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THE EFFECT OF EXPORT ON BRAND VALUES: PANEL TOBİT APPROACH

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Abstract:
In today's competitive conditions, companies that want to open up to international markets should offer their products to the market by branding in order to protect and maintain their assets. Having a strong brand is one of the most important issues that will enable companies to increase their exports in highly competitive environments. This study aims to investigate the relationship between the brand value of companies and especially exports and selected financial statement components. The Panel Tobit Method was used in the study to investigate the association between the brand values of 24 manufacturing industry businesses traded on the BIST 100 and their export and chosen financial ratios.As a result of the analysis, a significant and positive relationship was found between the brand values of the companies and their export, paid-in capital and stock returns. Based on the knowledge that exports increase brand value, it emerges that companies should turn to investments that increase and develop brand value in export management.

Keywords:
Brand Value, Export, Financial Table, Panel Tobit Model, Brand Finance Method
Jel Codes: M31, P33, G32, C23

1. Introduction

As a necessity of today's trade world, the search for a concept that will reveal its difference in order to distinguish the products and services produced from the others has led to the emergence of the brand concept (Ercan, Öztürk, & Demirgüneş, 2011). Although its history dates back to ancient times, the concept of brand started to gain the importance it deserves in the commercial life in the twentieth century. As of the twentieth century, research has begun on the benefits of branding (Farquhar, 1990). The fact that companies that offer products that meet the needs of increasingly aware consumers require a tool to reveal their own identities has highlighted the significance of the brand concept (Aracı & Bekçi, 2017).

Since the competition between companies is realized through the brands they own, branding is now a necessity and an investment element of strategic importance. Branding should be considered as a long-term investment and a strategic path should be followed accordingly. As the differences between the products manufactured by companies diminish, it is possible to have a different image thanks to brand details such as name, symbol, design, or sign that increase the value of the products apart from their functional purpose. As the factor that makes the difference, the brand provides distinctiveness and presents information about the product to the target audience (Karpat, 2016) .

Brands not only enable products to differentiate from their competitors, but also increase the income and market share of companies, make customers less sensitive to price increases, increase profitability, customer loyalty, and increase the stock prices of companies (Vanauken, 2003).

Businesses functioning in a globalizing world now need to brand and market their goods in order to preserve their existence and make them endure in the face of fierce competition (Çelikten, 2008).

Capital movements and international trade activities are becoming increasingly important for countries in the current conditions, where globalization has transformed the world into a massive market. The resources to be provided by opening up to international markets will positively affect the welfare of the countries. For this reason, having a strong brand, which is one of the important components of opening to the international market, is one of the most important issues that will enable companies to increase their exports in highly competitive environments. Companies must be able to establish a presence with their brands in both domestic and international marketplaces in order to conduct robust and long-term effective commercial activity there (Mete, 2011).

For exporting businesses, branding is of great importance as a factor that enables them to do business in the international market. While companies work as subcontractors to strong multinational brands with financial concerns before branding; With the change of trade conditions over time, they started to operate on their own, with the thought that the returns to be provided by their direct involvement in trade would be greater. Directly operating businesses are at a point where they may capture a larger market share and compete no more on the basis of low prices but rather on design, quality, and innovation. This level emerges as the level at which companies maintain their existence with their brand (Aktaş & Akçaoğlu, 2005).

2. Literature Review

Brand value is the additional value that the produced product or service brings to the firm or consumers, the value added to or subtracted from the product or service, symbol, name, assets and liabilities belonging to the brand (Aaker, 1991).

It was in the 1980s that companies began to give more importance to brand value. It has been determined that in the increase in company acquisitions in those years, the companies found buyers at prices far above their balance sheet values and the reason for this increase was the intangible assets so brand value of the companies (Kılınç & Gökdeniz, 2019). Brands have a significant impact on companies' ability to generate greater profits. Brand valuation is therefore necessary for businesses, as it has a big effect on their profitability (Arora & Chaudhary, 2016).

Developing attitudes that will measure the value of a brand is important in many ways. First of all, since the brand is an element that can be bought and sold, the need to determine its value has arisen. Secondly, brand investments that aim to boost brand value can be put to the test. Ultimately, the determination of brand value enables the concept of value to be examined from a more detailed perspective (Aaker, 1991).

Consumer behavior-based brand valuation methods, financial-based brand valuation methods, and hybrid brand valuation methods are the three main heading under which brand value can be calculated (Gerekan & Koçan, 2018).

Financial-based brand value refers to the present value of all future financial gains that the brand owner will derive from using the brand (Ercan, Öztürk, & Demirgüneş, 2011). Financial-based brand valuation methods are approaches that are planned to obtain a financial value for the brand, consist of purely financial approaches, and offer a brand valuation based on the same standards as companies and other commercial assets (King, 2002).

