Performance of valuable brands in Latin America

Track: Marketing Management

Abstract

This study aimed to compare the performance of stocks of companies with recognized brand value (according to Millward Brown's reports) with the stocks of other companies listed on the stock market of emerging countries of Latin America: Brazil, Chile, Colombia, Mexico and Peru. The Carhart's four-factor model was utilized to analyze the performance and the total sample included 732 stocks at period of 2004 to 2013. Regarding the results, it was found that the Valuable Brands Portfolio presents lowest investment risk, suggesting that stocks of companies with valuable brands ensure lower risk investment to shareholders in these emerging markets.

Keywords: Valuable Brands. Emerging Markets. Shareholder Value.

1. Introduction

Investors are increasingly directing their attention to stocks' performance, which has exerted huge pressure on companies to deliver value (Young and O'Byrne, 2001). Hence, it has been required that the marketing sector, whose activities focus on the success of the company, product and service on the market, also view the ultimate goal to be contributing to shareholder return (Brodie *et al.*, 2002; Day and Fahey, 1988; Gruca and Rego, 2005; Oliveira, 2009; Srivastava *et al.*, 1998). Furthermore, the sectors of marketing and finance in a company must work systematically to achieve the ultimate goal of maximizing shareholder returns (Srivastava *et al.*, 1998).

At the same time, an important change has been occurring in the economy, characterized by a greater degree of importance being given to intangible assets over traditional physical assets (Zanini *et al.*, 2010). According to Lev (2004) and Reina *et al.* (2010), it is common nowadays to find companies with a higher value in terms of intangible assets than that of tangible goods. In many cases, intangible assets are responsible for generating significant business growth and shareholder value (Lev, 2004). As an example, the brand stands out as the main intangible asset for many organizations (Reina *et al.*, 2010).

As the brand is directly linked to the area of marketing, recognizing its role in increasing shareholder value highlights the importance and attention that the organization and those responsible for the areas of marketing and finance should give them, in order to maximize shareholder value. It is increasingly common the recognition of intangible assets in the market and they can be seen as drivers of shareholder value (Lev, 2004). However, Reina *et al.* (2010) studied companies of corporate governance at Bovespa and found that 75% of them did not have any record of brands on their balance sheets, and those that did, said that the record was done at historical cost. These findings highlight the little recognition of brand equity both by accounting and by the firms themselves.

The definition of brand equity given by Aaker (2001) involves brand awareness, brand associations, perceived quality and consumer brand loyalty. Broadly, the American Marketing Association considers that brand equity, from a consumer perspective, "is based on consumer attitudes about positive brand attributes and favorable consequences of brand use" (AMA, 2015).

Although there is a growing recognition of brand equity importance, it is necessary to accrue more empirical evidence relating brand equity and generation of shareholder value. However, several efforts have been made to measure brand equity. Examples of such methodologies developed by companies and brand valuation institutes, within the international scenario, include those utilized by Brand Finance, Forbes, Interbrand and Millward Brown, who publish rankings of the most valuable brands.

This scenario, in which the brand is hypothetically recognized as an intangible asset that can maximize shareholder value, encourages the academy to study the association between brand equity and shareholder value in order to contribute to our understanding of this topic. Thus, studies about the financial performance of companies whose brands are considered valuable—by rankings of the most valuable brands, published by companies and brand valuation institutes—are important, mainly to evaluate whether these companies indeed stand out in comparison to others on the market.

The growing recognition of the association between brand equity and creation of shareholder value can be seen in studies such as Billet *et al.* (2014); Dutordoir *et al.* (2015); Ghani *et al.* (2012); Johansson *et al.* (2012) e Luo *et al.* (2013). Asset pricing models stand out among the methodologies utilized in these studies to examine the association between brand equity and creation of shareholder value. In addition, the emerging countries market would be a potential market to explore using this methodology, given the predominance of the developed countries market in those studies.

The vast number of changes in technology over the last forty years, mainly related to information and communication, have contributed to the internationalization of capital and industrial production (Pinazo and Piqué, 2011), supporting the development of emerging markets, including the economic growth of emerging countries in Latin America in recent years, according to data on stock market performance provided by Morgan Stanley Capital International (MSCI, 2015), which tracks the performance of stock exchanges over the last 15 years.

