.349,96
2016	-1,8	-2,3	1,2	-0,3	5,4	9,7	38,9				60.227,28
2017	1,4	1,4	5,1	4,6	10,4	15,2	32,8	26,9			76.402,08
2018	2,8	3	6,5	6,3	11,3	15,1	26,6	20,8	15		87.887,27
2019	3,5	3,7	6,8	6,8	11	14	22,1	17	12,3	9,6	96.353,33

Source: B3.

Table 6: Average growth rate ISE.

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	ISE
2009											1.972,04
2010	5,8										2.087,30
2011	1,2	-3,3									2.018,94
2012	7,3	8	20,5								2.432,53
2013	5,9	5,9	10,8	1,9							2.479,61
2014	4,3	3,9	6,4	0	-1,9						2.431,59
2015	1,2	0,3	1,2	-4,5	-7,6	-12,9					2.118,01
2016	2,9	2,4	3,6	-0,2	-0,9	-0,4	13,8				2.410,05
2017	4,6	4,4	5,8	3,1	3,4	5,2	15,6	17,4			2.829,50
2018	5,2	5,1	6,4	4,2	4,6	6,3	13,6	13,6	9,9		3.108,65
2019	4,8	4,6	5,7	3,7	4	5,2	10,3	0,8	5,3	1	3.139,54

Source: B3.

During the research, it was noticed new data regarding the performance of the studied indices. As the tables and graphs below show, between 2005 and early 2011, ISE and Ibovespa behaved very similarly, which was slightly higher than most of the time. From February 2011, however, ISE surpassed the Ibovespa, and, at the beginning of the following year, its performance was considerably superior to that of Ibovespa.

No mention could be found in the literature. As a possible explanation to him, however, the author highlights the widespread relationship between sustainability and the cost of capital. Investors see unsustainable companies as riskier. This perception leads to an increase in the price of the equity. On the other hand, banks are increasingly making credit conditional on socio-environmental analysis, especially after the launch of the Equator Principles. This fact increases the cost of capital of third parties. The factors exposed, combined, expose unsustainable companies to higher interest rates, and increase the weighted average cost of capital, lowering their economic value and worsening their economic and financial performance.

8. Conclusion

The present article seeks to expose how the concept of sustainable development has changed over the years to meet society's aspirations, as well as to fit into its socio-economic and cultural context. It also sought to show how these principles crossed the barriers of the private and became part of the corporate environment. This study compared the performance of companies that adopt the sustainable finance paradigm with the performance of those who chose not to take this direction, to assess whether or not sustainability contributions bring financial returns. Therefore, the Corporate Sustainability Index (ISE) and the Bovespa Index (Ibovespa) were adopted as representatives of each of the mentioned segments.

Based on the results of the sample, we can conclude that investing in companies based on the TBL assumptions is slightly more advantageous than investing in neoclassical companies, as they return the investor higher returns for the same amount of risk. During the preparation of the study, it can also be observed that from the beginning of 2011, the performance of ISE surpassed that of Ibovespa, and in the following years, its performance was considerably higher than the last one. Although no scientific explanation could be found for this fact, the authors highlight the possibility that this phenomenon is linked to the risk perception of non-sustainable companies, which has a direct impact on their average cost of capital. For future research, we suggest to isolate companies that concurrently participate in both indexes, to better evaluate the performance of each follow-up.

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