UNIVERSIDAD DE EXTREMADURA

TESIS DOCTORAL

ESTRATEGIAS DE INVERSIÓN Y CREACIÓN DE VALOR PARA EL ACCIONISTA EN BM&FBOVESPA

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PROGRAMA DE DOCTORADO EN ECONOMÍA Y EMPRESA

Conformidad de los directores:

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DECLARACIÓN DE LOS DIRECTORES DE LA TESIS DOCTORAL "ESTRATEGIAS DE INVERSIÓN Y CREACIÓN DE VALOR PARA EL ACCIONISTA EN BM&FBOVESPA"

La presente Tesis está formada por el compendio de tres artículos de investigación publicados o aceptados para su publicación en revistas científicas de impacto pertenecientes al Journal Citation Report (JCR) de la Web of Science.

La primera investigación ha sido publicada 2017 en **Revista de Administração de Empresas** 57(4), 317-329 con el título "Revisiting the size effect in the Bovespa" (DOI: 10.1590/S0034-759020170403). Esta revista es la de mayor índice de impacto (0.408) de todas las revistas brasileñas incluidas en el área *Management* de la lista JCR, aunque ocupa la posición 183 de 194 (cuarto cuartil).

Por otro lado, la segunda investigación de esta Tesis Doctoral está aceptada para su publicación y accesible online desde el día 15 de enero de 2018 en la revista **Emerging Markets Finance & Trade** con el título "The Profitability of Moving Average Rules: Smaller is Better in the Brazilian Stock Market" (DOI: 10.1080/1540496X.2017.1422428). A la fecha de cierre de la presente Tesis Doctoral la revista Emerging Markets Finance & Trade ocupa la posición 189 de 347 (tercer cuartil) en el área *Economics* con un índice de impacto de 0.826. Es preciso destacar en este sentido que dicha revista es una de las pocas especializadas en mercados financieros emergentes en todo el mundo.

Por último, la tercera investigación de esta Tesis doctoral está publicada en la revista **Sustainability** en su número 3 de 2018 con el título: "The Value Relevance of Environmental, Social, and Governance Performance: The Brazilian Case" (DOI: 10.3390/su10030574). A la fecha de cierre de la presente Tesis Doctoral la revista Sustainability ocupa la posición 47 de 105 (segundo cuartil) en el área *Environmental Studies* con un índice de impacto de 1.789. Además, es preciso indicar que, a fecha de cierre de la tesis, este artículo ha recibido más de 415 visitas y 333 downloads.

En los tres artículos descritos, el doctorando LUIS MIGUEL VALENTE GONÇALVES se ha encargado de la revisión de la literatura, el tratamiento de los datos, realización de los análisis empíricos y redacción del texto. Trabajos que han sido supervisados en todo momento por los directores de la Tesis.

Por todas las razones aquí expuestas, los directores de la presente Tesis Doctoral consideramos que el trabajo realizado por nuestro doctorando cumple los requisitos requeridos en el Programa de Doctorado.

Badajoz, a 23 de abril de 2018

Fdo.: Dra. Dña. María del Mar Miralles Quirós

Fdo.: Dr. D. José Luis Miralles Quirós

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Estas provavelmente são as palavras mais difíceis de escrever, não porque implique algum tipo de conhecimento, mas porque estão cheias de emoção, amor e um profundo sentimento Português que é a saudade.

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RESUMEN

Esta Tesis Doctoral está formada por el compendio de tres artículos de investigación publicados o aceptados para su publicación en revistas científicas de impacto pertenecientes al Journal Citation Report (JCR) de la Web of Science cuyo objetivo común es analizar distintas oportunidades de inversión que generan valor para el accionista en el mercado bursátil brasileño.