This study proposes a performance comparison, in terms of risk and return in the stock market of the emerging countries of Latin America, by evaluating the portfolio of companies with recognized brand equity in relation to portfolios of companies listed on the stock exchanges of these countries. In this study, the term portfolio is considered "a collection of company shares and other investments that are owned by a particular person or organization" (Cambridge, 2014).

The financial model proposed by Carhart (1997), which incorporates Fama and French (1993) model, will be employed in this research to evaluate portfolio risks and returns, improving the brand equity literature published earlier about Latin America companies and Stock Market, as the Brazilian studies – e.g. Ghani *et al.* (2012), Ghani *et al.* (2011), Oliveira (2009), Oliveira *et al.* (2010), Oliveira and Luce (2009) – which focus on other financial models – e.g. Fama and French (1993).

Although there are studies about brand equity of Brazilian companies, we have not found studies that associate valuable brands with the creation of shareholder value in other emerging countries in Latin America - according to the classification of the MSCI (2015): Chile, Colombia, Mexico and Peru. We also have not found studies analyzing the Latin American context as a whole. This theme is applied to emerging countries, especially in Latin America, showing originality and innovation in the development of research in this scenario.

It is important to mention that Fehle *et al.* (2008), Johansson *et al.* (2012), Madden *et al.* (2006) and Oliveira (2009) also analyze the relationship of brand equity and shareholder value. However, these studies focus on only one market, the U.S. stock market - Fehle *et al.* (2008), Johansson *et al.* (2012) and Madden *et al.* (2006), or the Brazilian stock market – Oliveira (2009). The present study takes a step forward by observing stock markets of more than one country, analyzing the whole region of emerging countries of Latin America, which has particular characteristics of emerging markets.

The following section provides an explanation of methodology, especially regarding data collection, database structure (portfolios construction), Carhart's four-factor model and data analysis. The following sections present the empirical results of the study. The paper concludes by outlining final considerations, limitations of this research and suggestion for future studies.

2. Material and methods

This study aimed to compare the performance, in terms of risk and return in the stock market of emerging countries of Latin America, more specifically of portfolios of companies with the most valuable brands and portfolios of companies listed on the stock exchanges of these countries.

2.1 Data

The data collected in Economatica used to calculate the model variables, were: (1) the monthly closing price of the stocks; (2) the quantity of stocks outstanding monthly; (3) the monthly market value of the stocks; (4) the annual value of net worth of companies with stocks traded on the major stock exchanges of the countries (or of companies with at least most of its share capital controls in the countries studied); and (5) the monthly fees SELIC (Brazil), TIP (Chile), TIB (Colombia), Cetes (Mexico) and TA (Peru) to represent the risk-free rates by country.

To conduct the investigation, the data necessary to calculate the variables were collected in the Economatica database and temporal regressions by stepwise method of each portfolio were estimated using SPSS.

The sample is composed of the Latin American shares of companies from Brazil, Chile, Colombia, Mexico and Peru with the major part of its capital stock control in countries with liquid stocks traded on the respective Stock Exchanges. The period analyzed was 120 months, from January of 2004 to December of 2013, totaling 120 observations for each of 732 stocks.

2.2 Database structure: portfolios

The stocks must have negotiations for at least 40% of the period analyzed to be included in the sample. For the portfolio formation, the type of action with higher business volume in the analyzed period will be observed, for example, only the most liquid share for each company (Caselani and Eid Jr., 2008).

In this study, the valuable brands considered were those presented in the Most Valuable Latin America Brands in the Millward Brown's reports (Millward Brown, 2012, 2013, 2014). The database structure for this study involves three portfolios, shown at Table 1.

Table 1 – Latin America portfolios formation

Scope	Portfolio	Formation	Total stocks	Total by country
Latin America	Latin America Valuable Brands	companies stocks' that appeared at least once in the reports of the most valuable brands	94	Brazil: 49 Chile: 10 Colombia: 10 Mexico: 19 Peru: 6
	Latin America Total Market	all stocks listed on the stock exchanges of the Latin America emerging countries	732	Brazil: 326 Chile: 165 Colombia: 37 Mexico: 111 Peru: 93
	Latin America Reduced Market	companies stocks' participating in the Latin American Total Market, excluding the stocks of Valuable Brands Portfolio	638	Brazil: 277 Chile: 155 Colombia: 27 Mexico: 92 Peru: 87

It can be seen that the Valuable Brands Portfolio was composed of 94 stocks, Total Market Portfolio of 732 stocks and Reduced Market Portfolio of 638 stocks. In addition, there is an unequal weight among countries in the sample, due to the difference in size of the markets and also in the list of valuable brands.