Brand valuation methods based on consumer behavior try to reveal which element will direct the consumer towards the brand by determining what motivations lie under the behaviors that cause consumers to buy products (Baydaş, 2007)

Due to the fact that financial-based and consumer-based brand valuation models are insufficient and do not show the results fully, various consultancy firms have put forward mixed models that use financial and behavioral elements together. Thus, mixed brand valuation models evaluated the root elements based on two different principles in the models (Aydın & Ülengin, 2011). Interbrand model, Brand Finance model, Financial World model, Brand Rating model are the prominent models among mixed brand valuation models.

Brand Finance Model; One of the frequently chosen models for brand valuation is the brand value model from the British consulting firm Brand Finance. This model focuses on the expected future operating profits of the brand (Miller & Muir, 2005). The reason why the model cares about future profits; Past successes do not guarantee future success, so investors should consider future expectations more in their decision-making processes (Haigh, 2000). The Brand Finance model consists of five phases. Segmentation, Financial Forecast, BVA Analysis, ßrandßeta® Analysis, Valuation and Sentiment Analysis. Following all of these analyses, the brand's share and risk within each segment are computed. The brand value is calculated by reducing the share of the brand within the intangible assets to their present values with the discount rate previously calculated (Heberden, 2002).

Summaries of some of the studies on brand value are as follows:

Akbulut and Paksoy examined the relationship between brand value and financial indicators in their studies. The relationships between the brand values of the companies in the study and the market price, earnings per share, net sales, profit before interest and tax, and profitability of assets were examined. As a result of the study, a statistically significant relationship was determined between brand value and profit before interest and tax (Akbulut & Paksoy, 2007).

Başgöze et al., in their study, examined the effects of brand equity on stock returns on companies traded in BIST 100 between 2010-2014, using long-term risk-adjusted portfolio returns. As a result of the study, it was seen that the companies included in the Brand Finance 100 Turkey report achieved extraordinary returns 7 months after the report was published (Başgöze, Yıldız, & Camgöz, 2016).

Önder and Genç investigated the relationship between the brand values of companies and selected income statement components. In addition, the relationship between the sector in which the companies operate and the brand value was investigated in the study. Brand values were obtained from the Brand Finance 100 report. As a result of the study, there was a significant relationship between the brand values of the companies and their sales, operating profit and marketing expenses, but no significant relationship was found between foreign sales and brand value (Önder & Genç, 2021).

In their study, Özsaatçi and Köse analyzed the relationship between the brand value and net foreign trade volume of the top 20 economies with the highest brand value between the years 2010-2017 using the Dynamic Panel Data method. As a result of the study; It has been found that there is a positive relationship between the trade volume of the countries in the previous period and the trade volume in the current period. Additionally, a favorable and reciprocal association between trade volume and brand value was detected (Özsaatçi & Köse, 2021).

Gerekan et al. investigated the relationship between brand equity and firm growth in their study. The sales operating income, R&D and marketing, sales and distribution expenditures of the companies included in the Brand Finance Turkey 100 report between the years 2012-2018 have been accepted as company growth factors. As a result of the study; While increasing operating income caused a significant increase in marketing, sales, distribution, brand value, no significant relationship was found between increasing sales and brand value (Gerekan, Pehlivan, & Koçan, 2019).

3. Data and Methodology

The effect of the financial statement data of the companies in the study on the brand values was examined. In the period of 2011-2021, the brand values, export and financial statement values of 24 companies included in the Brand Finance Turkey 100 reports and traded in the BIST 100 were used. The companies used in the study consist of companies that are in the manufacturing sector and included in the annual reports of "Brand Finance" within the specified time period. The 24 companies included in the study were divided into 5 different groups according to their sub-sectors . Exports, total sales revenues and paid-in capital values belonging to the companies were obtained from the "Public Disclosure Platform" (KAP), and their stock and market values were obtained from the "iş yatırım" website .

The Tobit model, which was developed by the economist James Tobin and defined as the censored model in which the information belonging to the dependent variable exists only for some observations, is a non-parametric alternative to least squares regression. (Liao, 1994). Since it is an extension of the probit model, it was first named Tobit by Goldberger (1964) from the combination of tobin and probit names. While the Tobit model assumes the existence of a latent variable y*, this variable is linked to the explanatory variable xi by the vector of parameters β, its distribution is normal, its mean is μ, and its variance is σ2.

