

Research paper

Corporate Brand and Stock Returns

Submitted in 31 January 2019

Accepted in 22 March 2019.

Evaluated by a double blind review system

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Structured abstract

Purpose: The brand stands out for its ability to differentiate competing firms, contributing to the definition of the strategy and the good positioning of the entities. Firms with high brand value standards experience higher chances of keeping a sustained superior performance over the course of time. In this way, it is important to analyse the impact of corporate brand on returns and on risk.

Design/Methodology/Approach: In order to understand if the firm's brand influences the abnormal returns and the systematic risk, we estimated an adaptation of CAPM model based on firms' financial market data through a panel data analysis which included 28,031 firm-year observations, which occurred between 2007 to 2017, from a full sample of 367 firms, relative to 14 countries and 9 industries. Regarding the methodology, the model used in this study is characterized by the determination of risk-adjusted returns which estimation period coincides with the test period.

Findings: The results indicate, contrary to what it was expected, that firms with higher ranking in BRANDFINANCE undergo lower abnormal returns when compared to those firms with low ranking. With regard to the systematic risk the results evidence that there is no significant difference in the systematic risk between firms with high ranking in BRANDFINANCE and firms with low ranking.

Research limitations: This study has two known limitations. The first is the size of the population (30 top financial institutions (distributed among deposit money banks, insurance and investment companies). This is regarded as small compare to the total population. Second, the study concentrated on a sub-sector of Nigeria economy. Result may vary if other sectors affected by the treasury single accounts exercise are included in the study.

Originality/Value: We believed that the use of market data and the methodology used is a contribution to the literature.

Keywords: Corporate brand; Returns; Financial performance; Abnormal returns; Systematic risk

1. Introduction

With the globalization and the increased complexity and competitiveness in the markets, intangible assets have become one of the best and most valuable tools owned and used by firms (Kay, 2006; Perez & Fama, 2006).

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The brand, as an intangible asset, stands out for its ability to differentiate between competing firms, contributing to the definition of the strategy and the good positioning of the entities (Gromark & Melin, 2011; Shocker, Srivastava, & Ruekert, 1994). Corporate brands also allow the increase of reputation and visibility of firms in the market, and of course contribute to increase credibility in good organizational performance (Feldman, Bahamonde & Bellido, 2014; Smith, Smith & Wang, 2011), which is reflected in the financial markets.

Risk of stocks is also of great important, given the way it influences investment decisions. Despite the different risk profiles of investors, for the same level of return, stocks with lower risk will also be the most sought after.

Thus, the analysis of the impact of the corporate brand on return and on risk of the stocks is of great importance for both firms and investors. The perception of how corporate brands create value allows firms to make better management and allocation of naturally limited resources in achieving their goals. Taking into account the diversity of entities operating in the market, the valuation of brands also allows to signalise and to better evaluate these firms, helping investors to define their investment strategies.

Despite the extensive literature on the impact of the corporate brand on the stock returns (Aaker & Jacobson, 1994; Barth, Clement, Foster & Kasznik, 1998; Yeung & Ramasamy, 2008; Hsu, Wang & Chen, 2013; Chehab, Liu & Xiao, 2016; Rahman, Rodríguez-Serrano, Lambkin, 2018, 2019; Crass, Czarnitzki & Toole, 2019 and Wang and Jiang, 2019), we find that there are few studies that deal with the relationship between corporate branding and stock risk. In this sense, the present research intends to fill a gap in the literature, analysing the influence of the corporate brand on the risk of the stocks, and consequently on their return. For this purpose, it was considered firms' financial market data through a panel data which included 28,031 firm-year, which occurred between 2007 to 2017, from a full sample of 367 firms, relative to 14 countries and 9 industries. Regarding the methodology, the model used in this study is characterized by the determination of risk-adjusted returns which estimation period coincides with the test period. So we believed that the use of market data and the methodology used is a contribution to the literature.

The remainder of paper is divided into the following five parts: literature review; objectives and hypotheses; sample and methodology; presentation and discussion of the results obtained; and conclusions.