El primer estudio tiene por objeto analizar el conocido efecto tamaño desde un punto de vista novedoso. Esta anomalía ha sido analizada en numerosos mercados de valores utilizando diferentes perspectivas de estudio. Sin embargo, existen pocos estudios que se centren en su aplicación práctica. En este contexto, el objetivo de este estudio es doble. En primer lugar, se examinan las conexiones entre los precios y las volatilidades de las empresas grandes, medianas y pequeñas empleando un modelo VAR-BEKK multivariante. En segundo lugar, se analiza la performance de las carteras óptimas obtenidas a partir de las predicciones de rentabilidad y volatilidad variables en el tiempo derivadas del modelo multivariante. Los resultados globales muestran que las carteras óptimas están compuestas principalmente por empresas de medio y pequeño tamaño. Además, nuestros resultados revelan que con la utilización de esta técnica es posible reducir el riesgo y mejorar la estrategia naive, que normalmente es utilizada por los inversores extranjeros que están interesados en el mercado brasileño. Estos resultados son relevantes no sólo para los académicos sino también para los profesionales porque es importante conocer en profundidad el comportamiento de los mercados bursátiles para desarrollar una correcta estrategia bursátil.

Por otro lado, el segundo estudio analiza la efectividad del uso de ciertas reglas de promedio móvil en el mercado bursátil brasileño. Utilizando diferentes índices MSCI, encontramos que el mejor desempeño lo proporciona el índice MSCI Brazil Small Cap Index, que rastrea el segmento de pequeña capitalización del mercado bursátil brasileño, en oposición al índice MSCI Brazil que mide el desempeño de grandes y medianas empresas y ha sido la referencia principal para el mercado accionario brasileño en evidencia empírica previa. Además, informamos la clara evidencia de la existencia de un efecto tamaño en el mercado bursátil brasileño debido al desempeño superior del índice que rastrea a las empresas más pequeñas que a las que hacen un seguimiento de las empresas más grandes. Estos resultados reafirman la importancia de un conocimiento profundo de los patrones del mercado bursátil para desarrollar estrategias comerciales correctas en cada caso.

Por último, el tercer estudio tiene por objeto analizar la relevancia valorativa para los accionistas del desempeño ambiental, social y de gobierno corporativo de las compañías cotizadas en el mercado bursátil brasileño. Existe una amplia literatura sobre el tema en los mercados desarrollados. Sin embargo, poco se conoce de la influencia de estas prácticas en los precios de los activos cotizados en mercados emergentes. Además, este estudio es especialmente relevante en el caso brasileño debido a sus singulares recursos naturales, humanos y económicos. Los resultados globales indican que los inversores valoran positivamente las prácticas sostenibles y de forma significativa las relacionadas con el medio ambiente y el gobierno corporativo. En cambio, cuando se tienen en cuenta las diferencias entre empresas ambientalmente sensibles y el resto, los resultados reflejan que los inversores valoran las prácticas sostenibles no directamente relacionadas con el sector de actividad. Estos hallazgos son relevantes para los inversores del mercado, pero también para los gestores de las compañías cotizadas, los responsables políticos, así como cualquier cliente de estas empresas o ciudadano interesado por las cuestiones ambientales, sociales y de gobierno corporativo.

ABSTRACT

This doctoral thesis consists of a compendium of three research articles published or accepted for publication in important scientific journals belonging to the Journal Citation Reports (JCR) of the Web of Science, whose common objective is to analyze different investment opportunities in the Brazilian stock market that generate shareholder value.

The first study aims to analyze the known size effect from a new perspective. This anomaly has been analyzed in many stock markets using different theoretical approaches. However, few studies have focused on its practical application. The aim of this study is two-fold. First, we examine the relationship between price and volatility for large, medium and small firms employing a multivariate VAR-BEKK model. Second, we determine the out-of-sample performance of optimal portfolios constructed on the basis of time-varying return and volatility forecasts from this specification approach. Our overall results show that optimal portfolios are primarily composed of medium and small firms. Moreover, our findings reveal that using this technique it is possible to reduce risk and outperform the naïve rule usually employed by foreign investors interested in the Brazilian stock market. These findings are relevant not only for academics but also for practitioners because they provide detailed information on stock market patterns that aid the development of the correct trading strategies.

The second empirical study analyzes the effectiveness in the Brazilian stock market of using certain moving average rules. Using different MSCI indices, we find that the best performance is provided by the MSCI Brazil Small Cap Index, which tracks the small cap segment of the Brazilian stock market, as opposed to the MSCI Brazil Index which measures the performance of large and medium firms and has been the main reference for the Brazilian stock market in previous empirical studies. Additionally, we find clear evidence of the existence of a size effect in the Brazilian stock market due to the superior performance of the index which tracks smaller companies compared to those which track larger companies. These results confirm the importance of in-depth knowledge of stock market patterns in order to develop the proper trading strategies in each case.