2.3 Carhart's four-factor model

The four-factor model of Carhart (1997) uses the three-factor model of Fama and French (1993)—market risk premium, size premium and book-to-market premium - and incorporates the momentum factor. Fama and French's three-factor model is a consolidated model in the finance area, used in many studies, such as Shams *et al.* (2014), which studied the Tehran stock market, Shum and Tang (2005), which studied the emerging Asian markets stock market, and Tsuji (2010), which studied the Tokyo stock market. Moreover, Johansson *et al.* (2012), which studied U.S. stock market, and Oliveira (2009), studying the Brazilian stock market, utilized Fama and French's three-factor model to study the performance of valuable brands.

Carhart's four-factor model has also been used in studies with different scopes—only financial reasons—like Fama and French (2012), investigating the North American, European, Japanese and Asia Pacific stock markets, and Fama and French (2010) and Kosowski *et al.* (2006), which studied the U.S. stock market. The model has also been used to analyze

valuable brand performance in stock markets, like this present study, e.g. Fehle *et al.* (2008) and Madden *et al.* (2006), both studying the U. S. stock market.

The Carhart model (1997), presented below, posits a relationship between expected return of a stock and its risk, measured by its exposure to four risk factors: global return market; difference between small and large firm returns; difference in returns between firms with high book-to-market and low book-to-market; and the momentum factor.

$$R_{i(t)} - RF_{(t)} = \alpha_i + \beta_{mi}[RM_{(t)} - RF_{(t)}] + \beta_{si}[SMB_{(t)}] + \beta_{hi}[HML_{(t)}] + \beta_{wi}[WML_{(t)}] + e_{(t)}$$

In the equation, the $R_{i(t)}$ (monthly return of each portfolio formed) is found by weighing the monthly returns of each share by value of each share of the market in relation to the market value of the portfolio. For the $RF_{(t)}$ (risk-free rate), the proxy will be SELIC to Brazil, TIP to Chile, TIB to Colombia, CETES to Mexico and TA to Peru. The $RM_{(t)}$ (market risk premium) is given by the closing share price in the month of the closing price of the share in the prior month, adjusted by dividends, minus one.

The $SMB_{(t)}$ (size premium) is calculated monthly by the difference between the simple average of monthly returns of the three major portfolios and the simple average of the monthly returns of three smaller portfolios. The $HML_{(t)}$ (monthly premium for book-to-market) results from the difference between the simple average of the monthly returns of the top three portfolios and the simple average of the monthly returns of the three lowest portfolios. The $WML_{(t)}$ (momentum premium) is given by the return on a portfolio weighted zero-investment, buying "winners' shares" and selling "losers' actions", such as the average return on the two high prior return portfolios minus the average return on the two low prior portfolios return. And finally $e_{(t)}$ is the residue of the model.