In the first section, a brief introduction will be made to the topic. The main concepts discussed in this study (corporate branding, return and risk) and the relationship between them will be identified in the second section. In the third section, the main objectives and the research hypotheses analysed will be identified, and the sample and the methodology used will be mentioned in the fourth section. In the fifth section the results will be presented, interpreted and explained. In the last section, the conclusions obtained will be presented.

2. Literature Review

The This section intends to make a brief literature review on the relationship between brand, return and risk, on which our study will be based. In this sense, the concept and characteristics of brand will be presented.

2.1. Corporate brand overview

2.1.1. Concept of corporate brand

According to Van Riel & Van Bruggen (2002), the corporate brand can be defined as a process that is systematically planned and implemented to create a favourable image and, consequently, a favourable reputation of the firm as a whole, by sending signals for all stakeholders and for behaviour management and communication. According to Bick, Jacobson & Abratt (2003), this is a manifestation of the characteristics that distinguish firms from their competitors.

For Jones (2010), the process of creating and developing the corporate brand implies the aggregation and optimization of all existing resources, as well as the reconciliation of internal and external communication of the organization, which, properly aligned, firm in a distinctive and lasting manner in the market.

Contrary to the product brand, oriented exclusively to customers / consumers, the corporate brand must create, encourage and sustain a mutually rewarding relationship between the organization and its stakeholders - internal and external (Alizadeh, Moshabaki, Hoseini & Naiej, 2014; Fan, 2005), which include, among others, customers, suppliers, employees, shareholders, state and community.

According to Aaker (2004), Balmer (2001, 2012), Hulberg (2006) and Ruan, Gu, Liu & He (2016), the corporate brand should be comprehensive, taking into account the various entities for which it is intended, of the firm, reflecting the cultural, organizational, ethical and social responsibility values that guide its conduct.

The corporate brand can thus be understood as multidisciplinary, cultural and strategically focused on the internal and external public of the firm (Chang, Chiang & Han, 2015; Fetscherin & Usunier, 2012), thus becoming a cyclical, harmonious process and complex, which must be absolutely consistent and coherent over time (Chernatony, 1999; Einwiller & Will, 2002; Kaufmann, Vrontis, Czinkota & Hadiono, 2012).

2.1.2. The value of corporate brand

In order to understand the impact of corporate brand on return and on risk of stocks, it is important to understand how their value is generated. Corporate brand equity can be defined, according to Keller (2008), as the differential response of consumers, customers, employees or competitors, corresponding to the sum of the reactions (and consequently of the results obtained in response to these reactions) of the different stakeholders in relation to the firm's conduct in the markets in which it operates.

The value of the corporate brand has been analysed over time under different perspectives, depending on the main agents that generate and enjoy this value: customers (consumer perspective) and the organization itself (financial or business perspective).

From the perspective of the consumer, and as reported by Bick et al. (2003), the value generated by the corporate brand for the customer results from the satisfaction of their needs, through the trust generated by the delivery of quality products or services at a reasonable price and the reduction of risk in the purchasing process.

According to studies by Buil, Chernatony & Martínez (2013), Davick & Sharma (2015), Keller (2002), Khan, Rasheed, Islam, Ahmed & Rizwan (2013), Liao & Cheng (2014), Pappu, Quester & Cooksey (2005), and Yoo & Donthu (2001), the value of the brand derives mainly from the perceptions, reactions and experiences of the consumers, which will depend on the loyalty, notoriety and associations made to the brand, the perception of inherent quality and the rest assets that make it up.

In a financial perspective, Biel (1992), Doyle (2001), Kapferer (2008), Keller (1993) and Simon & Sullivan (1993) consider that the brand value results from the increase in future cash flows generated by the firm (associated of the brand) and the commercial and financial risk reduction.

The differentiation generated by the various entities present in the market leads to the holding of competitive advantages (Gromark & Melin, 2011; Shocker et al., 1994), which allow the practice of premium prices, increase the value of the cash flows generated and the stability of results obtained (Belo, Lin & Vitorino, 2014; Kapferer, 2008).