Finally, the third study aims to analyze the value relevance for shareholders of the environmental, social and corporate governance performance of companies listed on the Brazilian stock market. There is extensive literature on this subject for developed markets. However, little is known about the influence of these practices on the prices of assets quoted in emerging markets. In addition, this study is especially relevant in the case of Brazil due to its unique natural, human and economic resources. The overall results indicate that investors value sustainable practices related to the environment and corporate governance positively and significantly. In addition, when differences between environmentally sensitive companies and the rest are taken into account, the results show that the investor value of sustainable practices is not directly related to the sector of activity. These findings are important for investors, but also for the managers of listed companies, policy makers, as well as any customers of these companies or members of the public interested in environmental, social and corporate governance issues.

INTRODUCTION

The Brazilian economy is currently the largest in Latin America (in terms of Gross Domestic Product), the second in all of America and one of the main economies worldwide, being a prominent member of the famous group of emerging countries known as BRICS (Brazil, Russia, India, China and South Africa). This has been a consequence of the structural reforms initiated by the Brazilian government at the beginning of the 21st century that led to the rapid industrialization of the country and economic growth rates envied across the world (IMF, 2012).

However, the economic growth of a country is also due in large part to the existence of a strong stock market that provides liquidity, allows for the implementation of long-term projects and facilitates the entry of foreign financial resources into the national economy.

Brazil has a sophisticated Stock Exchange, known as BM&FBovespa as a consequence of the merger in 2008 between the Mercantile and Futures Exchange of Brazil (BM&F) and the São Paulo Stock Exchange (Bovespa). This is the most important stock market in Latin America in terms of market capitalization and liquidity. Another of its outstanding characteristics is the large number of foreign investors, coming mainly from the U.S. and Europe, attracted by the existence of a stable financial market and a liberal investment climate (BM&FBovespa, 2012).

BM&FBovespa is, therefore, an attractive market for foreign investors who wish to diversify their portfolio internationally. In addition, being an emerging market, many investors and researchers may think that it is less efficient. This is why gaining an understanding of the efficiency of the market and analyzing the possible existence of investment opportunities that allow extraordinary profits to be obtained are subjects frequently studied in this type of market.

According to the definition provided by Fama (1970), a stock market is efficient when the prices of the securities listed there reflect all the available information and also adjust quickly and, therefore, you cannot obtain an extraordinary return with the use of this information.

Consequently, no one can beat the market and if they do so this is just by chance. This questions the work of stock analysts. In addition, according to the Efficient Market Hypothesis, there is no reason to think that prices are over or undervalued and, therefore, technical analysis and fundamental analysis are meaningless and cannot provide us with any information that is not already discounted in share prices.

However, one of the most fruitful lines of research in finance in recent decades has been to detect predictable patterns of behavior in stock returns that allow investors to obtain extraordinary profits.

In this context, the aim of this doctoral thesis is to analyze different investment opportunities in the Brazilian stock market -both national and foreign- that create value for shareholders and, indirectly, analyze the efficiency of that market.

This thesis consists of a compendium of three research articles published or accepted for publication in influential scientific journals belonging to the Journal Citation Report (JCR) of the Web of Science.

The first study was published in 2017 in the Brazilian journal **Revista de Administração de Empresas** 57(4), 317-329 with the title "Revisiting the size effect in the Bovespa" (DOI: 10.1590/S0034-759020170403). The purpose of this study was to analyze the known size effect from a new perspective.

The size effect refers to the fact that stock market returns for smaller companies (or those with low market capitalization) significantly outperform stock market returns for larger companies (Banz, 1981).

There have been many empirical studies carried out on the size effect in stock markets around the world, from the study for the Australian market conducted by Brown *et al*. (1983) to the study of the Spanish market conducted by Miralles-

Marcelo *et al*. (2013). However, these studies have been carried out from a statistical or econometrics perspective without taking into account their practical application.