As mention in the database structure section, the portfolios include data of the Brazilian, Chilean, Colombian, Mexican and Peruvian stock markets. Hence, all variables are estimated based on data from all of these countries. Figure 1 shows the methodological steps of this research.
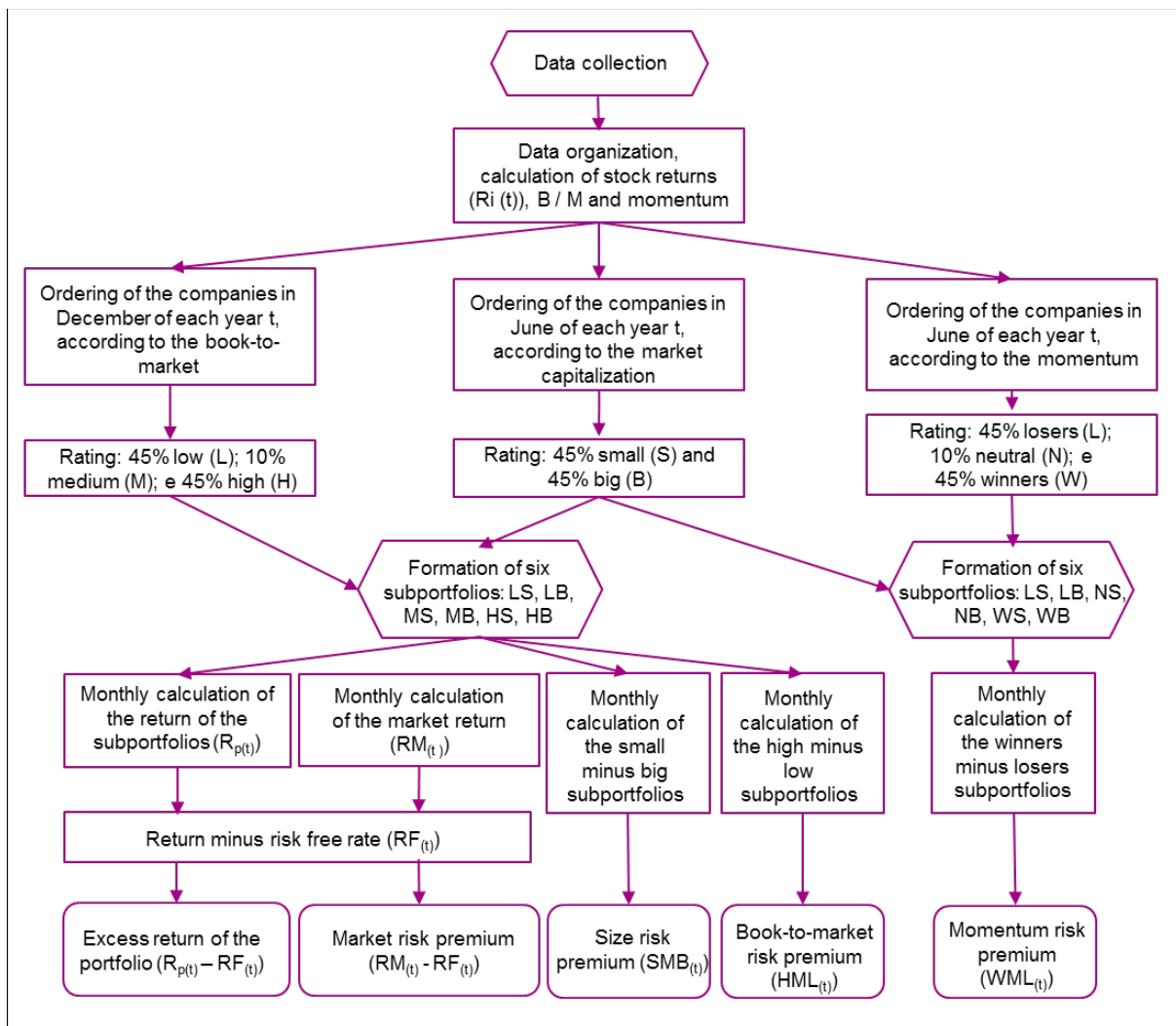
Figure 1 – Calculation of variables of Carhart's four-factor model.

2.4 Data Analysis

Figure 1 shows that, at the end of each June from 2004 to 2013, each of the three portfolios were divided in two size groups, small stocks and big stocks, and the momentum in three size groups, losers, neutral and winners. Also, at the end of each December from 2004 to 2013, each of the three portfolios was divided in three book-to-market groups, low stocks, medium stocks and high stocks. The breakpoints are the 45th and 55th percentiles of market cap. The matching size and B/M groups form six subportfolios to calculate the factors of model except momentum, which was calculated from the matching size and momentum groups that form another six subportfolios.

3. Results and discussion

3.1 Descriptive Statistics

Table 2 presents the descriptive statistics (mean, median, standard deviation and coefficient of variation) of the model variables for the three portfolios.