2.1.2.1. The measure of corporate brand

Considering the different perspectives of valorisation of the corporate brand (mentioned above), the two main methodologies used to determine this value stand out: Financial-based brand equity, from a financial or quantitative perspective, and Customer-based brand equity, from the perspective consumer or qualitative.

Financial-based brand equity

According to Ruenrom and Pattaratanakun (2012), the brand value (from a financial perspective) can be determined by considering three different approaches:

- 1) *Cost-based approaches*, which consider that the brand's valorisation corresponds to the investment required for its creation and development (Keller, 2008) or for its replacement by a brand with the same characteristics and equivalent utility for the firm (Aaker, 1991). According to Aaker (1991), the cost of replacing the brand can be calculated by dividing the cost of launching a new brand by its probability of success;
- 2) *Market-based approaches*, where the value of a brand is the result of a comparison of similar brands on similar markets and the value of which is multiplied using the market value or the operating results of the firms in question (Kapferer, 2008);
- 3) *Income-based approaches*, based on the assumption that brands generate profits for firms, through (1) the difference in sales (price vs. quantity) between a brand-name product recognized in the market and its unbranded or generic equivalent product (Ailawadi, Lehmann & Neslin, 2003), and (2) royalties paid for the use of the brand (Rubio, Manuel & Pérez-Hernández, 2016).

For Ailawadi et al. (2003) and Ruenrom & Pattaratanakun (2012), the main advantages of using financial approaches to brand enhancement are its simplicity and user-friendliness, ease of data collection and wide acceptance in the area financial and accounting. However, according to these authors and Davcik (2013), these measures are incomplete, since they only consider the financial value of the brand (or originated) and not its intangibility (such as reputation or credibility, for example), and they are mainly oriented to the short term.

Costumer-based brand equity

Considering a qualitative approach to the brand, focused on the reactions and experiences of consumers, several methodologies were developed to capture brand value, such as Keller's (1993) evaluation model and Brand Equity Ten proposed by Aaker (1996).

For Keller (1993), the value of the brand derives from the consumer's knowledge of the brand, being defined by two components: image and brand recognition. The brand image comprises the perceptions of the consumer, that is, the personality of the brand and its meaning for the consumer. Brand recognition refers to the force of the brand's presence in the minds of consumers, and corresponds to brand reminders and associations in the purchasing decisions made (Keller, 1993).

For Aaker (1996), the brand is a set of assets whose valuation will depend on how these assets are designed and enhanced. According to this author, brand assets can be analysed considering five distinct dimensions: (1) the reputation and (2) brand loyalty, (3) customer perceived quality and market leadership, (4) associations and differentiation granted by the brand and (5) the market behaviour. These dimensions are measured on the basis of 10 specific indicators, such as premium pricing, consumer loyalty, brand and firm awareness, market share held among others (Aaker, 1996).

For Ailawadi et al. (2003), brand-based consumer measures are extremely useful, presenting a great power and richness of diagnosis. However, given the way these studies are conducted (through questionnaires and surveys), they are limited to the availability and subjectivity of respondents (usually consumers of the goods and services provided by the firm), not taking into account the perceptions and experiences of the respondents (Ailawadi et al., 2003; Davcik, 2013; Davcik, Vinhas da Silva & Hair, 2015). According to these authors, they also do not pay attention to the financial performance of the firm.

Given the limitations of the approaches presented above, a number of independent and credited entities specialize in the dissemination of information on the value of different brands, considering a hybrid approach (combining the quantitative and qualitative component of the brand) in determining its data that are commonly used in scientific studies. For example, the study carried out by Rao, Agarwal & Dahlhoff (2004), which used a sample of 113 firms of the 500 best firms published by Standard & Poor's, and the study of Yeung & Ramasamy (2008) that used the Business Week Top 100 Global Brand Value to construct a sample of 300 observations from 2000 to 2005. More recent studies, such as Chehab et al. (2016), Dutordoir, Verbeeten & De Beijer (2015) and Hsu, Fournier & Srinivasan (2016) used the INTERBRAND ranking as a measure of the brand.