The model depends on assumptions u ∼ N(0, σ2) and y∗ ∼ N(μ, σ2). If the model is censored at the zero point, this creates the generalized form of censorship and takes the form of the 'Standard Tobit Model'. (Carson & Sun , 2007).

The standard tobit model is shown as in model 1, depending on the latent variable.

$$y_i = \alpha X_i + u_i \qquad y_i = \begin{pmatrix} 1 & y_i^* > 0 \\ 0 & y_i^* \leq 0 \end{pmatrix} \tag{1}$$

Tobit's model contains both discontinuity and continuity. Each of these variables are essentially continuous variables. However, since a part of the data set cannot be observed or is limited, that is, it is censored, the missing observations are replaced with zero. For this, it is put forward that the observation set has a discrete feature (Maddala, 1986). Although the dependent variables in these two structures are in the limited class of dependent variables, the sample

they form is different. In the mentioned regression model, this concerns parameter estimation and results (Koç & Şahin, 2018).
The dynamic Tobit panel data model is considered in the form of Honoré (1993), in model 2, the dependent variable with a one-term lag is on the independent variables side.

$$y_{it}^{*} = \alpha_i + \beta' x_{it} + \gamma y_{i,t-1}^{*} + u_{it} \tag{2}$$

$$y_{it} = \begin{cases} y_{it}^{*} & if \quad y_{it}^{*} > 0, \\ 0 & if \quad y_{it}^{*} \leq 0 \end{cases} \tag{3}$$

In this model, the error term uit is independent and same random distribution variables along i and in t.
In the study, brand value (BV), export (EXP), stock value (STC), market value (MV), total sales (TS) and paid-in capital (PC) variables are included in the model. In addition, dummy variables (Di) were added to the model in order to determine whether there is a sectoral difference.
It was decided to use the panel tobit model since the brand value, which is the dependent variable of the linear regression, could not be discovered constantly for 24 firms between 2011 and 2021 and could only be observed at specific periods.

$$\mathrm{LBV_{it}} = \begin{cases} LBV_{it}^{*} > 0, & If\ the\ company\ has\ brand\ value\ data\ for\ that\ year \\ LBV_{it}^{*} = 0, & If\ the\ company\ does\ not\ have\ brand\ value\ data\ for\ that\ year \end{cases}$$

4.Empirical Results

Descriptive statistics of the variables included in the study are given in Table 1.

Table 1. Descriptive statistics of variables

Variable	Mean	Std. Dev.	Min.	Max.
BV	226909871.2	377873149.1	7000000	1983000000
EXP	1963985531	5574790434	6191421	54515151000
STC	18.73	40.57	0.12	342.04
MV	3917903917	7296341974	25344690	64930490000
TS	4858488245	9502080853	46320042	71101258000
PC	213385793	209359140	7441875	900000000

Note: BV; Brand value, EXP; Export, STC; Stock certificate, MV; Market value, TS; Total sales, PC; Paid-in capital.
Mean, standard deviation, minimum and maximum values of brand value, export, stock certificate, market value, total sales and paid-in capital variables used in the study are given in Table 1. Penguen Gıda (2018) has the lowest brand value among the companies whose values are used in the study, while Arçelik (2015) has the highest. The lowest export value among export values belongs to Dardanel (2012), while the highest export value belongs to Ford (2021). Among the stock values, the lowest stock value belongs to Bossa (2012) and Dardanel (2013), while the highest stock value belongs to Alarko (2021). Among the market values, the lowest market value belongs to Dardanel (2013), while the highest market value belongs to Ford (2021). Among the total sales revenues, the lowest total sales revenue belongs to Dardanel (2012), while the highest total sales revenue belongs to Ford (2021). Among the paid-in capital values, Brisa has the lowest paid-in capital value, while the highest issued capital value belongs to Karsan.
The model was performed on logarithmic data since the measurement units for the variables are extremely dissimilar.

Table 2 presents the findings of the Random Effect Panel Tobit model, which examines the effects of export values, selected financial ratios of companies in the main sector of the manufacturing industry, as well as the sub-sectors in which they operate, on brand values. In addition, the models in Table 2 are the final model after testing the deviations from the assumption.