Table 2 - Summary statistics of variables by Latin America Portfolio

	Rp-RF	RM-RF	SMB	HML	WML
Valuable Brands					
Mean	-.01669	-.01623	-.00639	-.00648	-.00172
Median	.06745	.06722	-.00549	-.00749	-.00133
Std dev	.76984	.77069	.019035	.021164	.00996
Coef var	-4612.42412	-4749.62262	-297.688	-326.812	-578.097
Total Market					
Mean	-.01636	-.01623	-.00807	-.00593	.010095
Median	.06777	.06722	-.00912	-.00313	.011276
Std dev	.77054	.77069	.022648	.022769	.022336
Coef var	-4709.18508	-4749.62262	-280.753	-383.854	221.2586
Reduced Market					
Mean	-.01689	-.01623	-.00786	-.00434	.010919
Median	.06878	.06722	-.00947	-.0025	.010613
Std dev	.77129	.77069	.021174	.018588	.021635
Coef var	-4567.33853	-4749.62262	-269.519	-428.048	198.1354

Table 2 shows negative means and positive medians for the excess return and similar values in the three portfolios, but the Total Market Portfolio is distinguished by presenting the highest mean (-.01636), with a median .06777, followed by the Valuable Brands Portfolio mean (-.01669) and median (.06745) and Reduced Market Portfolio mean (-.01689) and median (.06878). Therefore, the Reduced Market Portfolio presented the highest median though it had the lowest mean.

However, it can be noted that the average excess return in the three portfolios was lower than the average for market risk premium (-.01623), which showed a lower median (.06722) relative to them (Table 2). That is, on average, the portfolios had lower returns than expected by the market of emerging countries in Latin America.

Also in relation to excess return, the Valuable Brand Portfolio had the lowest standard deviation (.76984), followed by the Total Market Portfolio (.77054) and the market risk premium (.77069); the Reduced Market Portfolio had the highest standard deviation (.77129).

Regarding size premium, it can be highlighted that the Valuable Brands Portfolio had a higher mean (-.0064) and median (-.0055) and lower standard deviation (.0190) compared to the other portfolios, which also had negative means. The negative size premium mean indicates that, on average, stocks of companies with the highest market value also had higher returns in the sample, but the lowest absolute value of the Valuable Brands Portfolio mean indicates that this relationship was weaker in this portfolio.

Another factor analyzed, the book-to-market premium, showed negative means for the three portfolios, with the highest absolute values of mean (-.00648) and median (-.00549) in the Valuable Brands Portfolio. Negative values indicate that on average, stock returns of companies with more intangible assets were higher than the stock returns of companies with fewer intangible assets; and the highest absolute value in the Valuable Brands Portfolio indicates that this relationship was stronger in this portfolio.

It is noteworthy that the momentum premium behaved differently in the Valuable Brands Portfolio, in terms of mean (-.0017) and median (-.0013), both negative, while in the other portfolios it presented positive coefficients. This finding may be associated with a lower average stock return of actions considered winners than the average stock return for those considered losers in some months.

In addition, Table 2 shows a high level of the coefficient of variation in all variables and portfolios, indicating that all variables have high dispersion and consequently behave heterogeneously over the period analyzed.

Table 3 presents the descriptive measures of the contribution of each of the five countries for variable excess return in each portfolio in Latin America: Valuable Brands, Total Market and Reduced Market, respectively.

Table 3 - Descriptive measures of the country contribution of excess return by Latin America Portfolio

	Brazil	Chile	Colombia	Mexico	Peru
Valuable Brands					
Mean	.016687018	-.058963309	.007021181	.016855652	.001708932
Std dev	.068470211	.745092417	.068784007	.107537419	.016728590
Coef var	4.103202384	-12.63654341	9.796643019	6.379902508	9.788914092
Total Market					
Mean	.016528118	-.057896607	.006306357	.016162768	.002536911
Std dev	.064375471	.744868485	.068352741	.106777829	.016965182
Coef var	3.89490630	-12.86549460	10.83870450	6.60640732	6.68733881
Reduced Market					
Mean	.015696916	-.056839428	.005430654	.015472044	.003333100
Std dev	.059606697	.744687366	.068024776	.105963574	.017842450
Coef var	3.797350935	-13.10159844	12.52607389	6.848712255	5.353109226

In relation to average excess return, observing the results presented in Table 3, it is possible to note that the mean in Brazil, Colombia and Mexico is higher in the Valuable Brands Portfolio (Table 3) than in the others. On the contrary, Chile and Peru present the lowest average excess return in the Valuable Brands Portfolio, with higher average excess return in the Reduced Market Portfolio.