BRANDFINANCE, one of the world's leading firms in the valuation of brands, whose quality and methodology is recognized by auditors and tax authorities around the world (League Table Brand valuation (2004)).

In branding, BRANDFINANCE adopts a royalty-based approach, taking into account an estimate of the future returns generated by the brand and the calculation of a royalty fee that would be charged for its use (assuming that the trademark user would not be its holder) (League Table Brand valuation methodology, 2017).

According to BRANDFINANCE, the brand valuation process involves 7 essential steps: (1) the calculation of brand strength (on a scale of 0 to 100, based on emotional, financial and sustainability attributes, among others) and (2) the determination of the royalty rate range, taking into account the different sectors of activity, which allow (3) to calculate

the royalty rate. In a second phase, (4) the specific revenues generated by the brand in the period under analysis are determined, and (5) estimations are made of its future value. Subsequently, to the estimated value of revenues is (6) applied to the royalty rate, which, (7) deducted from taxes, corresponds to the value of the brand (League Table Brand valuation methodology, 2017).

The main advantages of using the methodology proposed by BRANDFINANCE are, according to this entity and Salinas & Tim (2009), the accessibility of the necessary information to the application of the model, which allows to minimize the judgment associated with the brand valorisation. This model also allows to recognize the value generated by the brand, although the firm to which it is associated may not be profitable (League Table Brand valuation methodology, 2017).

However, for Salinas & Tim (2009), the application of this model depends on the availability of information, which can condition the comparability of results. This methodology should also be applied judiciously, particularly with regard to the range of royalty rates, as they may lead to a conservative or aggressive valorisation of the brand (League Table Brand valuation methodology, 2017).

Considering the objective of the present research (the analysis of the impact of the corporate brand on return and on risk of the firms' stocks), and the different advantages and disadvantages associated with the different methodologies of valorisation of the existing brand, we choose to use BRANDFINANCE in this study. This is one of the most "complete" brand enhancement methodologies, often used in scientific studies, such as Chang & Young (2016), in the analysis of brand performance in the financial crisis of the late 2000s, and Harasheh & Gatti (2016) in the analysis of the relationship between IPO prices and brand appreciation. BRANDFINANCE is also the entity that provides the largest and most varied brand valuation lists (rankings up to 500 brands, for about 35 countries and 40 different sectors of activity), which are relevant to this study.

2.1.2.2. Relationship between corporate brand, return and risk

One of the first studies carried out in this area of research was executed by Aaker & Jacobson (1994), in the analysis of the impact of brand value on the oscillations of stock prices. To do this, they used the EquiTrend measure (based on questionnaires to consumers), considering a sample of 34 American firms from 1990 to 1992, and concluded that favourable changes in the value of the brand are positively associated with the return of the firm stocks.

A number of researches have been carried out since then (Barth et al., 1998; Chehab et al., 2016; Hsu, Wang & Chen, 2013; Yeung & Ramasamy, 2008; Rahman, Rodríguez-Serrano, Lambkin, 2018, 2019; Crass, Czarnitzki & Toole, 2019 and Wang and Jiang, 2019), and conclude a positive relationship between the brand value and the stock returns.

In 2016, Chehab et al. sought to analyse the relationship between the value of the brand and the short, medium and long-term return of corporate stocks. For this purpose, a sample composed of US non-financial firms, listed in the Interbrand ranking of the "100 most valuable brands", was considered in the period from 2001 to 2012. The authors showed a positive and significant relationship between the brand value and the stock returns.

Hsu et al. (2013), considering a sample composed by the firms listed in the "Top 100 Global Brands" ranking published by Business Week and Fortune magazine's "100 Best Companies to Work" from 2001 to 2010, sought to establish a relationship between the brand value and the stock performance. Taking into account the results obtained, the authors verified that the value of the brand is positively correlated with the stock return.

