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The portfolios with strong brand value: More returns? Lower risk?

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Abstract

This study focuses on the brand value-shareholder return relationship using the approach of Madden et al. (2006) based on Aaker (1991) and compares "Strong Brands Portfolio", created through brand values in "Turkey's Most Valuable Brands" annual report of Brand Finance published between 2007-, 2015, within alternative benchmark portfolio in terms of risk and return. In this context, although the analysis made by different weighting methods over asset pricing models has found that a portfolio of strong brands may provide significant abnormal returns with significantly lower market risk for shareholders, it is understood that the brand values published by Brand Finance are not fully priced in the Turkish stock market by considering the magnitude of that value.

1. Introduction

The financial impact of marketing activities has attracted researchers' attention over the years. With the recognition of the importance of the concept of intellectual capital, branding activities, an element of intellectual capital, and their impact have become an issue that concerns not only marketing managers but also financial managers. Brand is defined as a name, term, mark, design or combination of these which identifies the producer or seller of a product or service (Kotler & Armstrong, 2010) and the positive attitude of consumers about brand and positive results of brand usage reveal brand equity (AMA, 2019). Brand equity is defined as the differential effect that brand knowledge has on consumer response to the marketing of that brand (Keller, 2013). In the studies of Aaker (1991; 1996), it is asserted that brand equity (brand value) creates financial benefits for firms and it is implied that brand value is an important element for firm value. Research (Bahadir, Bharadwaj, & Srivastava, 2008; Krasnikov, Mishra, & Orozco, 2009; Fischer & Himme, 2017; Mizik & Pavlov, 2018) conducted in the subsequent years also confirmed the effect of brand equity on firm value. In a more recent study, Crass, Czarnitzki, and Toole (2019) confirmed that brand equity has a long-term impact on firm performance. Many researchers agree that branding activities create long-term competitive advantage which implies superior firm value.

According to Aaker (1991), brand equity which is composed of brand loyalty, brand awareness, perceived quality, brand recall and other brand assets (such as competitive advantage) create value both for customers and firms and ultimately can provide competitive advantage (Aaker, 2009). In line with Aaker (1991), "the brand" appears to be one of the most valuable intangible asset and fundamental to the Brand Finance Global Intangible Finance Tracer GIFT, 2015 report carried out on 58,000 companies quoted on 120 stock

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exchanges. According to the report, strong brands create high brand equity on a consumer basis; therefore, it pays a certain premium to the business's products or services and allows them to sell at a higher volume than their competitors; increasing brand loyalty ultimately increases firm value (BrandFinance® Global Intangible Finance Tracker, 2015).

The idea, suggested by Aaker (1991; 1996), that brand value creates financial benefits for firms is strengthened by the strong positive relationship between the brand equity and stock returns that is revealed in Aaker and Jacobson (1994) and becomes a basis for studies such as Madden, Fehle, and Fournier (2006) and Fehle, Fournier, Madden, and Shrider (2008) which confirm the finding of Aaker and Jacobson (1994). However, in the finance literature, in the theoretical framework of empirical findings of studies determining a positive relationship between brand value and stock or shareholder returns, it is argued that intangible assets cannot be fully priced in inefficient capital markets. More clearly, the market value of the company shares reflects the value of the net assets of this company; but the relationship between asset values and stock prices is relatively visible if the assets are mostly physical assets such as plant and equipment. Despite that, in modern economies firm value can be substantially reflected by intangible assets such as brand names. Equity valuations are difficult in a situation where a firm's intangible assets are in significant amounts but the information on these assets is not reported or underreported on financial statements of the firm (Chan, Lakonishok, & Sougiannis, 2001). Therefore, if a capital market is not efficient, the market values of stocks may not fully reflect the value of intangible assets (Fama, 1970; Malkiel, 2003). In this case, it can be expected that the size of intangible assets has an effect on the stock returns of those firms. In line with that view, Hall (2001), who calculates the net value of a firm's intangible assets by reducing the value of tangible assets (plant, equipment and inventory) from total financial claims, argues that changes in the inferred values of intangible assets and stakeholder claims account for a significant portion of the large movements in stock market values. Also, Zhang (2004) remarked that the companies with high intangible assets must have higher stock returns than other companies because of the higher risks of their intangible assets or if these risks are not systematic, they must have equally high returns. From a different point of view, Chan et al. (2001) reveal that companies with high R&D to equity market value have high excess returns and a similar relationship exists between advertising and stock returns. Edmans (2011) suggests that employee satisfaction is positively correlated with shareholder returns and that the stock market cannot fully value intangible assets.

The findings of Hall (2001), Chan et al. (2001), Zhang (2004) and Edmans (2011) for intangible assets increase the probability that the same findings can be valid for brand value, as an important intangible asset. In this context, in literature of brand value-shareholder returns, it is observed that some studies (such as Barth, Clement, Foster, and Kasznik (1998), Madden et al. (2006), Fehle et al. (2008), Hsu, Wang, and Chen (2013), Belo, Lin, and Vitorino (2014)) support the positive relationship between high brand value and the stock or shareholder returns, confirming the mentioned studies. In addition to this relationship, other studies (e.g. Madden et al. (2006); Bharadwaj, Tuli, and Bonfrer (2011)) suggest that the higher brand value is also related to the lower risk. However, current literature on the brand value and stock or shareholder returns relationship shows insufficiency on some matters. Firstly, the number of studies in the area is relatively limited and extant studies are generally based on companies listed on the NYSE, Amex and NASDAQ. So, the brand value/ stock or shareholder returns relationship is not investigated and evaluated in terms of the different markets, especially emerging markets. Secondly, few studies in the related literature consider the companies listed on the Borsa İstanbul. Bank and Erdogan (2015) utilized annual reports of Brand Finance "Turkey's Most Valuable Brands" and confirmed that strong-brand portfolios composed from stocks of firms which are listed in Borsa İstanbul and whose brands are listed in those reports increase the shareholder returns. In another study, Bayrakdaroğlu and Mirgen (2016) confirm the positive relationship between the brand value and the stock returns in terms of the Turkish stock markets; and Basgoze, Yildiz, and Metin Camgoz (2016) point to the positive abnormal returns (above the market return) of the companies with higher brand value in the Turkish stock market. However, both studies also have some constraints. Accordingly, Bank and Erdogan (2015) only focused on the firms with high brand value and did not include the firms which are listed in Borsa İstanbul but whose brands are not listed in Brand Finance annual reports. Additionally, they only used one asset pricing model and did not assess the risk of portfolio with high brand value in their analysis. Bayrakdaroğlu and Mirgen (2016) have only focused on the individual stock returns and have not investigated the abnormal returns to shareholders through the portfolios of the firms with higher or lower brand value; on the other hand, Basgoze et al. (2016) have mostly concentrated on the relationship between brand value measures and stock performance. It is noteworthy that neither of the studies has confirmed its findings sufficiently through extensive analysis that compares the returns of portfolios generated from the stocks of the firms with higher and lower brand value or through different asset pricing models (e.g. the Fama and French (1993) three-factor asset pricing model (hereafter the FF-3 factor model)). In addition, both studies have failed to investigate the relationship between higher brand value and lower risk and have used a limited sample period (2010—2014). As a result, it is not clear yet how the brand value and stock returns/shareholder returns relationship works.

On the other hand, in recent years, it is asserted that brand has gradually become important in increasing firm value as a masstige marketing element but it is not the same in all markets. Kumar and Paul (2018) suggest that brands increase the competitive power of firms associated with mass prestige and Paul (2019) indicates that brands can reveal higher masstige value in some foreign markets. So, the findings of both studies imply that the increased masstige value of brands can reflect on firm value but this positive impact can differentiate

across markets. Eventually, that differentiation raises doubt about the validity of findings of the relationship between brand value and shareholder return across different stock markets. Therefore, reinvestigation of the brand value-shareholder return relationship in terms of different stock markets has importance for strengthening the findings of the related literature.