The Latin America market return (observing the five countries in the sample) presents a negative mean and the highest variation in the Chilean stock market when compared to the other countries, which have positive means.

3.2 Time-series regressions: application of Carhart's four-factor model to LATAM Portfolios

After calculating model variables, their normality was verified. All model variables were normally distributed (sig> .05) in the Valuable Brands, Total Market and Reduced Market portfolios. The next step was to run regressions of each portfolio, using the stepwise method in the SPSS software. After this, tests were performed to check the regression assumptions also using SPSS, which were satisfactory, except for evidence of positive autocorrelation in the errors indicated by the Durbin Watson test, a result seen in most economic time series (Gujarati and Porter, 2008).

After checking regression assumptions, we proceeded to analyze the results of the regressions for each portfolio. The F test proved that at least one of the model's independent variables has an effect on the dependent variable models for the three portfolios (sig = 0). The other regression results are presented in Table 4.

Table 4 - Carhart regressions by portfolio

Portfolio	Adj R^2	α	Market β	SMB β	HML β	WML β
Valuable Brands						
Coef.	.9998271	-.0018103	.9984451*	.001991	-.2039753*	-.000460
T-mean		.0638341	.0000000	.753349	.0000090	.794363
Total Market						
Coef.	.9999996	.0000331	.9999065*	.000276	.0287682*	-.000088
T-mean		.4816882	.0000000	.169081	.0000000	.427846
Reduced Market						
Coef.	.9997454	.0009336	1.0013241*	.2002168*	-.000570	.003569
T-mean		.4385789	.0000000	.0002979	.861707	.390457

*significant to .05 level

The adjusted coefficient of determination in the three portfolios was very close to 1, indicating that almost all excess return of variation can be explained by the variation of the factors, with the best coefficient for the Total Market Portfolio, followed by the Valuable Brands Portfolio and the Reduced Market Portfolio.

The market risk premium was significant to explain the regression models of all portfolios. The book-to-market premium was significant for two models and the size premium was significant for one model, capturing variation not explained by the market model.

It is noteworthy that the beta of the momentum premium (β WML) was not significant (p <.05) in any portfolio, as occurred in the studies of Fehle *et al.* (2008) and Madden *et al.* (2006), which also used the Carhart's four-factor model. Thus, the influence of returns in prior periods was not shown to predict returns in the sample.

The Valuable Brands Portfolio and Total Market Portfolio regression models were composed of market risk premium and book-to-market premium and the Reduced Market Portfolio regression was composed of market risk premium and size premium.

It can be noted in Table 4 that the intercept (α) was not significant in any of the regression models, as occurred in Billet *et al.* (2014), Dutordoir *et al.* (2015), Fehle *et al.* (2008), Johansson *et al.* (2012), Oliveira (2009) and Oliveira *et al.* (2010). This result was expected because of the subtraction of the risk-free rate return of the portfolio excess return (dependent variable of the model) and the market risk premium (independent variable). As the intercepts were not significant, we cannot evaluate whether the portfolios reached the expected return.

The market risk premium beta (β Market) of Valuable Brands (.9985) and Total Market (.9999) were lower than 1, demonstrating a lower investment risk than the market. It is noteworthy that despite the small difference, the Portfolio Valuable Brand had the lowest beta, indicating that it has the lowest investment risk among the portfolios. In contrast, the Reduced Market Portfolio showed a beta higher than one (1.0013), indicating that it provides greater investment risk than the market.

According to Table 4, the size premium beta (β SMB) was significantly different from zero only for the Reduced Market Portfolio and presented a positive value (.2002), possibly indicating that returns of the portfolio covary more with other stocks classified as small than with actions considered large (Madden *et al.*, 2006), when it is considered that the Reduced Market Portfolio consists mostly of small companies.

The book-to-market premium beta was significant ($p<.05$) for the Valuable Brands and Total Market portfolios indicating that this factor complements the excess return explanatory power in these portfolios (see Table 4). The book-to-market premium beta was negative (-.2040) in the Valuable Brands Portfolio and positive (.0288) in the Total Market Portfolio, expected results as valuable brand companies have lower book-to-market than non-valuable brand companies (Madden *et al.*, 2006).