The present study, in contrast, is divided into two clearly differentiated phases. First, the relationship between prices and volatility for large, medium and small companies are examined. Second, based on the information obtained in the initial phase, optimal investment portfolios are constructed before analyzing the performance of these portfolios as well as the weight of small companies in them.

Specifically, the analysis for the in-sample period consists of the estimation of a VAR-BEKK multivariate model that allows us to detect the transmission of information and volatility between segmented assets based on their market capitalization in three groups: large, medium and small.

This research area has important implications for investors because it gives them the opportunity to solve the classical allocation problem with forward-looking return and volatility forecasts obtained from this multivariate approach. This is due to the fact that the practical application of Markowitz's (1952) portfolio theory requires implementing the expected return and the covariance matrix of the asset under consideration in the optimization programming problem. The traditional approach has been based on calculating the sample mean and covariance matrix of asset returns to time t and uses them as the required inputs for the optimization program. However, this model-free approach produces extreme portfolio weights that fluctuate substantially over time and perform poorly in an out-of-sample.

That is why, in an out-of-sample period, the time-varying return and volatility forecasts of each group of listed companies (large, medium and small) are used for the construction of optimal portfolios. Subsequently, we compare the performance of those optimal portfolios with the performance obtained from a naïve strategy where the same fraction of the budget is invested in each stock market. We follow other authors who argue that in order to quantify the diversification benefit deriving from active asset allocation, it is necessary to compare it to an equally weighted portfolio.

Moreover, the use of the naïve rule as our benchmark strategy can be justified on two additional grounds. Firstly, DeMiguel *et al*. (2009), among others, note that this strategy works surprisingly well out-of-sample. Secondly, this strategy is widely used by investors, especially those who are unaware of the behavior of the market and the assets listed on it, because it is easy to implement as it does not require an estimate of either the variance of the asset returns or any optimization procedure. The final objective of this article is to verify whether, as the previous empirical evidence suggests, higher performance is associated with small firms.

The second study in this doctoral thesis was accepted for publication (and has been accessible online since January 15, 2018) in the **Emerging Markets Finance & Trade** journal with the tittle "The Profitability of Moving Average Rules: Smaller is Better in the Brazilian Stock Market" (DOI: 10.1080/1540496X.2017.1422428). The aim of this study is to analyze the effectiveness of using the moving average rule in the Brazilian stock market. This relies on a comparison of a short-run moving average with a long-run moving average in order to generate buy and sell signals.

The profitability of technical trading rules, such as this moving average rule, has generated great interest and controversy in the most recent empirical evidence. As we indicated previously, according to the Efficient Market Hypothesis, stock markets quickly and efficiently process all relevant information about listed firms. Therefore, the acceptance of the Efficient Market Hypothesis implies that technical trading rules are useless. However, the fact that traders still use those rules presents the dilemma of whether it is rational to attempt to beat the performance of a passive strategy (buy and hold) with an active one, or whether this should be considered a wasted effort.

This is especially important for emerging markets such as the Brazilian one because, as we indicated previously, it has long been believed that since emerging markets are less efficient than developed markets, equity returns can be predicted for them using technical trading rules.

This research contributes to the financial literature in various ways. First, to provide a better understanding of investment opportunities in the Brazilian stock market than is offered by the existing empirical evidence, we focus not only on the selective MSCI Brazil Index -which tracks the performance of large and medium firms- but also on other indices which track the performance of large, medium, small, and small + medium cap segments. This allows us to analyze the existence of a size effect from a different point of view than in the first study in this thesis. Additionally, it should be noted that in this second study we focus on foreign investors. More precisely, the indices are evaluated in U.S. dollars and therefore reflect the holding returns on the Brazilian stock market for U.S. investors.

Finally, in addition to the use of different econometric techniques to account for possible data snooping bias, it should be noted that the sample period is characterized by sharp increases and decreases within a general upward trend. In this type of situation, there is a low probability of improving the buy-and-hold strategy using any technical trading rules. Therefore, the possible success of this investment strategy is of greater value not only for investors in the Brazilian stock market but also for academics, because it supposes a challenge to the Efficient Market Hypothesis.

The last study in this thesis was published in the **Sustainability** journal in its number 3 of 2018 with the title “The Value Relevance of Environmental, Social, and Governance Performance: The Brazilian Case” (DOI: 10.3390/su10030574).