Based on the idea of Aaker (1991; 1996) which suggests that brand value creates a value for firms, this study aims to investigate the brand value-shareholder relationship in Borsa İstanbul regarding the deficiencies in the related literature mentioned above. This study wishes to reveal the effect of brand value on shareholder returns in an emerging market. Within this context, the study makes risk-return analysis for a portfolio of strong brands and compares them with a benchmark portfolio created (weak-brand portfolio). Initial comparisons are for portfolios based on average returns, risk and excess returns over different weighting methods. The second comparisons were made using the capital asset pricing model (hereafter CAPM) based on Sharpe (1964) and Lintner (1965) and the FF-3 factor model. It has been tested whether a portfolio of strong brands outperforms the benchmark portfolio (weak-brand portfolio). The asset pricing models applied for portfolios consisting of strong brands reveal that when the market value-weighting is followed, significant alphas are obtained relative to the benchmark portfolio and the market risk is lowered; but when the brand value-weighting is followed, the market risk is lower than other methods, although lower alphas are obtained. With the evaluation in the final stage, it has been found that the brand values published by Brand Finance are not fully priced on the market.

This study contributes to the literature in terms of the first study, which makes risk-return analysis by comparing the portfolio created by stocks of the companies which are listed on the Borsa İstanbul 100 (BIST 100) index and are the most valuable brands in Turkey with the benchmark portfolio and which uses stocks with higher brand value in Turkey. In addition, for the first time, the average correlations between the stock returns of companies with strong and weak brands are analyzed and correlated with the analysis results.

The remainder of the paper is structured as follows. Section 2 summarizes the literature and develops hypotheses, providing the background of the relationship between brand value and firm value. Section 3 describes the characteristics of the data and the methodology. Section 4 presents the empirical results. Section 5 concludes the paper.

2. The background of the relationship between brand value-firm value and hypotheses

The market value of a firm is based on the total earning power of both tangible and intangible assets. Intangible assets that increase the earning power of the firm's tangible assets are defined as any production factor or specialized resources that enable the acquisition of cash flows in excess of the return on tangible assets. They are mainly brand equity, franchises, trademarks, patents, goodwill and R&D (Simon & Sullivan, 1993). All assets covered by brand equity create value in many different and diverse forms and brand equity creates value not only for customers but also for firms (Aaker, 1996). Brand equity can attract new customers, strengthen programs that will enable older customers to buy again, and increase brand loyalty. At the same time, brand has a number of contributions that make branding an important element for firms as a factor affecting the firm's activities in the market: items of brand equity support high-level pricing; a company finds development opportunities through brand expansions; the firm provides an advantage to enter or maintain the distribution channel and, ultimately, offers the company the opportunity to have a competitive advantage that can interfere with competitors (Aaker, 2009).

On the other hand, the relationship between brand and customer reveals the concept of brand equity in terms of marketing. Brand equity is not just a concept that deals with marketing; it has also turned into an important indicator for firms as a value that affects the resources and financial structure of the company in terms of accounting and finance. Researchers took interest in the financial aspect of brand equity in the 1980s. They mostly focused on calculating brand equity with financial metrics. In the early 1990s, brand equity began to be measured from a consumer perspective. In recent literature, there are different approaches to the measurement of brand equity in the literature. In general, there are three perspectives on brand equity: consumer based, financial based and combined (Soto, 2008). Consumer based brand equity measurements focus on only consumer evaluations for branded products, while financial based measurements depend on only financial indicators from firms' financial statements, market value or stock market. Combined brand equity measurements generally performed both financially and consumer-based.

According to Aaker (1991; 1996), brand equity is a set of brand assets such as brand name awareness, brand loyalty, perceived quality and brand associations and liabilities linked to a brand's name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm's customers. According to Keller (1993), who studied consumer-based brand equity like Aaker (1991; 1996), brand equity is the differential effects of brand knowledge on the consumer response to the marketing brand. As reported by Keller (2013), differential effects for the brand come from the added value given to a product as a result of all marketing activities and brand equity provides a common ground for constructing the marketing strategies and assessing the value of a brand. While the brand equity definitions of Keller (2013) and Aaker (1991; 1996) focused on consumer responses (brand awareness, perceived brand quality, brand loyalty etc.) towards the brand, the accounting and finance literature partly concentrated on the valuation of brand equity. In this regard, Simon and Sullivan (1993), who calculated the brand value of a firm based on the market value of a company, define brand equity as an increase in cash flow for branded products relative to unbranded products. It would be appropriate to state that brand equity can be seen as a financial value obtained by interfering with the marketing of a brand by a firm (Anderson,

2007, pp. 142–143). Moreover, Silverman, Sprott, and Pascal (1999) determined the relationship between financial-focused brand equity and consumer-focused brand equity, and showed that the company's marketing efforts are reflected in the financial market. Therefore, brand-value estimates provide significant explanatory power to known brand assets, earnings estimates of the analyst and prices that increase according to these variables. Finally, brand equity that combines consumer-based and financial brand equity viewpoints is seen as a structure which considers both firms' and consumers' points of view. The fact that higher brand strength offers the company a number of benefits such as higher sales volume, lower cost, price premium, a strong consumer-focused brand can be expressed in monetary terms and can influence the brand value (Soto, 2008). This perspective gave opportunities to the consulting firms such as Interbrand, Neilsen, and Brand Finance to develop combined brand equity calculation methods that consider both consumer based and financial based criteria.

In the literature, such calculation methods draw attention to the possibility that brand equity allows stocks to rise in price and returns, and thus increase shareholder value. On the other hand, regarding this issue, Srivastava et al. (1998) also suggested a conceptual framework in related literature which indicates how the assets based on the market (brand) contribute to the financial performance of firms. This framework, as shown in Fig. 1, illustrates how the brand can affect shareholder value through its contribution to the market performance of firms.

2.1. *Srivastava et al. (1998)*

In line with Srivastava et al. (1998), it is supported by many studies that brand equity can increase the share prices and the returns and thus the shareholder value. In this scope, Aaker and Jacobson (1994) argued that information such as quality images of brands in stock markets can be used to predict firms'long-term performance expectations and they stated that the information on the quality measurement of the firm is reflected in the performance of the business in the future. Similarly, Barth et al. (1998) find a positive and significant

relationship between brand value estimates and price and returns, they also found that brand equity components had a positive effect on subjective performance measures including profitability performance, brand performance and customer value. Also, brand-value estimates are reliably reflected in stock prices. In support of Barth et al. (1998), Madden et al. (2006) have found that strong brands yield greater returns to shareholders regarding the positive linkages between stock return and brand value. Yeung and Ramasamy (2008) stated that there is a significant relationship between the brand value and the performance of the brand owner firm in the stock market. Fehle et al. (2008) indicated that companies with strong brands have above-average returns. Hsu et al. (2013) declared that brand portfolio creates a significantly positive risk adjusted alpha and has the ability to select the proper stock. According to Belo et al. (2014), more brand capital intensive firms have higher average stock returns than less brand capital intensive firms. On the other hand, Bank and Erdogan (2015) suggested that portfolios with strong brand value increase shareholder returns. In addition, Bayrakdaroğlu and Mirgen (2016) indicated that there is a significant and positive relationship between brand value and stock returns and Basgoze et al. (2016) that the stocks of firms with higher brand value earned positive abnormal returns. In the end, in particular, the findings of these studies refer to an investigation into whether brand value could increase the stock price and return, and thus shareholder value and help to establish the first hypothesis of the current study:

Hypothesis 1. A portfolio of firms with higher brand value yields more returns than a portfolio of firms with lower brand value for shareholders.