3.3 Results from similar studies

In order to compare the results of this study in the Latin American stock market with the results of similar studies, the regression results of seven other studies were analyzed, five from the US stock market and two from the Brazilian stock market.

Three studies used the four-factor model of Carhart (1997)—this study, Fehle *et al.* (2008) and Madden *et al.* (2006)—while five other studies—Billet *et al.* (2014), Dutordoir *et al.* (2015), Johansson *et al.* (2012), Oliveira (2009) and Oliveira *et al.* (2010)—used the three-factor model of Fama and French (1993), which does not include the momentum premium beta.

Table 5 shows the results of an application of the Fama and French three-factor model or the Carhart's four-factor model in this study and other studies that also analyzed the performance of companies with valuable brands in the stock market.

Table 5 - Result regressions by the different studies

Portfolio	α	Market β	SMB β	HML β	WML β
This study: Latin America stock market (2004-2013)					
Valuable Brands	-.002	.998*	.001991	-.204*	-.000460
Total Market	.000	1.000*	.000276	1.000*	-.000088
Reduced Market	.001	1.001*	0.200*	-.000570	.003569
Billet et al. (2014): U.S. stock market (2000-2006)					
High Familiarity and Prestige	-.000	.77*	-.260*	.100	
Low Familiarity and Prestige	-.001	1.180*	-.255	.117	
Dutordoir et al. (2015): U.S. stock market (2001-2012)					
BVCHANGE>0	.002	.907*	-.036	-.040	
BVCHANGE<0	.003	1.330*	.031	-.221	
Total Market	.002	1.057*	-.013	-.154*	
Fehle et al. (2008): U.S. stock market (1994-2006)					
Valuable Brands	.23	.85*	-.46*	-.52*	-.010
Reduced Market	−0.05	1.04*	.11*	.13*	.004
Johansson et al. (2012): U.S. stock market (2008)					
Valuable Brands		-.601*	.221	-.243*	
Madden et al. (2006): U.S. stock market (1994-2000)					
Valuable Brands	.57*	.85*	-.36*	-.36*	-.00
Total Market	.00	1.00*	.00	.00	.00
Reduced Market	-.25*	1.07*	.18	.18	.01
Oliveira (2009): Brazil stock market (2000-2008)					
Valuable Brands	.012	.766*	.091	-2.760*	
Total Market	.022*	.944*	.270**	.289	
Reduced Market	.023*	.971*	.124	1.284*	
Oliveira et al. (2010): Brazil stock market (2006-2007)					
Valuable Brands	-.006	.885*	-.148	-.851*	
Total Market	.016*	.904*	-.347	.632*	
Reduced Market	.019	.923*	-1.008	1.410	

*significant to .05 level

Source: Billet et al. (2014), Dutordoir et al. (2015), Fehle et al. (2008), Johansson et al. (2012), Madden et al. (2006), Oliveira (2009) & Oliveira et al. (2010)

Table 5 shows that the market risk premium was significant in all portfolios of the studies analyzed and the portfolios composed of valuable brands presented lower investment risk than other portfolios in all studies, as corroborated by this study.

It is noteworthy that in Madden *et al.* (2006), which analyzed the US stock market monthly from 1994 to 2000, the Valuable Brands Portfolio not only had the lowest investment risk, but also had a higher return than the other portfolios,

offering economically counterintuitive results. Financially, it is assumed that a low-risk investment generates low return because the risk is compatible with the return. Thus, it is expected that the increase in investment risk proportionally raises the return on the investment (Fonseca, 2009), but the study of Madden *et al.* (2006) showed that valuable brands can offer a low investment risk and still a higher return than investors expected, maximizing shareholder value. However, in this study as well as the other studies analyzed, the same result was not found, including in the other study of Madden (Fehle *et al.*, 2008).

In the present study, we could not analyze the return on the portfolio composed of valuable brands in the Latin American stock market because the intercept was not significant. The same occurred in Billet *et al.* (2014), which examined the US stock market on a monthly basis from 2000 to 2006, Dutordoir *et al.* (2015), which examined the US stock market monthly 2001 after 2012, Fehle *et al.* (2008), which examined the US stock market on a monthly basis from 1994 to 2006, Oliveira (2009), which analyzed the Brazilian stock market monthly from 2000 to 2008, and Oliveira *et al.* (2010), which analyzed the Brazilian stock market from July 2006 to June 2007.