The fact that an increasing number of investors worldwide take environmental, social, and corporate governance (ESG) considerations into account when making their investment decisions was why we decided to dedicate the third study of this thesis to analyzing how that information affects the stock market value of shares (Miralles-Quirós and Miralles-Quirós, 2017).

This study is especially relevant in the case of Brazil because of its unique natural, human and corporate features. Brazil stands out because it is the country with the largest rainforest and the richest biodiversity in the world. Moreover, it has a diverse population of more than 200 million inhabitants. We should also highlight the crucial role of the private business sector in the expansion of its economy. Nonetheless, evidence on emerging markets such as the Brazilian one is scarce because reliable data has not been available until very recently.

The contributions of our research to the existing literature are twofold. First, this study expands on the existing evidence which is mainly focused on analyzing developed markets in Europe and North America, through looking at shareholder value creation due to the socially responsible activities of companies listed on the Brazilian market. More precisely, this study contributes to increasing the level of understanding about the advantages and disadvantages for investors of considering ESG information in their investments. Second, unlike previous studies which exclusively employ the publication of sustainability reports or the inclusion of the company in a socially responsible index as their corporate sustainability indicator, we propose the use of ESG performance scores in order to test whether investors value these three modern pillars of social responsibility differently. Unlike the two previous studies, an alternative econometric approach is used for this research based on the use of panel data. Specifically, we test the accounting-based asset valuation model proposed by Ohlson (1995) in order to examine the long-term relationship between ESG performance and stock prices.

This allows us to deploy a wide variety of econometric techniques for solving a single objective: to provide different investment opportunities in the Brazilian stock market that generate value for the shareholder.

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ARTICLES

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REVISITING THE SIZE EFFECT IN THE BOVESPA

Análise do efeito tamanho na Bovespa

Análisis del efecto tamaño en el Bovespa

ABSTRACT

The size effect has been analyzed in numerous stock markets using different approaches. However, there are few studies focused on its practical applicability. In this context, the aim of this study is two-fold. First, we examine price and volatility linkages among large, medium, and small firms employing a multivariate VAR-BEKK model. Second, we provide the out-of-sample performance of optimal portfolios constructed on the basis of time-varying return and volatility forecasts from this specification approach. Our overall results show that optimal portfolios are primarily composed of medium and small firms. Moreover, our findings reveal that using this technique, it is possible to reduce risk and outperform the naïve rule, which is usually employed by foreign investors interested in the Brazilian stock market. These findings are relevant not only for academics but also for practitioners because it is important an in-depth knowledge of stock market patterns in order to develop correct trading strategies.

KEYWORDS | Multivariate GARCH, optimal strategies, size effect, statistical and economic significance, Bovespa.

RESUMO

O efeito tamanho vem sendo analisado em diversos mercados de ações, utilizando-se diferentes perspectivas. No entanto, existem poucos estudos focados em sua aplicação prática. Nesse contexto, o objetivo do presente estudo é duplo. Primeiramente, vamos examinar as relações entre os preços e as volatilidades das empresas grandes, médias e pequenas, usando um modelo VAR-BEKK multivariado. Em segundo lugar, analisamos o desempenho das carteiras ótimas obtidas a partir das previsões de rentabilidade e volatilidade variáveis no tempo, derivadas do modelo multivariado. Os resultados globais mostram que as carteiras ótimas são compostas principalmente por empresas de tamanho médio e pequeno. Além disso, nossos resultados revelam que, com a utilização dessa técnica, é possível reduzir o risco e melhorar a carteira "naïve", que é normalmente utilizada pelos investidores estrangeiros interessados no mercado brasileiro. Esses resultados são relevantes não só para os acadêmicos, mas também para os profissionais, já que é importante conhecer em profundidade o comportamento dos mercados acionários para desenvolver uma estratégia acionária correta.