Madden et al. (2006) and Fehle et al. (2008) benefited from the FF-3 factor model or the FF-3 factor model plus momentum factor (Carhart, 1997) to investigate the brand value-shareholder return relationship. In this context, Madden et al. (2006) used the FF-3 factor model to control the factors of size and book-to-market and Fehle et al. (2008) used the FF-3 factor model plus momentum factor (Carhart, 1997) to control the momentum factor. According to both studies, when

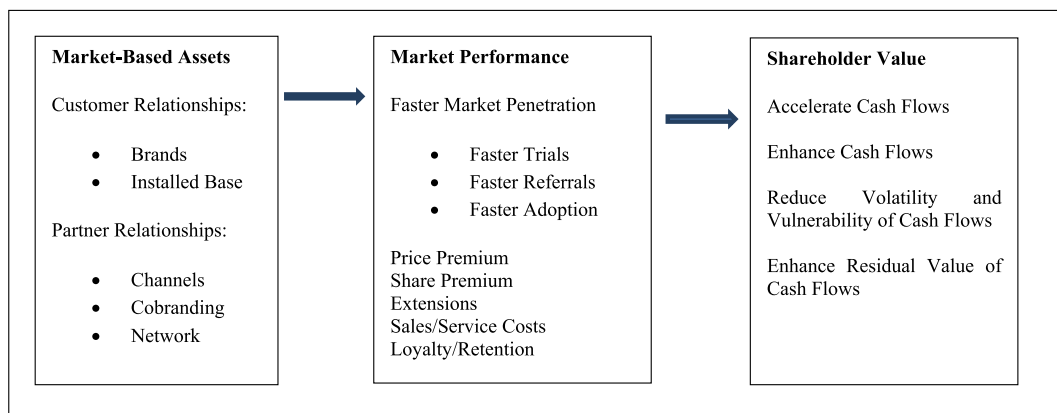| Market-Based Assets	Market Performance	Shareholder Value
Customer Relationships:	Faster Market Penetration	Accelerate Cash Flows
• Brands	• Faster Trials	Enhance Cash Flows
• Installed Base	• Faster Referrals	
	• Faster Adoption	Reduce Volatility and Vulnerability of Cash Flows
Partner Relationships:	Price Premium	
• Channels	Share Premium	Enhance Residual Value of Cash Flows
• Cobranding	Extensions	
• Network	Sales/Service Costs	
	Loyalty/Retention	

Fig. 1. Linking market-based assets to shareholder.

risk is controlled, a portfolio composed of stocks of firms with high brand value yields more significant abnormal returns than a portfolio composed of stocks of firms with low brand value. The findings of both studies help to establish the second hypothesis of the current study:

Hypothesis 2. A portfolio of firms with higher brand value yields more significant abnormal returns than a portfolio of firms with lower brand value for shareholders.

On the other hand; it is also an important issue to increase the expected returns for the firms as well as to reduce the risk that affects the firm value adversely (Fama & French, 1993). Increasing the value of investors' holdings, especially for a firm, can be achieved by reducing the company's cash flow risk (Srivastava, Shervani, & Fahey, 1998). In terms of marketing literature, brand value reduces consumers' perceived risk. In particular, the perceived high quality of a brand creates a lower risk perception for consumers (Aaker & Keller, 1990). For this reason, the brand is not merely an asset for firms; at the same time it is an asset that also increases the value of the company and the firm accordingly (Srivastava et al., 1998). In addition, increased brand equity will increase price premiums, which means higher pricing (Aaker, 1991, 1996; Ailawadi, Lehmann, & Neslin, 2003; Hoeffler & Keller, 2003). The brand reduces price elasticity against price increases, provides better perception of product performance, increases customer loyalty and boosts the company's defensive power against competitive marketing actions and marketing crises (Hoeffler & Keller, 2003). As a result; it can be deduced that a company with strong brand equity can be protected against the fluctuations in the market and thus its systematic risk can be lower (Frieder & Subrahmanyam, 2005; McAlister, Srinivasan, & MinChung, 2007; Veliyath & Ferris, 1997). In this regard, while Madden et al. (2006) found that strong brands create value for shareholders by yielding higher returns with lower risk, Bharadwaj et al. (2011) argued that unexpected changes in brand quality may have a negative impact on shareholder wealth, as they are positively related to systematic risk changes. It also stated that firms have increased stock returns and lowered systemic riskunless they trade off increases in the current period earnings for changes in brand quality. The view is also supported by Rego, Billett, and Morgan (2009) which suggested that consumer based branding equity reduces the upside and downside of the systematic risk. In this context, based on the findings of Madden et al. (2006) and Bharadwaj et al. (2011), the third hypothesis of the current study is established as follows:

Hypothesis 3. A portfolio of firms with higher brand value is less risky than a portfolio of firms with lower brand value.

2.2. Data and methodology

An acceptable measure must be defined for strong brand in order to be able to test the hypotheses developed in the

previous section (Fehle et al., 2008). In this regard, brand values published by an independent organization by following Madden et al. (2006) and Fehle et al. (2008) benefited this study. Basically, there are several organizations that have gained world-renowned brand value calculations and are generally accepted on the market for brand evaluation consulting. These organizations present global, national and/or sectoral brand value calculations annually to the public. Interbrand, EquiTrend, Millward Brown and Brand Finance are among the most well-known organizations. Brand Finance, which was established to build bridges between marketing and finance in 1996, is one of the world's leading brand valuation consultancy organizations. Brand Finance is also a brand valuation consultancy firm in 23 countries including the USA, UK, Canada, Netherlands, France, Hong Kong, Singapore, India and Turkey. Brand Finance Turkey 100 reports have been published every year since 2007 and give Turkey's most valuable 100 companies a ranking according to brand value (Brand Finance Brochure, 2015). In this regard, brand values in the The Most Valuable Brands of Turkey (Brand Finance Turkey 100, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015) annual reports published by Brand Finance in the current study and firms listed in the BIST 100 index and also listed in the annual reports of Brand Finance over the period from January 2007 to May 2015 are included in the "Strong-Brand Portfolio"; but, firms listed in the BIST 100 index but not listed in the annual reports are included in the "Weak-Brand Portfolio".[1] Companies listed in annual reports but with multiple share classes or with incomplete data were not included in the analyses in order to obtain more reliable results. In the next step, the strong and weak-brand portfolios are value weighted following Madden et al. (2006) and also equal weighted following Edmans (2011) and rebalanced annually. Within this regard, monthly weight of each company in value-weighted portfolios represents the market capitalization (market value of all outstanding common stocks) of the company relative to the market capitalization of all companies in the relevant portfolio. Moreover, following Madden et al. (2006), brand value-weighted portfolios were also constructed in order to show whether brand portfolio returns were influenced by weighting based on brand value compared to alternative weighting methods.

In order to make risk and return evaluations for the strong and weak brand portfolios, the OLS regression analyses are run on the Sharpe-Lintner CAPM and the FF-3 factor model. The CAPM of Sharpe (1964) and Lintner (1965) point to the birth of asset pricing theory and is based on the mean-variance portfolio model of Markowitz (1952, 1959). The appeal of CAPM is based on the fact it has fairly simple logic and intuitively pleasing assumptions about how the risk is measured and the relationship between expected return and

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[1] It is assumed that the portfolios are held annually and rebalanced every year.

risk (Fama & French, 2003). In this context, the Sharpe-Lintner CAPM risk-return relationship is expressed as:

$$E[R_i] = R_f + \beta_{im}(E[R_m] - R_f) \quad i = 1, 2, n \quad (1)$$

According to the equation above; R_M is the return of the market portfolio; R_i is the return of asset i and the expected return on any asset i is the sum of the risk-free interest rate (R_f) and a risk premium (beta risk of asset i in market portfolio (m)* price per unit of beta risk $(E[R_m] - R_f)$ (market risk premium)). β_{iM} denotes the risk of covariance of asset i in portfolio M (Fama & French, 2003) and is formulated as follows (Fama & French, 2003):

$$\beta_{im} = \frac{Cov(R_i, R_m)}{\sigma^2(R_m)} \quad (2)$$

On the other hand, Sharpe-Lintner CAPM states that the expected value of excess return of an asset (the asset's return minus the risk-free interest rate, $([R_{it}] - R_{ft})$ is fully explained by the expected CAPM risk premium. This emphasizes "the Jensen Alpha" that the constant term for each asset is zero in the time series regression (Fama & French, 2004).

$$R_{it} - R_{ft} = \alpha_i + \beta_{im}(R_{mt} - R_{ft}) + \varepsilon_{it} \quad (3)$$

According to Jensen (1968), if the Sharpe-Lintner risk-return relationship in equation (1) is available, the constant term in the time series regression of the "excess" return on asset i on the excess market return is zero for all assets i (Fama & French, 2003). So, this approach, based on Jensen (1968), estimates the time series regression of the portfolio and uses the constant (Jensen's alpha) to measure abnormal performance (Fama & French, 2003).

Taking into account the fact that the CAPM version based on Sharpe (1964) and Lintner (1965) cannot achieve empirical success and the empirical studies on the model found the relationship between the average return and the market betas to be flatter (the risk premium per unit of market betas is lower) than predicted by the model, the Black (1972) version of the model which accommodates a flatter average return-beta trade off appears to be more successful. But in the late 1970s, researches began to reveal variables such as size, different price ratios, and momentum, which are added to the explanation of average returns by market beta (Fama & French, 2003).