Recently, some authors have analysed this relationship considering the effect of the disclosure of information regarding new products and / or new brands on the stock return (Basgoze, Yildiz & Camgoz, 2016, Dutordoir et al., 2015, Mann & Babbar, 2017).

Basgoze et al. (2016) analysed the effect of the brand announcement on the stock return of Turkish firms listed in BRANDFINANCE during the period from 2010 to 2014. The results obtained allowed to conclude that the markets react positively to the announcement of the brand, although they take some time to react, tending to reward the best firms in the long run. However, these results differ for new firms, which experience negative returns in the months following the announcement of the brand.

Mann & Babbar (2017) analysed the impact of the announcement of new products on the stock price of Indian firms belonging to the BSE 500 index, for a total of 383 advertisements over a period of 11 years (2003 to 2013). Through an event study, the authors found a significant impact of these announcements on stock prices, with abnormal returns in the days preceding the announcement of new products due to the information leak.

In 2016, Hsu et al. sought to determine the valuation of financial markets for the different brand management strategies or portfolios of existing brands, considering for this purpose a sample of 302 firms listed on the NYSE, from 1996 to 2006. The authors concluded that the multiple brand management strategies adopted by firms lead to different risk and return profiles, which will have different impacts on their valuation.

Despite the existence of several studies that indicate a positive link between the brand value and the stock return, the authors Johansson, Dimofte & Mazvancheryl (2012) do not corroborate these results. In their study, they analysed the performance of the most notable American firms, considering a sample of 100 American firms, during the peak of the financial crisis of 2008. The analysis was made considering two distinct measures of valorization of the brand (the financial and the based in the consumer), which led to different results. Following the application of the Fama-French model (1993) to the measures mentioned above, Equitrend's shares (representative of the consumer-based measures) showed a positive and significant performance, which did not occur in the firms listed in Interbrand financial measures). According to Johansson et al. (2012), this divergence of results occurs because there is no correlation between the two measures used.

As mentioned by Aaker (1996), Aaker & Jacobson (1994) and Sivakumar & Raj (1997), the detention of strong brands also allows, in addition to increasing the stock return, the management of risk exposure, since it reduces the elasticity of demand and prices, minimizing the variation of sales and operating results, thus protecting the firm from market adversities. In this sense, some studies (Aaker & Jacobson, 2001; Madden, Fehle & Fournier, 2006; Mcalister, Srinivasan, & Kim, 2007; Rego, Billett, Morgan, 2009; Bharadwaj, Tuli & Bonfrer, 2011; Yildiz & Camgoz, 2019) analyse the impact of the brand on the stock systematic risk.

Madden et al. (2006), through the models of Fama & French (1993) and Carhart (1997), compared the performance of the portfolios with a market indicator, having concluded that the strong brand portfolios are associated with higher returns and also lower risk.

Similarly, Bharadwaj et al. (2011), using the model of Fama & French (1993), analysed the impact of brand quality on return and on risk of the stocks, considering a sample of 132 firms, between 2000 and 2005, for a total of 519 observations. The results showed that positive changes in brand quality lead to an increase in abnormal return and a reduction in the impact of systematic risk of stocks.

Previously, Rego et al. (2009), using consumer-based brand enhancement measures, examined the impact of the brand on risk of 252 firms in the period 2000-2006. In this study, the authors found that brand strength / notoriety is associated with risk of the firm, being mainly predictive of the idiosyncratic risk and reducing the systematic risk.

Also Mcalister et al. (2007) analysed the impact of the brand on systematic risk of stocks, considering the R&D expenses incurred by the firms as representative of the strength of the brand. Considering a sample of 644 entities, over a 22-year period (1979 to 2001), the authors concluded that the increase in these expenses (representative of brand appreciation) contributes to reducing the systematic risk of stocks.

Yildiz & Camgoz, 2019 using a sample of 254 Turkey's firms-year observations for the period 2009-2014 conclude that enhancing brand equity is an important tool for firms in reducing unsystematic and downside systematic risk and their stock price.

3. Research objectives and hypothesis

Taking into account the brief review of the literature carried out in the previous section, we can now define the hypotheses of research. The present study aims to determine the impact of the corporate brand on return and on risk of the stocks.