PALAVRAS-CHAVE | *GARCH multivariado, estratégias ótimas, efeito do tamanho, significância estatística, econômica, Bovespa.*

RESUMEN

El efecto tamaño ha sido analizado en diversos mercados de acciones utilizando diferentes perspectivas. Sin embargo, existen pocos estudios que se centren en su aplicación práctica. En este contexto, el objetivo de este estudio es doble. En primer lugar, vamos a examinar las conexiones entre los precios y las volatilidades de las empresas grandes, medianas y pequeñas empleando un modelo VAR-BEKK multivariante. En segundo lugar, analizamos la performance de las carteras óptimas obtenidas a partir de las predicciones de rentabilidad y volatilidad variables en el tiempo derivadas del modelo multivariante. Los resultados globales muestran que las carteras óptimas están compuestas principalmente por empresas de medio y pequeño tamaño. Además, nuestros resultados revelan que con la utilización de esta técnica es posible reducir el riesgo y mejorar la cartera naïve, que normalmente es utilizada por los inversores extranjeros que están interesados en el mercado brasileño. Estos resultados son relevantes no sólo para los académicos sino también para los profesionales porque es importante conocer en profundidad el comportamiento de los mercados bursátiles para desarrollar una correcta estrategia bursátil.

PALABRAS CLAVE | *GARCH multivariante, estrategias óptimas, efecto tamaño, significatividad estadística, económica, Bovespa.*

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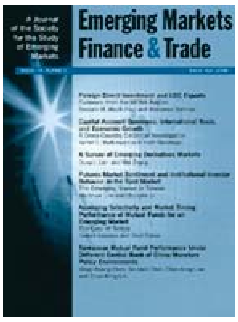

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The Profitability of Moving Average Rules: Smaller Is Better in the Brazilian Stock Market

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The profitability of moving average rules: Smaller is better in the Brazilian stock market

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Abstract

This study analyzes the effectiveness of using certain moving average rules in the most important emerging market of Latin America: Brazil. Using different MSCI indices, we find that the best performance is provided by the MSCI Brazil Small Cap Index, which tracks the small cap segment of the Brazilian stock market, as opposed to the MSCI Brazil Index which measures the performance of large and medium firms and has been the main reference for the Brazilian stock market in previous empirical evidence. Additionally, we report clear evidence of the existence of a size effect in the Brazilian stock market due to the superior performance of the index which tracks the smaller companies over those which track larger companies. These results restate the importance of in-depth knowledge of stock market patterns in order to develop correct trading strategies in each case.

JEL Classification: G10, G11, G14.

Keywords: Moving average rules; Brazil; Profitability; Size effect; Data snooping bias

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sustainability

Article

The Value Relevance of Environmental, Social, and Governance Performance: The Brazilian Case

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Abstract: There is extensive literature on the value relevance of social responsibility for companies that operate in developed countries. However, little is known about the influence of these practices on the price of assets listed on emerging economies, such as Brazil. In this context, the aim of this study is to analyse whether social responsibility activities carried out by companies listed on the São Paulo Stock Exchange during the 2010–2015 period play a significant role in enhancing firm value. Unlike previous studies, we distinguish between the three modern pillars of sustainability: environmental, social, and corporate governance (ESG). Our overall results support the value enhancing theory rather than the shareholder expense theory. However, it is important to note that the results also show that the market does not significantly value the three ESG pillars. Specifically, the market positively and significantly values the environmental practices carried out by companies not related to environmentally sensitive industries. In contrast, the market positively and significantly values the social and corporate governance practices carried out by the companies belonging to these sensitive industries. These findings are relevant for both investors and the managers of these companies, policy makers, customers, and citizens concerned about ESG issues.

Keywords: sustainable development; ESG performance; firm value; environmentally sensitive industries; Brazil

1. Introduction

Sustainable development, understood as development that meets the needs of the present without compromising the ability of future generations to meet their own needs [1], is today a key item on the agenda of corporations, governments, and academics around the world [2].

Specifically, when the concept of sustainable development is applied to companies it is called corporate social responsibility (CSR) and implies the incorporation of the objectives of social equality, economic efficiency, and environmental performance into the company's operating practices [3]. However, the concept of CSR is undergoing continuous evolution, moving from an initial position of damage limitation to a proactive position based on the creation of shared value, that is, of significant benefits for both society and the company itself [4].