In this way, Fama and French (1996) argue that the majority of CAPM mean-return anomalies are related and captured by a three factor model (the FF-3 factor model). The model indicates that the expected return on a portfolio over the risk-free interest rate $[E(R_i) - R_f]$, is explained by the three factor sentiments of that portfolio's returns. These factors are;

i) The excess return on a broad market portfolio ($R_m - R_f$),
ii) The difference between the return on a portfolio of small stocks and the return on a portfolio of large stocks (SMB, Smalll minus big)
iii) The difference between the return on a portfolio of high book-to-market stocks and the return on a portfolio of low book-to-market stocks (HML, High minus low).

In this regard, specifically, the expected excess return of portfolio i over risk-free interest rate is formulated as follows (Fama and French, 1996, 2003):

$$E(R_i) - R_f = \beta_{im}[E(R_m) - R_f] + \beta_{is}E(SMB) + \beta_{ih}E(HML) \quad (4)$$

According to Fama and French (1996), the FF-3 factor model formulated in (4) captures most of the cross-sectional variation in average stock returns and absorbs most of the anomalies associated with CAPM. In equation (4), "$E(R_m) - R_f$", "$E(SMB)$" and "$E(HML)$" show expected premiums and betas show the slopes in the time series regression:

$$R_{it} - R_{ft} = \alpha_i + \beta_{im}[R_{mt} - R_{ft}] + \beta_{is}SMB_t + \beta_{ih}HML_t + \varepsilon_{it} \quad (5)$$

Under the explanations above, both equations (3) and (5) were run for strong and weak brand portfolios constructed with different weighting methods in the present study and the resulting alpha and beta values are interpreted. Following Madden et al. (2006), positive alpha values in the analyzes indicate that the investment outperforms its benchmark while negative alpha values indicate the investment underperforms its benchmark; on the other hand, market betas lower (higher) than 1 show that the investment performs with a lower (higher) risk than expected.

On the other hand, in the context of all analyzes, the risk-free interest rate (R_f) which is the basis for calculating the monthly excess returns, indicated the monthly return of 91-days Turkish Government Debt Securities (GDS) performance indices; the return of the market portfolio (R_m) showed the monthly return of Borsa İstanbul (BIST) 100 index (calculated in terms of return). The historical data for monthly stock returns, stock market values, the monthly return of 91-day GDS performance indices and the monthly return of BIST 100 index were obtained from the Borsa İstanbul Historic and Reference Data Platform (Datastore). Finally, the Central Bank of Turkey Electronic Data Delivery System was used for the daily exchange rates data for United States Dollar to Turkish Lira (USD/TRY) reported as banknote buying to express the annual brand value announced by Brand Finance in dollar currency as Turkish Lira.

3. Empirical and statistical results

As we noted above, we used the brand values in the annual reports of "The Most Valuable Brands of Turkey" published by Brand Finance for 2007 to 2015 and constructed the strong and weak-brand portfolios to test our hypotheses. In this regard, Table 1 shows the average brand value-to-market value ratio of the stocks included in the strong-brand portfolio, which is rebalanced annually according to the annual reports of Brand Finance.

Table 1
Descriptive Statistics for the Companies included in the Strong-Brand Portfolio.

Company	Year	Brand Value/Market Value	Company	Year	Brand Value/Market Value	Company	Year	Brand Value/Market Value
Ak Sigorta	3	11,54	Ereğli Demir ve Çelik	2	11,02	Sekerbank	3	21,95
Akbank	9	10,61	Fenerbahçe	2	18,95	Selçuk Ecza Deposu	1	25,92
Akcansa	1	7,36	Finansbank	1	2,07	Sinpaş GYO	1	5,02
Akenerji	1	6,11	Ford Otomotiv	9	46,57	T.Sinai ve Kalkınma Bnk	5	8,28
Aksa	1	53,29	Galatasaray	2	23,80	Tat Gıda	1	53,70
Albaratürk	1	19,71	Garanti Bankası	8	7,22	Tat Konserve	3	40,28
Anadolu Efes	7	22,24	Goldaş	4	69,16	TAV Hava Limanları	8	9,70
Anadolu Hayat	1	9,73	Goodyear	4	20,54	TEB	4	14,80
Anadolu Sigorta	4	26,94	GSD Holding	1	79,54	Teknosa	2	36,93
Arçelik	8	71,45	Halkbank	7	13,23	Tofaş	9	23,24
Aselsan	6	8,76	Hürriyet Gaz.	8	70,20	Trabzonspor	1	17,61
Aygaz	8	50,63	İhlas Ev Aletleri	1	10,44	Trakya Cam	2	23,19
Banvit	5	64,14	İhlas Holding	2	99,78	Turcas Petrol	2	18,41
Beko	2	139,93	İzmir Demir Çelik	2	24,68	Turcell	9	12,44
Beşiktaş SK	1	24,80	Karsan Otomotiv	6	29,47	Tüpraş	2	17,18
BİM	6	19,73	Kipa	2	46,72	Türk Demir Döküm	1	26,94
Boyner	4	75,43	Koza Altın İşletmeleri	2	29,02	Türk Hava Yolları	9	49,94
Brisa	5	14,72	Migros	8	36,82	Türk Telekom	7	16,84
Bsh Ev Aletleri	1	12,18	Mutlu Akü	1	21,76	Türk Traktör ve Zir.Mak.	5	11,04
Çelebi	6	17,13	Net Turizm	1	11,13	Türkiye Şişecam	9	40,04
Çimsa	1	7,37	Netaş Telekom.	3	17,55	Uzel Makina	1	21,56
Doğan Gazete	3	40,74	Otokar Otomotiv	7	17,59	Ülker	8	36,70
Doğan Holding	1	26,21	Pegasus	2	9,73	Vakıfbank	9	15,79
Doğan Yayın Hol	2	118,63	Petkim	2	28,97	Vestel	7	139,76
Doğuş Otomotiv	9	44,69	Petrol Ofisi	6	72,56	Vestel Beyaz Eşya	3	25,98
Eczacıbaşı İlaç	5	25,73	Pınar Süt	2	25,94	Yapı Kredi Bankası	9	18,89
Eczacıbaşı Yapı	1	44,17	Reysaş Taşımacılık	2	24,07	Yapı Kredi Sigorta	2	4,62
Ege Seramik	1	38,12	Sabancı Holding	1	10,43	Yazıcılar Holding	1	7,71
Emlak Konut GYO	1	2,01	Sarkuysan	1	105,48	Zorlu Enerji	1	12,75
Enka İnşaat	9	11,50	Sasa Polyester	1	35,09			

Table 1 presents company name, number of appearances and average brand-to-market value (market capitalization) ratios for companies that were included in the "Strong-Brand Portfolio" at least once according to annual reports of Brand Finance between 2007 and 2015. Market capitalizations are from Datastore and brand values are from "The Most Valuable Brands of Turkey" reports of Brand Finance.

As can be seen in Table 1, 89 companies are included in the strong-brand portfolio at least once. In this context, it is remarked that brand values published by Brand Finance constitute 31.49 percent of the market capitalization of a company with 28.76 percent standard deviation. This finding supports the findings of Madden et al. (2006) and Fehle et al. (2008) and points to the importance of the brand value for companies. Considering this result, for the next stage, the
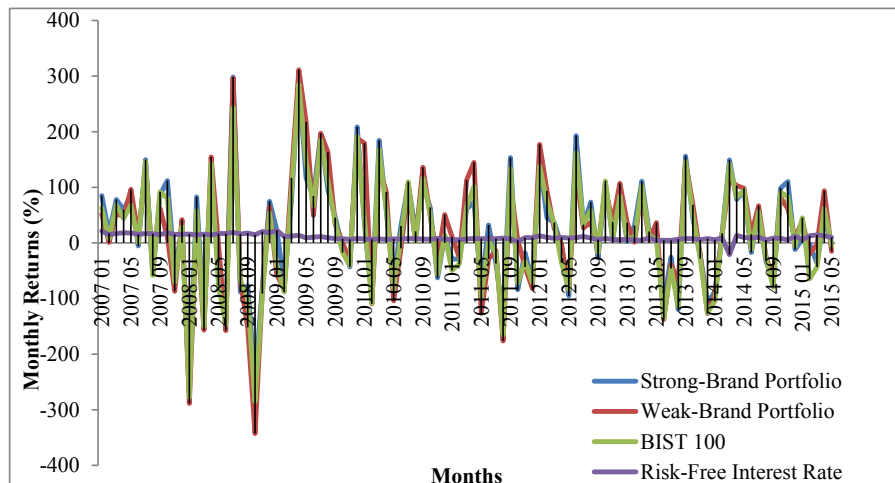