Considering the aforementioned studies on the impact of the corporate brand on stock return (Aaker & Jacobson, 1994; Barth et al., 1998, Chehab et al., 2016, Hsu et al., 2013, Yeung & Ramasamy, 2008), we predict a positive relationship between these two variables. Thus, one of our hypotheses of investigation can be formulated as follows:

Hypothesis 1: The corporate brand positively influences the stock return.

As a result of the literature review, the maintenance of strong corporate brands contributes to the maintenance of the cash flows generated, protecting firms from market adversities, which reduces the systematic risk of their stocks (Aaker & Jacobson, 2001; Bharadwaj et al., 2011; Madden et al., 2006; Mcalister et al., 2007; Rego et al., 2009). Thus, our second hypothesis of investigation can be described as follows:

Hypothesis 2: The corporate brand negatively influences the systematic risk of stocks.

4. Methodology and data analysis

In this section, the research strategy adopted will be presented, which will include the methodology and sources of information, sample used and the process of data collection applied in this study.

4.1. Methodology

The analysis of the impact of the corporate brand on return and on risk of stocks will be carried out through the adaptation of the Capital Asset Price Model (CAPM) model, considering the division between the low ranking and high ranking firms in BRANDFINANCE.

Equation 1.

$$R_{i,t} - R_{f,t} = \alpha^{LR} + \beta^{LR} * (R_{m,t} - R_{f,t}) + \alpha^{HR} * D_i + \beta^{HR} * D_i * (R_{m,t} - R_{f,t}) + \varepsilon_{i,t}$$

Where:

- $R_{i,t}$: Return of stock i in month t.
- $R_{f,t}$: Risk free return in month t.
- $R_{i,t} - R_{f,t}$: Risk premium of stock i in month t.
- α^{LR} : Constant parameter estimated which denotes the abnormal returns of firms with low ranking in BRANDFINANCE.
- β^{LR} : Coefficient estimated which measures the sensibility of stock returns from firms with low ranking in BRANDFINANCE to market return.
- $R_{m,t}$: Market return in month t.
- $R_{m,t} - R_{f,t}$: Market risk premium in month t.
- α^{HR} : Constant parameter estimated which denotes the variation of abnormal returns from firms with high ranking in BRANDFINANCE, when compared to those with low ranking.
- β^{HR} : Coefficient estimated which measures the sensibility's change of stock returns from firms with high ranking in BRANDFINANCE, to market return, when compared to those with low ranking.
- D_i : Dummy variable coded 1 if firm i has high ranking in BRANDFINANCE, otherwise 0.

Running a panel data analysis, we explored the *Pooled OLS*, the *Fixed-effects*, and the *Random-effects* models. Each estimation went over some tests, such as the *F Test*, the *Breusch-Pagan Test*, or the *Hausman Test*, in order to determine the models' quality and its consequent validation.

4.2 Sample and Data

The sample considered in this study includes firms on the "GLOBAL 500" ranking and published by BRANDFINANCE, from 2007 to 2017, in a total of 367 firms, relative to 14 countries and 9 industries. The period was chosen based on the availability of data from the BRANDFINANCE database.

The information regarding the value / position of the corporate brand is obtained, annually, through the BRANDFINANCE listing mentioned above. Firms are considered to have a high ranking when their position in the BRANDFINANCE ranking is higher than the average position of the ranking for each of the analysed years. Conversely, low-ranking firms are classified as those with a ranking lower than the average ranking. The choice of the brand measure is based on Salinas & Tim (2009), with its renown and quality, recognized by various legal and tax entities throughout the world, as well as the quantity and diversity of information available.

The remaining financial information required for the analysis of return, systematic risk, including market data, is obtained from the DATASTREAM database. These data are collected for the years indicated above (2007 to 2017), with monthly frequency.

The proxy of the risk-free interest rate considered is the treasury bills, obtained through FEDERAL TREASURY, with a monthly frequency.