Table 2: Panel Tobit model of 24 firms for the years 2011-2021

	Model 1		Model 2	
Brand Value	**Coefficients**	**Marginal effects**	**Coefficients**	**Marginal effects**
Constant	-5.3310**		-7.2611	
	(2.4853)		(2.5107)	
LSTC	1.0050***	0.1283	1.3772***	0.254
	(0.2982)		(0.3214)	
LEXP	0.5260*	1.1617	0.6891**	1.3073
	(0.2990)		(0.3452)	
LPC	0.8608**	0.2923	0.9180**	0.3186
	(0.3764)		(0.4109)	
MET			-0.9762**	-0.8862
			(0.4376)	
TEX			1.3236**	0.1554
			(0.6759)	
Left CO	31		31	
Non-CO	233		233	
Log likelihood	-606.5108		-600.9136	

Notes: LSTC; Stock certificate, LEXP; Export, LPC; Paid-in capital, MET; Metal products, TEX; Textile. Figures in parenthesis are standard errors. ***,** and * indicates significance at 1 %, 5 % and 10 % statistical levels respectively.

In Table 2, Model 1 is the model without sub-sector dummy variables, and Model 2 is the model with sub-sector variables. Market value and total sales revenue, which were found to be insignificant in both Model 1 and Model 2, were excluded from the model. Coefficient interpretation in Tobit models is possible by calculating marginal effects. When Model 1 is examined, it has been determined that stock returns, exports and paid-in capital have a statistically significant and positive effect on brand value. It is observed that the increases in exports, stock returns and paid-in capital increase the brand value, and the highest increase in brand value is due to exports. When Model 2 is examined, it has been determined that this situation has not changed, and that the return on stock, exports and paid-in capital have a statistically significant and positive effect on the brand value, and again, the biggest effect is caused by exports. In addition, under the manufacturing sector in Model 2; Food and beverage, other manufacturing, chemical and pharmaceutical sectors, which are insignificant among food and beverage, metal goods, textile clothing, other manufacturing, chemical and pharmaceutical sectors, were excluded from the model. It has been determined that the dummy's created for the textile and metal goods sector are statistically significant. It is seen that the brand value of the companies in the textile sector is positively affected, and the opposite is the case for the companies in the metal goods sector.

5. Conclusion

Companies nowadays boost their competitiveness by distinguishing themselves in the market via the use of their brand. However, developing a great brand is a time-consuming and costly process. Planning and caution must be exercised in this process while making the investments required to establish and grow a brand. The businesses might suffer significant losses if the investments are unsuccessful. Since a company's strong brand significantly affects its profitability, companies need to make brand valuation. Since brand valuation is both a tradable component and a factor in testing whether investments in brands will improve their value, it should be calculated. At the same time, high brand values are an indication that companies are successful in their sectors.

In this study, the relationship between the brand value of 24 companies in the manufacturing sector, traded in BIST 100, and export and certain financial statement data was investigated. According to the results of the analysis, it has been determined that there is a significant and positive relationship between the brand values of the companies and their stock, export and paid-in capital values. Among the variables used in the study, it has been determined that the variable that increases the brand value the most is exports, followed by paid-in capital and stock returns, respectively. From a sectoral point of view, while the metal goods sector affects the brand value negatively, the brand value is positively affected by the textile sector. The contribution of this study to the literature; Based on the knowledge that exports increase brand value, it reveals that companies should turn to investments that increase brand value in export management and improve their awareness in order to spread their recognition to wider circles.

References

Aaker, D. (1991). Managing Brand Equity: Capitalizing On The Value Of a Brand Name. New York: Free Press.

Akbulut, R., & Paksoy, M. (2007). Factors that Affect Trademark Value: The Relationship Between Trademark Value and Financial Indicators in Selected Global Companies. Economy, Business and Finance , 22, s. 123-132.

Aktaş, R., & Akçaoğlu, E. (2005). İstersen Markalaş(ma): Küresel Değer Zincirinde Türk Firmalarının Konumu. TMMOB Makine Mühendisleri Odası Marka Yönetim Sempozyumu. Gaziantep: TMMOB Makina Mühendisleri Odası.

Aracı, N. K., & Bekçi, İ. (2017, July). Determination of Financial Brand Valuation Models with Fuzzy AHP Method: An Application in Banking Sector. The Journal of Accounting and Finance, s. 31-54.

Arora, S., & Chaudhary, N. (2016). Impact of Brand Value on Financial Performance of Banks: An Empirical Study on Indian Banks. Universal Journal of Industrial and Business Management, 4(3), s. 88-96. doi:10.13189/ujibm.2016.040302.

Aydın, G., & Ülengin, B. (2011). Effect of Consumer Based Brand Equity on Firms' Financial Performance. İTÜ Journal of Engineering, 10(2), s. 58-68.

Başgöze, P., Yıldız, Y., & Camgöz, S. M. (2016). Effect of Brand Value Announcements on Stock Returns: Empirical Evidence from Turkey. .Journal of Business Economics and Management, 17(6), s. 1252-1269. doi:10.3846/16111699.2016.1153517

Baydaş, A. (2007). The Financial Value of Brands with Respect to Marketing and an Examination of Businesses Engaged in Foreign Trade. Bilig, 42, s. 127-150.