Fig. 2. Annualized monthly market value-weighted returns on the strong and weak-brand portfolios, the BIST 100 index and the risk-free interest rate.
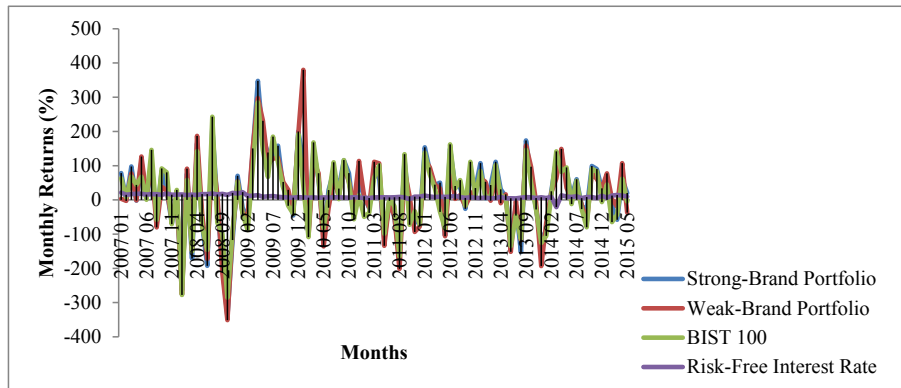
Fig. 3. Annualized monthly equal-weighted returns on the strong and weak-brand portfolios, the BIST 100 index and the risk-free interest rate.

historical average returns on the strong and weak-brand portfolios formed using value-weighting and equal-weighting are illustrated in Fig. 2 and Fig. 3, respectively.

The time-series graphs in Fig. 2 and 3 display that the return on the strong and weak-brand portfolios and BIST 100 follow similar changes over time. However, the graphs of all series do not exhibit any visible trend for the sample period. In addition, it has been observed that for some months, especially during the months of ups and downs in returns, the strong and weak-brand portfolios yield higher or lower returns than the BIST 100 Index. This can be more clearly observed with descriptive statistics in Table 2.

Table 2 reports the descriptive statistics for the strong and weak-brand portfolios returns and shows that when the market value-weighting is followed, the average returns on the strong and weak portfolios are equal; but when the equal-weighting is followed, the strong portfolio has a somewhat higher return. On the other hand, it is observed that the standard deviations of the strong portfolio returns are lower than the weak portfolio returns in both weighting methods. Therefore, although no finding is made that the average returns of strong portfolios are greater than those of weak portfolios as suggested by Hypothesis 1, the first finding that they have a lower risk is made as suggested by Hypothesis 3. However, it is also

noteworthy that descriptive statistics for the value-weighted strong portfolio returns are statistically insignificant.

In Fig. 4 and 5, it is seen that when the market value-weighting is followed, the excess returns on the strong and weak-brand portfolios over the BIST 100 Index have a different pattern but when the equal-weighting is followed, there appears to be a more similar process between excess returns. In this context, as shown in Fig. 4, the sharp increases for some months with higher excess returns and the sharp decreases for some months with less excess returns are captured by the market value-weighting for the weak-brand portfolio. Although Fig. 4 illustrates that there are more stable and greater returns for strong-brand portfolios, it does not allow a clear assessment of superiority. This problem also arises in Fig. 6 and 7, where the excess returns on the strong and weak-brand portfolios over the risk-free interest rate are shown.

Fig. 6 and 7 show that the excess returns of the strong and weak-brand portfolios over the risk-free interest rate have a similar pattern in both weighting methods. On the other hand, according to Table 3, when the market value-weighting is followed, the average excess return over the BIST 100 Index is 23% for the strong-brand portfolio and 8% for the weak-brand portfolio; the average excess return over the risk-free interest rate is 13% for the strong-brand portfolio and 12% for the weak-brand portfolio. Besides, when the equal-weighting is followed, the average excess return over the BIST 100 Index decreases to 6% for the strong-brand portfolio and to 2% for the weak-brand portfolio; the average excess return over the risk-free interest rate is 12% for the strong-brand portfolio and decreases to 7% for the weak-brand portfolio. These results show that the strong-brand portfolios have greater average excess returns over the market portfolio return than those weak-brand portfolios, especially in the use of market value-weighting method, while they have greater average excess returns over the risk-free interest rate with the equal-weighting method. Hence, these results can also be regarded as a preliminary finding that the market value of strong-brand portfolios is high.

When the standard deviation values in Table 2 are examined, the most notable point is that the standard deviation of

Table 2
Descriptive statistics for the strong and weak-brand portfolio returns.

	Strong-Brand Portfolio		Weak-Brand Portfolio	
	Market Value	Egual	Market Value	Egual
	Weighted	Weighted	Weighted	Weighted
Mean	0.23	0.22	0.23	0.17
Median	0.23	0.31	0.26	0.15
Std.Deviation	0.98	1.06	1.07	1.10
Skewness	0.01	−0.45	−0.33	−0.24
Kurtosis	3.70	4.25	4.26	4.74
Jarque-Bera	2.09	10.06	8.53	13.68
Probability	0.35	0.01	0.01	0.00
Observations	101	101	101	101

Table 2 presents the mean, median, standard deviation, skewness, kurtosis, Jarque-Bera, probability and the number of observations for the strong and weak-brand portfolio returns over the period from January 2007 to May 2015. All values are obtained using annualized monthly return series.
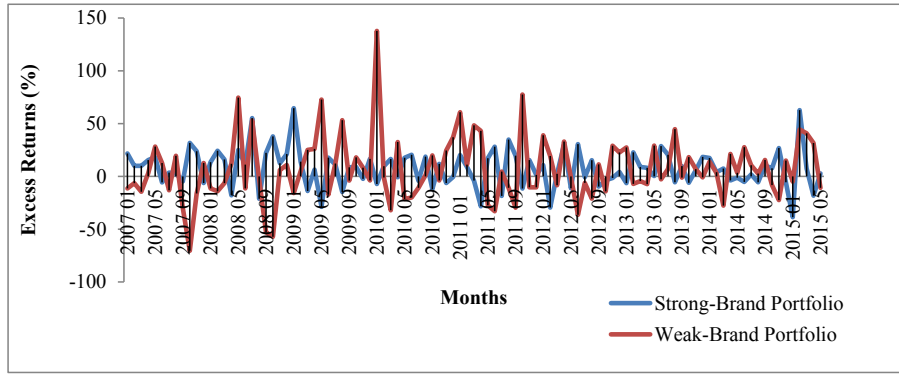
Fig. 4. Annualized monthly excess returns of the market value-weighted strong and weak-brand portfolios over the BIST 100 index.
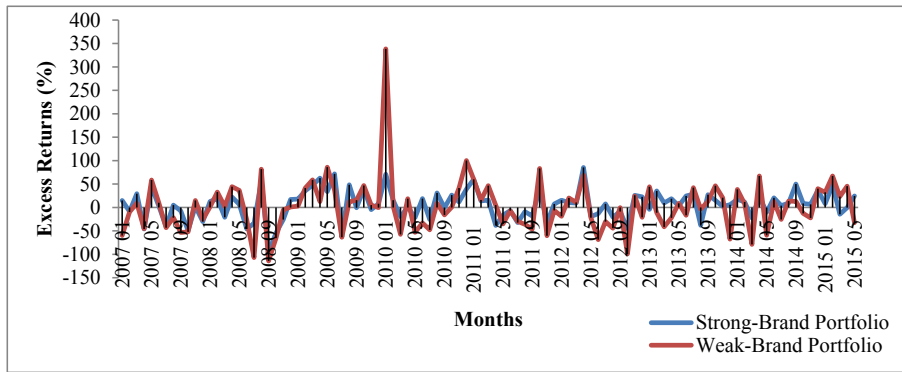