To obtain the final sample the following criteria are applied:

- Exclusion of the brands / firms belonging to the financial sector (banking and insurance), taking into account the accounting and legislative disparity of this sector, and conglomerates;
- Exclusion of brands / firms from 25 selected countries (Austria, Belgium, Brazil, Chile, China, Colombia, Denmark, Finland, Greece, India, Indonesia, Ireland, Kuwait, Luxembourg, Malaysia, Mexico, Portugal, Qatar, Russia, Saudi Arabia, South Africa, Thailand, Taiwan, Turkey and United Arab Emirates) with the aim of obtaining a more homogeneous sample and in order to estimate an adapted model of Fama e French (1993) with the factors availability in site of French to analyse the robustness of the results;
- Selection of brands belonging to listed firms, and for firms with multiple brands, only the "main" brand was considered, excluding the remaining ones.

The firms of the sample are distributed in 14 countries, table 1, with the USA, Japan and France being the most represented (48.0%, 13.6% and 9.3%, respectively) and Norway, Singapore and Australia as the least represented countries (0.3%, 0.5% and 0.8%, respectively).

Table 1. Sample Composition by country

Country	Firms number	% Sample	% return average
Australia	3	0.8%	0.22%
Canada	9	2.5%	0.21%
France	34	9.3%	0.22%
Germany	27	7.4%	0.23%
Italy	7	1.9%	0.20%
Japan	50	13.6%	0.22%
Netherlands	6	1.6%	0.21%
Norway	1	0.3%	-0.04%
Singapore	2	0.5%	0.19%
Spain	10	2.7%	0.25%
Sweden	6	1.6%	0.22%
Switzerland	11	3.0%	0.25%
United Kingdom	25	6.8%	-0.23%
USA	176	48.0%	0.24%
Total	367	100%	

Considering the classification by industry (defined in the FTSE International Industry Classification Benchmark (ICB)), as identified in the table 2, consumer services and technology are the most represented, with 26.7% and 18.5%, respectively. On the other hand, basic materials (1.9%) and oil and gas (5.4%) are the least representative of the sample.

Table 2. Sample Composition by industry

Industry	Firms number	% Sample	% return average
Consumer goods	34	9.3%	0.20%
Health care	38	10.4%	0.21%
Basic Materials	7	1.9%	0.16%
Oil and gas	20	5.4%	0.20%
Industrial Products	52	14.2%	0.20%
Consumer Services	98	26.7%	0.18%
Public Services	25	6.8%	0.18%
Technology	68	18.5%	0.24%
Telecommunications	25	6.8%	0.14%
Total	367	100%	

Table 3 presents the descriptive statistics (mean, median, minimum, maximum, and standard deviation) of the risk premium of firms under study, considering all firms in the sample in the period under analysis.

Table 3 - Descriptive statistics of the risk premium of firms

Statistic	Firms with high ranking in BRANDFINANCE	Firms with low ranking in BRANDFINANCE
N	14,322	13,709
mean	0.0012	0.0016
median	0.0044	0.0030
minimum	-1.5851	-1.0389
maximum	0.73064	0.85811
Standard deviation	0.086684	0.094591

Taking into account the values obtained, we verified that the firms with low ranking in BRANDFINANCE present, on average, a higher risk premium compared to the firms with high ranking.

The dispersion of return (standard deviation) is higher in firms with low BRANDFINANCE ranking, which shows a greater disparity in the values obtained regarding the risk premium of low ranking BRANDFINANCE firms.

In order to test the obtained results, non-parametric tests were also carried out, namely by applying the U Mann-Whitney test (whose results are in the table 4), which compares the median risk premium of the samples considered (firms with high and low ranking in BRANDFINANCE). The results indicate that we do not reject the null hypothesis, for a significance level of 5%, which indicates that the distribution of the risk premium of the two samples is similar.