Carson , R. T., & Sun , Y. (2007). The Tobit model with a non-zero threshold. The Econometrics Journal, 10(3), s. 488-502. doi:/10.1111/j.1368-423X.2007.00218.x

Çelikten, S. (2008). Markalaşma Süreci ve Stratejilerinin İncelenmesi. Uzmanlık Tezi. Ankara: Türk Patent Enstitüsü Markalar Dairesi Başkanlığı.

Ercan, M. K., Öztürk, B., & Demirgüneş, K. (2011). Marka Değerinin Tespiti. İstanbul: IMKB Yayınları.

Farquhar, P. H. (1990). Managing Brand Equity. Journal of Advertising Research, 7-13. .

Gemci, R., Gülşen, G., & Kabasakal, M. (2009). Brands and Conditions of Being Brands . Uludağ University Journal of The Faculty of Engineering and Architecture, 14(1), s. 105-114.

Gerekan, B., & Koçan, M. (2018). A Research on the Analysis of the Change in Brand Value. Journal of Business Research Turk, 10(4), s. 210-228. doi:10.20491/isarder.2018.520

Gerekan, B., Pehlivan, A., & Koçan, M. (2019). The Effect Of Firm Growth On Brand Value: Evidence From Brand Finance Turkey-100. Asian Economic and Financial Review, 9(8), s. 1067-1076. doi:10.18488/journal.aefr.2019.99.1067.1076

Goldberger, A. S. (1964). Econometric Theory. John Wiley and Sons, 11(2).
Haigh, D. (2000). Current Practice in Brand Valuation. London: Brand Finance PLC.
Heberden, T. (2002). Brand Value Management: The Achille's Heel of Many Risk. AFP Exchange, 22(4), s. 58-63.
Honoré, B. E. (1993). Orthogonality Conditions for Tobit Models with Fixed Effects and Lagged Dependent Variables. Journal of Econometrics, 59(1), s. 35-61.
Karpat, A. I. (2016). Marka Yönetimi. İstanbul: İletişim Yayınları.
Kılınç, Y., & Gökdeniz, İ. (2019). The Relationship Between Institutional Investors Ownership and Brand Value: An Application. Journal of Social and Humanities Sciences Research, 5(31), s. 4884-4893.
King, K. (2002). The Value of Intellectual Property, Intangible Assets and Goodwill. K. King içinde, The Valuation and Exploitation of Intangible Assets. EMIS.
Koç, Ş., & Şahin, M. (2018). Tobit Model and an Application . KSU Journal of Agriculture and Nature, 21(1), s. 73-80. doi:10.18016/ksudobil.285929
Liao, T. F. (1994). Interpreting Probability Models: Logit, Probit, And Other Generalized Linear Models. California: Sage Publishing.
Maddala, G. S. (1986). Limited Dependent and Qualitative Variables in Econometrics. . Cambridge: Cambridge University Press.
Mete, M. (2011). The Investigation of Relationship Between Foreign Trade and Industry Production Index in Turkey(1990-2010). Journal of Academic Researches and Studies, 3(5), s. 103-113.
Miller, J., & Muir, D. (2005). The Business of Brands. John Wiley & Sons Incorporated.
Önder, C., & Genç, E. G. (2021). Relationship Between Brand Value And Income Statement Components: A Panel Tobit Analysis On BIST Companies. Istanbul Finance Congress (s. 23-27). Istanbul: Press Academia. doi:10.17261/Pressacademia.2021.1480
Özsaatçi, F., & Köse, Z. (2021). Brand Value As a New Determinant of Foreign Trade. Kahraman Sütçü İmam University Social Sciences Review, 18(2), s. 1379-1399. doi:10.33437/ksusbd.706303
Vanauken, B. (2003). Brand Aid: An Easy Reference Guide to Solving Your Toughest Branding Problems and Strengthening Your Market Position. NY: Amacom.

Appendix

Table A1: BIST 100 Companies according to Sector Groups

Sectors	**Firms**
Food, Beverage and Tobacco	AEFES, BANVT, DARDL, KENT, PENGD, TATGD, TUKAS, TBORG, ULKER
Fabricated Metal Products	ALCAR, ASUZU, ARCLK, FROTO, KARSN, OTKAR, TOASO, TTRAK
Textile, Wearing Apparel and Leather	BOSSA, YUNSA
Other Manufacturing Industry	ADEL
Chemicals, Petroleum Rubber and Plastic Products	AYGAZ, BRISA, DYOBY, GOODY