Fig. 5. Annualized monthly excess returns of the equal-weighted strong and weak-brand portfolios over the BIST 100 index.
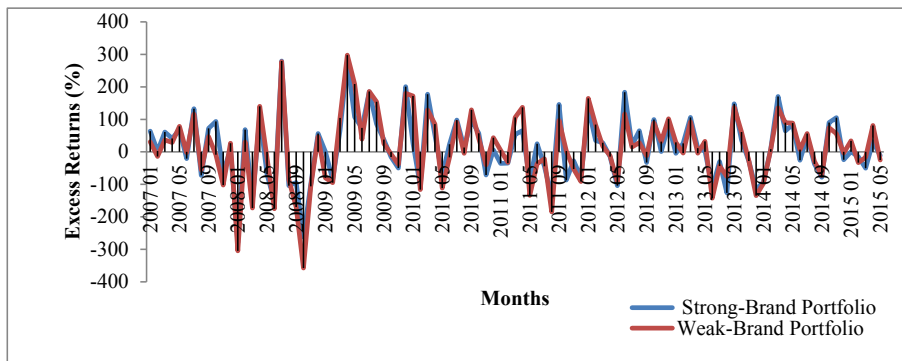

Fig. 6. Annualized monthly excess returns of the market value-weighted strong and weak-brand portfolios over the risk-free interest rate.
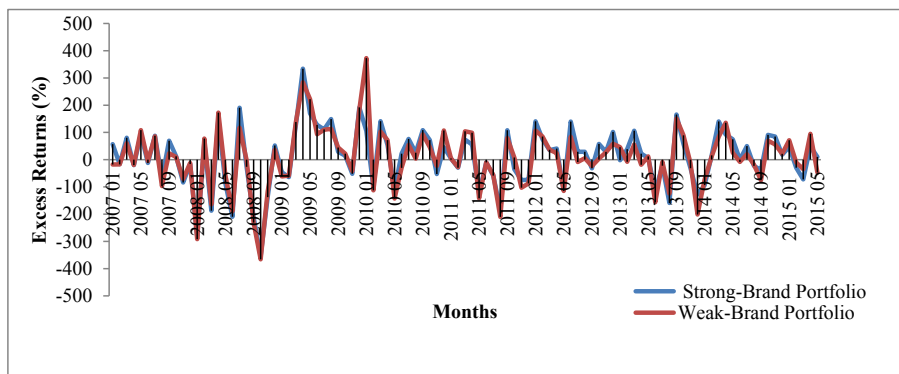

Fig. 7. Annualized monthly excess returns of the equal-weighted strong and weak-brand portfolios over the risk-free interest rate.

Table 3
Descriptive statistics for the strong and Weak-BrandPortfolios over the BIST 100 and the risk-free interest rate.

Statistics	Strong-Brand Portfolio (Market-Value Weighted)		Strong-Brand Portfolio (Equal-Weighted)		Weak-Brand Portfolio (Market-Value Weighted)		Weak-Brand Portfolio (Equal-Weighted)	
	Excess Return over BIST 100	Excess Return over Risk-Free Interest Rate	Excess Return over BIST 100	Excess Return over Risk-Free Interest Rate	Excess Return over BIST 100	Excess Return over Risk-Free Interest Rate	Excess Return over BIST 100	Excess Return over Risk-Free Interest Rate
Mean	0.23	0.13	0.06	0.12	0.08	0.12	0.02	0.07
Median	0.23	0.11	0.08	0.22	0.03	0.15	0.02	0.08
Std.Deviation	0.98	0.98	0.31	1.06	0.30	1.07	0.55	1.10
Skewness	0.01	−0.03	−0.24	−0.50	0.90	−0.37	2.10	−0.27
Kurtosis	3.70	3.71	3.49	4.26	6.00	4.25	15.11	4.77
Jarque-Bera	2.09	2.11	1.98	10.88	51.69	8.94	691.54	14.41
Probability	0.35	0.35	0.37	0.00	0.00	0.01	0.00	0.00
Observation	101	101	101	101	101	101	101	101

Table 3 presents the mean, median, standard deviation, skewness, kurtosis, Jarque-Bera, probability and observation values for the strong and weak-brand portfolio excess returns over the period from January 2007 to May 2015. All values are obtained using average annualized monthly returns.

the excess return of strong-brand portfolio over the BIST 100 Index is greater than the weak-brand portfolio when the market value-weighting is followed; however, when equal-weighting is followed, this value is reduced compared to the weak-brand portfolio. This result which arose from weighting methods suggests that the excess return of the strong-brand portfolio over market portfolio return is more risky than the weak-brand portfolio although the strong-brand portfolio has a less risky portfolio structure, as seen in Table 2.

In addition to the time-series graphs and descriptive statistics above, to make clearer assessments and to investigate the shareholders' abnormal returns on the strong and weak-brand portfolios, we use the Sharpe-Lintner CAPM and the FF-3factor model at the next stage of analysis. In this regard, Table 4 shows the results of regression analysis based on the Sharpe-Lintner CAPM and the FF-3 factor model for the strong and weak-brand portfolios constructed using market value and equal-weighting methods.

According to Table 4, the strong-brand portfolio alphas in both models and also weighting methods are statistically more significant than weak-brand portfolio alphas. Within this context, the inclusion of SMB and HML risk factors has resulted in significant alphas for strong-brand portfolios formed using both weighting methods, while it has been made possible to obtain significant alphas for weak-brand portfolio only if the market value-weighting has been followed. So, this result confirms that strong-brand portfolios yield statistically significant abnormal returns to shareholders, in line with Madden et al. (2006) and Fehle et al. (2008). Based on this finding, we can accept our Hypothesis 1 and Hypothesis 2 which suggest that a portfolio of firms with higher brand value yields more returns and more significant abnormal returns than a portfolio of firms with lower brand value for shareholders.

When analyzing the values of the SMB and HML factors, Table 4 shows that the SMB factor has statistically significant effect on the excess returns in all analysis. If the market-value weighting is followed for the strong-brand portfolio, it is seen that the SMB factor is negative and highly significant and this finding may signal that the strong-brand portfolio is mainly composed of large stocks and that the returns on this portfolio covary mostly with large stocks. However, the SMB factor has a highly significant positive coefficient when the weighting method is changed, which does not support this finding. Finally, these evaluations of the SMB factor probably indicate that in fact the strong-brand portfolio is mainly composed of small stocks but the large stocks in this portfolio belong to large companies with mostly higher market capitalization weights than small companies. In terms of the weak-brand portfolio, the SMB factor appears to have a highly significant positive coefficient in both weighting methods. Thence, the weak-brand portfolio is mainly composed of small stocks, and the returns on this portfolio covary mostly with small stocks.

On the other hand, the HML factor is insignificant in all analyzes, so it can be suggested that it does not have any effects on the excess returns. Also, statistically insignificant negative HML coefficients for strong-brand portfolio and positive HML coefficients for weak-brand portfolio in both weighting methods do not allow for comments on whether the stocks in these portfolios are value or growth stocks.

When an assessment is made in terms of market risk, it appears that the addition of HML and SMB factors for both strong and weak-brand portfolios does not have any important effects on the market beta. Within this scope, when the market-value weighting is followed, it becomes clear that the market beta is highly significant and is less than 1 for the strong-brand portfolio and higher than 1 for the weak-brand portfolio. But, when the equal-weighting is followed it is remarked that the market beta continues to have a highly significant value but it is higher than 1 for the strong-brand portfolio and less than 1 for the weak-brand portfolio. Thereby, these findings do not allow a clear assessment for Hypothesis 3 which suggests that a portfolio of firms with

Table 4
Regression analysis results for the strong and weak-brand portfolios.