It can be supposed that in Johansson *et al.* (2012), which analyzed 50 valuable brands in the North American market from September to December 2008, there was also not a significant intercept, given that the authors did not present the intercept in their results.

It is interesting to note from Table 5 that the size, the book-to-market and the momentum premium betas were significant only in some portfolios in the same study. The three studies that reported significant size premium in the portfolio composed of valuable brands—Billet *et al.* (2014), Fehle *et al.* (2008) and Madden *et al.* (2006)—presented a negative beta (β SMB) in this portfolio. The negative value is to be expected in beta size premium, as this portfolio is composed of relatively large companies, and indicates that more returns covary with other actions considered big than with stocks considered small (Madden *et al.*, 2006).

It can be noted in Table 5 that the present study and the other papers which, found significant book-to-market in the Valuable Brands Portfolio, presented negative beta (β HML)—Fehle *et al.* (2008), Johansson *et al.* (2012), Madden *et al.* (2006), Oliveira (2009) and Oliveira *et al.* (2010)—showing evidence that companies with valuable brands have a lower book-to-market than companies with lower or no brand value (Madden *et al.*, 2006).

The last factor shown in Table 5 was the momentum premium, which was not significant in any portfolio of the three studies using Carhart's four-factor model—this study, Fehle *et al.* (2008) and Madden *et al.* (2006). Thus, it was not possible to analyze the effect of persistence of short-term returns.

4. Conclusions

As there are still no studies evaluating the association between valuable brands and the creation of shareholder value in the context of emerging Latin American countries, except for Brazil, the implementation of the Carhart (1997) model is considered relevant in this increasing scenario in the world market.

Note that the return of shareholder value is a concern in vogue in enterprises. Hence, studies about brand equity and other intangible assets are a relevant theme to be explored. They may contribute to company performance as well as to the academy. Although this sort theme has been researched in developed countries, it is quite incipient in Latin America. It is worth noting that not only the brand, but also marketing activities deserve greater attention from the academy and businesses, due to the fact that marketing activities reflect the market and often companies fail to measure their return and underuse their potential.

In this study, the Valuable Brands Portfolio presents the lowest investment risk, confirming the evidence already empirically encountered in Billet *et al.* (2014), Dutordoir *et al.* (2015), Fehle *et al.* (2008), Johansson *et al.* (2012), Madden *et al.* (2006), Oliveira (2009) and Oliveira *et al.* (2010) studies, in which valuable brands ensure lower risk investment to shareholders.

However, the return in this paper could not be analyzed, thus while it is not possible to verify whether the investment in Latin America Valuable Brands Portfolio in the period of 2004-2013 maximized shareholder return, it is possible note that it offered the lowest investment risk. Similar results were found in Billet *et al.* (2014), Dutordoir *et al.* (2015), Fehle *et al.* (2008), Johansson *et al.* (2012), Oliveira (2009) and Oliveira *et al.* (2010) studies, which also did not have a significant intercept for regressions in the Valuable Brands Portfolio and therefore did not analyze the returns.

Although a return analysis on portfolios by Carhart's four-factor model was not possible, in relation to the average excess return of portfolios, it can be noted that three of the five countries of the emerging markets in Latin America—Brazil, Colombia and Mexico—had higher excess return on average in the Valuable Brands Portfolio.

Thus, the results of this study are intended to highlight the relevance and instigate further work on the relationship between brand equity and shareholder value, which may be further explored from a consensus method for measuring brand equity. One option would be to compare the results of similar studies using ranking of the most valuable brands created by different institutions.

Among the study's limitations we can point out the lack of a unique risk-free rate representing all Latin American countries, as well as lack of access to a list of valuable brands in Latin America in all the years analyzed.

It is suggested that future studies examine different periods and if possible, separately, for the stock markets of Latin America in terms of risk and return of valuable brands using the Carhart's four-factor model, which can be done from complete rankings of brand value by country. It is also suggested the use of other financial models to compare the results

from other methodologies, such as study events, which may be possible due to a higher frequency of publication of valuable brand rankings in Latin America.

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