Table 4 – Mann-Whitney U Test to risk premium of firms

	N	Mean Rank	P value
Firms with high ranking in BRANDFINANCE	14,322	13,989.67	
Firms with low ranking in BRANDFINANCE	13,709	14,043.51	
Total	28,031		
Teste U de Mann-Whitney			0.578

5. Presentation and dicussion of results

Thus, in order to achieve an adequate model, we estimated the Pooled OLS, the Fixed-effects, and the Random-effects models, then we could compare some tests, including the F Test and the Hausman Test, in order to select one for analysis.

Regarding the prior approach on panel data analysis, we first explored the F Test to understand which of the two models (the Pooled OLS or the Fixed-effects) should be selected. Since the null hypothesis was rejected for 1% significance level, the Fixed-effects model will be selected. Considering such findings, we conducted a second analysis

between Fixed and Random-effects. The results reject the Random-effects in favour of the Fixed-effects model (table 5).

Table 5– Estimation results obtained from the Fixed-effects model

	Coefficient	Standard error	p value	
α^{LR}	0.0017	0.0008	0.0451	**
β^{LR}	0.9799	0.0304	<0.0001	***
α^{HR}	-0.0043	0.0015	0.0052	***
β^{HR}	-0.0312	0.0413	0.4505	

Note: *** significance level of 1%; ** significance level of 5%; * significance level of 10%

The results obtained allow us to say that the sensitivity of the return of the firms with low BRANDFINANCE ranking to the market is statistically significant and positive, at a significance level of 1%. The statistical significance of 1% is also observable for the change in the abnormal returns of the firms with a high ranking in relation to the firms with low ranking in BRANDFINANCE. The abnormal return of the low ranking firms in BRANDFINANCE is positive and significant, at significance level of 5%. The results do not support the first research hypothesis that firms with higher ranking in BRANDFINANCE undergo higher abnormal returns when compared to those firms with low ranking. We believe that this happens because stock prices adjusted instantly to the information about firms with high ranking that support the market efficiency hypothesis. The difference between our results and most of the literature (for example Barth et al., 1998; Chehab et al., 2016; Hsu et al., 2013; Yeung & Ramasamy, 2008; Rahman et al., 2018, 2019; Crass et al., 2019 and Wang and Jiang, 2019) may be caused by the use of a different methodology. Our results corroborate the results from Johansson et al. (2012) when they used the Interbrand measure.

Concerning the systematic risk, contrary to expectations, based on Aaker & Jacobson, 2001; Madden, et al., 2006; Mcalister et al., 2007; Rego et al., 2009; Bharadwaj et al., 2011; Yildiz & Camgoz, 2019, the results evidence that there is no significant difference in the systematic risk between firms with high ranking in BRANDFINANCE and firms with low ranking. This evidence can be result from the fact the sample to be composed by the most valuable brand' firms, and differences between in the brand ranking is not sufficient to evaluate the impact the corporate brand on systematic risk.

In order to evaluate the robustness of the results, we estimated the model of the equation (1) based on weekly data and estimated the same model with a year dummy. We also estimated the model adapted from Fama and French (1993). The results obtained were similar.

6. Conclusion

The relationship between corporate brand and firm's performance has deserved some attention from researchers over many years

According to the literature review, we would expect that firms with high ranking in BRANDFINANCE experience higher abnormal returns and lower systematic risk when compared to those low ranking. In order to achieve our aim, we constructed a sample of

28,031 firm-year observations, which occurred between 2007 to 2017, from a full sample of 367 firms, relative to 14 countries and 9 industries.

The results do not support the first research hypothesis that firms with higher ranking in BRANDFINANCE undergo higher abnormal returns when compared to those firms with low ranking (we find the inverse). We think that our results may be outcome of the instantaneous adjustment of stock prices to the information about firm's high brand and to the use of a different methodology, particularly, due the use of an estimation period that coincides with the test period (the use of different periods of estimation and testing may capture others changes than those that are intended to be tested).

With regard to the systematic risk the results evidence that there is no significant difference in the systematic risk between firms with high ranking in BRANDFINANCE and firms with low ranking.

This study can be extended in many different directions, such as, other brand measures; a wider sample including, for example, with firms from emerging markets or firms that are not in a brand ranking; and sectorial analysis.

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