	Strong-Brand Portfolio (Market Value-Weighted)		Strong-Brand Portfolio (Equal-Weighted)		Weak-Brand Portfolio (Market Value-Weighted)		Weak-Brand Portfolio (Equal-Weighted)	
	CAPM	FF-3	CAPM	FF-3	CAPM	FF-3	CAPM	FF-3
α	0.0778 {6.0765}***	0.0777 {5.5880}***	0.0605 (1.9449)*	0.0613 (2.1893)**	0.0689 (2.3136)**	0.0682 (2.2583)**	0.0195 (0.3529)	0.0157 (0.3657)
Market β	0.9644 {56.6322}***	0.9661 {56.3968}***	1.0162 (32.5653)***	1.0216 (36.7550)***	1.0299 (34.4569)***	1.0256 (34.2253)***	0.9576 (17.3048)***	0.9558 (22.4229)***
SMB β		−1.5466 {−2.8896}***		4.2508 (5.7378)***		2.3349 (2.9234)***		9.8863 (8.7021)***
HML β		−0.5559 {−1.1827}		−0.6989 (−0.9879)		0.8365 (1.0968)		0.9005 (0.8300)
Observation	101	95	101	95	101	95	101	95
Adj. R^2	0.9684	0.9723	0.9138	0.9377	0.9223	0.9295	0.7490	0.8648
LM(1)	7.5931*** [0.0059]	4.2034 ** [0.0403]	0.4650 [0.4953]	2.0989 [0.1474]	0.0863 [0.7690]	0.1580 [0.6910]	0.0285 [0.8660]	0.0013 [0.9715]
LM(12)	14.4527 [0.2727]	11.9187 [0.4522]	17.2528 [0.1403]	16.4100 [0.1732]	13.3571 [0.3436]	8.7690 [0.7225]	11.7243 [0.4681]	10.1551 [0.6024]
White	2.1209 [0.3463]	5.75,559 [0.7641]	3.2843 [0.1936]	7.6399 [0.5708]	0.2175 [0.8969]	2.3469 [0.9847]	0.1764 [0.9156]	4.6368 [0.8648]

Note: Table shows the OLS regression results for the period January 2007—May 2015 for the CAPM (Equation (3)) and the FF-3 Factor Model (Equation (5)) with respect to the return of the strong and weak-brand portfolios calculated with market value and equal-weighting methods. "α"is the Jensen's alpha and it shows the abnormal return, SMB is the return difference between the small and large firms, and HML shows the difference between the firms with high Book Equity/Market Equity ratio and those with low ones in the table. The LM(k) is a Breusch-Godfrey Lagrange Multiplier test statistic which examines whether there is a k. degree autocorrelation in the regression error terms. The LM test statistic, calculated from auxiliary regression as n*R,^{2} shows as $\chi^2(k)$ distribution asymptotically. The White is a White (1980) test statistic which examines whether there is a heteroskedasticity in the regression error terms. The White test statistic, calculated from auxiliary regression as n*R,^{2} shows as $\chi^2(k-1)$ (k = the number of estimated coefficients in the auxiliary test regression) distribution asymptotically.Values in brackets ( ) indicate t statistics. Values in { } show the t statistics calculated by heteroskedasticity and serial correlation consistent covariance (HAC) or Newey and West (1987) estimator in the case of detection of serial correlation or heteroskedasticity. Values in brackets [ ] indicate p-values.
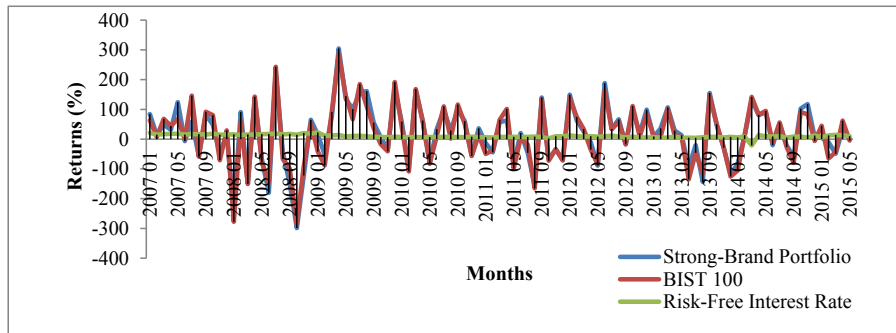
Fig. 8. Annualized monthly brand value-weighted returns on the strong-brand portfolios, the BIST 100 index and the risk-free interest rate.
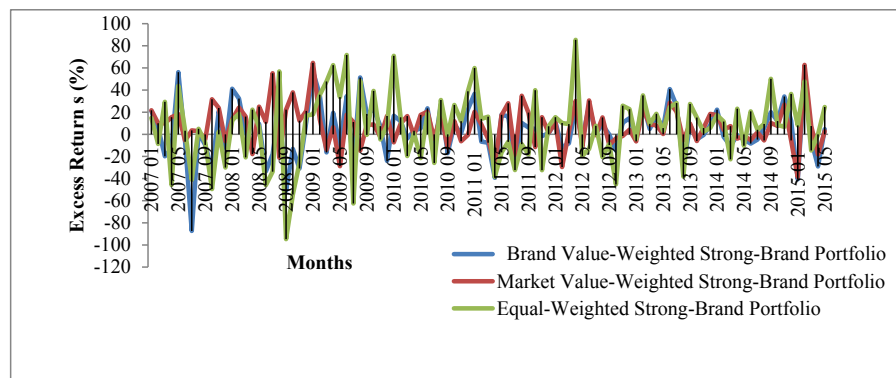

Fig. 9. Annualized monthly excess return of the strong-brand portfolio over the BIST 100 index.
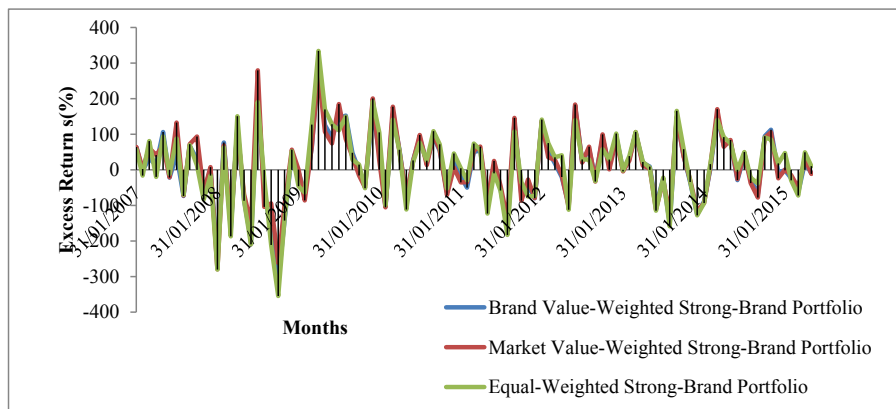

Fig. 10. Annualized monthly excess return of the strong-brand portfolio over the risk-free interest rate.

higher brand value is less risky than a portfolio of firms with lower brand value.

Under the evaluations above, the finding that a portfolio of firms with high brand value has increased shareholder returns does not take into account the magnitude of the brand value of the firms in the portfolio; it indicates that all brands included in the Brand Finance list are considered as strong brands. For this reason, the brand values published by Brand Finance in the related year were also used as the portfolio weight, and related analyzes were renewed by following Madden et al. (2006) and Fehle et al. (2008) in order to clarify the impact

of brand value on shareholder returns more clearly. For this weighting, all brand values on the Brand Finance list for each year are summed, and then the brand value of each company in this list is divided by total brand value in order to obtain the relative brand value of each firm in the related year. Thus, the strong-brand portfolio is rebalanced annually based on these relative brand values. Fig. 8 illustrates the time-series graph of the brand value-weighted strong-brand portfolio returns versus the BIST 100 Index and the risk-free interest rate.

According to Fig. 8, the strong-brand portfolio returns move together with the BIST 100 Index over time. However,

Table 5
Descriptive statistics for the brand value-weighted strong-brand portfolio.

	Strong-Brand Portfolio Returns	Excess Return of Strong Portfolio over BIST 100
Mean	0.1912	0.0365
Median	0.2595	0.0477
Std.Deviation	0.9755	0.2332
Skewness	−0.2856	−0.4341
Kurtosis	3.8197	4.5888
Jarque-Bera	4.2008	13.7951
Probability	0.1224	0.0010
Observations	101	101

Table 5 presents the mean, median, standard deviation, skewness, kurtosis, Jarque-Bera, probability and observation values for the brand value-weighted strong-brand portfolio returns and excess returns over the BIST 100 Index between January 2007 and May 2015. All values are obtained using average annualized monthly returns.

Fig. 9 and 10 display the time-series graphs of the excess returns of the strong-brand portfolio formed using brand value, market value and equal-weighting methods over the BIST 100 Index and the risk-free interest rate in order to make the evaluations more accurate.

As seen from Fig. 9 and 10, the excess returns of the strong-brand portfolio formed using brand value over the risk-free interest rate is fairly consistent with the market value and equal-weighted ones over time; but the excess returns of this

Table 6
Regression analysis results for the brand value-weighted strong-brand portfolios.