In this context, the economic, natural, and human resources in Brazil make this country an important candidate for studying sustainable development and CSR. Brazil stands out due to its expanding economy, which is experiencing one of the highest growth levels in the world, with the private business sector playing the most important role in this regard [5]. It also stands out because it has the largest rainforest and the richest biodiversity in the world and a population of more than 200 million inhabitants [6].

However, most of the literature on sustainable development or CSR has focused on studying developed countries. Evidence on emerging countries like Brazil is scarce because reliable data has not been available until very recently. Moreover, prior research has primarily focused on analysing the

GENERAL CONCLUSIONS

When in 2003 a Goldman Sachs study included Brazil as one of the top four emerging markets, along with Russia, India and China forming the so-called BRICs, the country started to gain visibility worldwide. Moreover, when on October 2, 2009 Rio de Janeiro won the bid to host the 2016 Olympics this was generally interpreted as a clear sign of Brazil's increasing international importance.

Consequently, in recent years Brazil has not only obtained investment grade status from the major international credit rating agencies but has also increased its influence in relation to a number of areas of global importance, including a prominent role in trade, international finance, environment and energy debates.

Brazil, just like other emerging countries, seems to be well positioned for new growth opportunities. With its abundance of natural, human and economic resources, the options available for making investments in Brazil seem to be increasing every day. In addition, the integrated BM&FBovespa is the most important emerging market in Latin America and offers a host of products for trading, for both national and foreign investors.

In this sense, it is necessary to note that it has long been believed that since emerging markets are less efficient than developed markets, equity returns can be predicted for them using technical trading rules. Based on this premise, the aim of this thesis has been to identify investment opportunities that generate shareholder value in the Brazilian stock market from different perspectives.

The first two empirical studies in this thesis, although employing different methodological approaches, conclude that there is a prominent size effect in the Brazilian stock market. This means that small firms are the most profitable and significantly outperform the returns obtained from larger companies, which is clear evidence of the existence of a size effect.

These overall results shed new light on the Brazilian stock market and how to generate significant excess return. They also highlight the importance of in-depth knowledge of stock market patterns in order to develop the right trading strategies in each case: i) from a national or international perspective; ii) constructing optimal portfolios or applying technical trading rules replicating some indices.

In contrast, the third empirical study included in this thesis focusses on a different issue: the impact on stock prices of socially responsible practices carried out by companies listed on the Brazilian stock market considered by investors and analysts when making their investment decisions. This is a prominent area of research that is especially important in the case of Brazil due to its unique natural, human and economic resources.

In summary, the results indicate that the Brazilian stock market as a whole positively values these activities and, therefore, this supports the value enhancing theory rather than the shareholder expense theory. However, the results also reveal that although environmental sensitive industries are especially concerned about environmental practices, these are already reflected in share prices. In contrast, unexpected information about social and corporate governance practices is what generates significant added value.

These overall findings reveal that implementing socially responsible policies that lead to a stronger sustainability performance is important to investors operating in the Brazilian stock market and they are understood as a strategic advantage that generates value in the stock market. These findings are relevant not only for investors but also for the managers of these companies, policy makers, and other stakeholders such as customers and members of the public concerned about environmental, social, and corporate governance issues.

Finally, it is necessary to note that future research should focus on two different fields. First, it is necessary to continue analyzing investment strategies with Brazilian firms. In this sense, one option is alternative financial instruments such as Exchange Traded Funds (ETFs) which track the most relevant Brazilian indices and can be traded in other markets such as the New York Stock Exchange (NYSE). These financial products have become increasingly popular among US investors, reaching high trading volumes, and are indirect investment vehicles which allow investors to achieve exposure to foreign equity returns in a domestic setting.

Second, it is also necessary to continue analyzing the crucial role of the socially responsible activities carried out by Brazilian firms, but more especially those related to the environmental field. Brazil has natural resources on a scale that is not available to the rest of the countries of the world. Brazil covers a vast area that encompasses the world's largest rainforest and a large percentage of the world's fresh water is concentrated in the country. It is therefore necessary to continue studying how these aspects are addressed by companies listed on the Brazilian stock market and whether they contribute to the creation of value not only for shareholders but also for the rest of the stakeholders including managers, policy makers, market regulators, customers, and members of the public concerned about these important issues.