	Brand Value-Weighted Strong-Brand Portfolio	
	CAPM	FF-3
α	0.0390 (1.6991)*	0.0368 (1.5542)
Market β	0.9553 (41.5226)***	0.9550 (40.5781)***
SMB β		0.2629 (0.4189)
HML β		−0.2156 (−0.3604)
Observation	101	95
Adj. R^2	0.9451	0.9442
LM(1)	0.2739 [0.6007]	0.4048 [0.5246]
LM(12)	4.4374 [0.9742]	3.8715 [0.9856]
White	1.0732 [0.5847]	7.3809 [0.5975]

Note: Table shows the OLS regression results for the period January 2007—May 2015 for the CAPM (Equation (3)) and the FF-3 Factor Model (Equation (5)) with respect to the strong-brand portfolio calculated by brand value-weighting. "α" is the Jensen's alpha and it shows the abnormal return, SMB is the return difference between the small and large firms, and HML shows the difference between the firms with high Book Equity/Market Equity ratio and those with low ones in the table. The LM(k) is a Breusch-Godfrey Lagrange Multiplier test statistic which examines whether there is a k. degree autocorrelation in the regression error terms. The LM test statistic, calculated from auxiliary regression as n*R,^{2} shows as $\chi^2(k)$ distribution asymptotically. The White is a White (1980) test statistic which examines whether there is a heteroskedasticity in the regression error terms. The White test statistic, calculated from auxiliary regression as n*R,^{2} shows as $\chi^2(k-1)$ (k = the number of estimated coefficients in the auxiliary test regression) distribution asymptotically. Values in brackets ( ) indicate t statistics. Values in { } show the t statistics calculated by heteroskedasticity and serial correlation consistent covariance (HAC) or Newey and West (1987) estimator in case of detection of serial correlation or heteroskedasticity. Values in brackets [ ] indicate p-values.

portfolio over the BIST 100 Index vary across weighting methods for the same time period. In this process, it is observed that the excess returns of the market and brand value-weighted portfolios tend to move together many times. However, according to Table 5 which reports descriptive statistics for the brand value-weighted strong-brand portfolio, it is remarked for brand value-weighted strong-brand portfolio that its average return is lower than those of the market value and equal-weighted with the value of 19.12% and its standard deviation is approximately the same as the market value-weighted one with the value of 97.55%.

Collaterally, it is also noteworthy that the average excess return of the brand value-weighted strong-brand portfolio over the BIST 100 Index is lower than other weighted ones with the value of 3.65%. Although these findings indicate that the weighting based on brand value does not increase portfolio returns, they signal that it may reduce the risk with the value of 0.9755. On the other hand, these results also lead to the possibility that the brand values published by Brand Finance are not fully priced on the market. This possibility is investigated through the Sharpe-Lintner CAPM and the FF-3 factor model and the results of regression analysis for both models are reported in Table 6.

According to Table 6, when CAPM is followed for the brand value-weighted strong-brand portfolio, less significant alphas are obtained than other weighting methods; but when the FF-3 factor model is followed, it is seen that the alphas are insignificant. These results, contrary to the finding of Madden et al. (2006), indicate that the weighting based on brand value for the strong-brand portfolio weakens excess returns and outperformance reported in Table 4. Nonetheless, consistent with Madden et al. (2006), highly significantly lower market betas are observed for the brand value-weighted strong-brand portfolio in both the CAPM and the FF-3 factor model. So, this result shows that a portfolio of firms with high brand value is less risky than a portfolio of firms with low brand value, confirming the results obtained by market value-weighting.

On the other hand, the findings in Table 6 give a new dimension to assessments of the returns on the strong and weak-brand portfolio when the magnitude of the brand value is taken into consideration. In this context, although Hypothesis 2 which suggests that a portfolio of firms with higher brand value yields more significant abnormal returns than a portfolio of firms with lower brand value for shareholders is accepted, it is revealed that the brand value published by Brand Finance is not fully priced in the market when it is considered as portfolio weight. In addition, this signals that the outperformance of the strong-brand portfolio may be under the influence of different factors. It is also possible that the asset pricing models used may be insufficient to explain the stock returns. It may be useful at this stage to examine the risk-return relationship for each portfolio in terms of months to make a clearer assessment. Thus, Fig. 11, which demonstrates the average correlation relationship for the returns on the market value-weighted strong and weak-brand portfolios over the relevant period, justifies the necessity of this comparison.
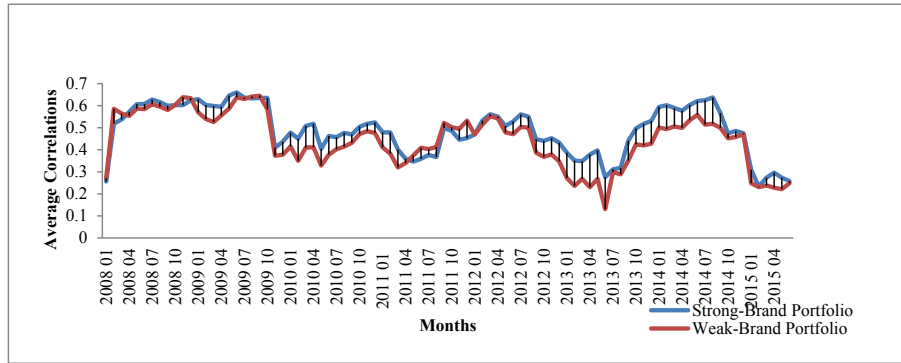
Fig. 11. Average correlations for the market value-weighted strong and weak-brand portfolios.

According to Fig. 11, the correlations calculated for each month over the previous 12-month return on the strong and weak-brand portfolios display the comovement of the returns on both portfolios over time. The fact that correlations between portfolio returns follow a process which is positive directionally and with the same values as the average for both portfolios also clarifies our previous return and risk assessments for these portfolios. In this context, the consistent processes for correlations displayed in Fig. 11 leads to no significant difference in the average returns and risks on the strong and weak-brand portfolios; however, the findings of more significant abnormal returns for strong-brand portfolio compared to weak-brand portfolio revealed through different asset pricing models signal the need for more detailed risk-return analysis. Nevertheless, it may also be possible to obtain more explanatory findings on the issue through considering the publicly offered rates of the companies included in both portfolios.

4. Conclusion

It is observed that the brand has emerged as one of the most important intangible assets in developed and emerging financial markets and it has been subject to a limited number of research studies in the finance literature after the brand value-firm value relationship was proposed in Aaker (1991; 1996). In particular, studies such as Chan et al. (2001), Madden et al. (2006), Fehle et al. (2008) and Edmans (2011) suggest that intangible assets or brand value increase firm value or stock returns. This study, contrary to the related literature, examines the effect of brand value on shareholder returns for the Turkish stock market as an emerging market. In this context, it makes risk-return analysis for the strong-brand portfolio which was constructed by considering the stocks included in the annual reports of Brand Finance and the BIST 100 Index in the 2007−2015 period and compares this portfolio with a benchmark portfolio named as weak-brand portfolio.

Within the scope of the analyzes for average returns, risk and excess returns for the strong and weak-brand portfolios, it is observed that there is not a significant difference in average returns for both portfolios formed using the market value and equal-weighting methods; there is a market beta lower than 1 for the market value-weighted strong-brand portfolio and the market value-weighted strong-brand portfolio has substantially higher excess returns over the market portfolio than that of the weak-brand portfolio. On the other hand, the analysis based on the CAPM and the FF-3 factor model show that when the market-value weighting is followed, highly significant alphas and market betas with lower values are obtained for the strong-brand portfolio compared to the weak-brand portolio; but when the brand-value weighting is followed, the alphas are less significant or insignificant and the market betas are highly significantly lower than those of other weighting methods.

Overall analysis shows that although the findings based on the regression analysis indicate that the strong-brand portfolio yields significant abnormal returns for shareholders, confirming the findings of Bank and Erdogan (2015), Bayrakdaroğlu and Mirgen (2016) and Basgoze et al. (2016), and it has lower market risk than that of weak-brand portfolio, taking into consideration the brand values published by Brand Finance, in terms of magnitude it gives the possibility that this value is not fully priced in the market. In such a case, the inefficiency of the Turkish stock market or the insufficiency of the asset pricing models is also within the bounds of possibility. Hence, for further research a micro-level review of portfolio return and risk relationship may be helpful, allowing more robust assessments. At this point, the fact that the average correlations for the returns on the market value-weighted strong and weak-brand portfolios have positive directional and consistent processes for both portfolios, signal the need for that review, clarifying our previous return and risk assessments.

Conflict of interest

There is no conflict of interest.

Acknowledgments

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