




“A model proposal for estimating banks’ future value: Evidence from Turkey”

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A MODEL PROPOSAL FOR ESTIMATING BANKS' FUTURE VALUE: EVIDENCE FROM TURKEY

Abstract

Investors make solid decisions when evaluating their investments based on positive indicators the firm may show in the future, rather than based on its past performance. Accordingly, this study aims to investigate the relationship between performance criteria and the most significant value-based criterion; Economic Value Added (EVA). Further, it evaluates the impact of future EVA values on the bank value. Panel Data Analysis and the OLS Regression model are used to estimate the regression equation. The analysis is performed using data of 10 banks on the BIST Banks Index over the period 2011 to 2020. Furthermore, the EVA criterion was converted into standardized EVA (SEVA) by dividing EVA by total assets. The OLS regression analysis results revealed that the model's explanatory power for the SEVA variable is 71.92%. The three variables that have positive correlation with SEVA are earnings per share (EPS) and TOBINQ rates at the 1% significance level and the price to sales growth rate with a degree of significance at 10%. Regarding the Panel Data Analysis results, while the explanatory power of the SEVA variable is 72.14%, its association with the EPS and TOBINQ criteria was found to be significant at the 1% significance level. The empirical investigations reveal that the model developed using the future SEVA as a proxy for bank value is found to be promising, and it is accepted that the SEVA variable can be used instead of the bank value.

Keywords

EVA, performance criteria, bank value, panel data

JEL Classification

C23, G19, G21

INTRODUCTION

Nowadays, investors mainly focus on the real value of an asset, which is identified by comparing the firm value with its market value. Defining the real value and how it should be quantified realistically is considered a tricky problem, since a firm's value will vary greatly depending on the firm's state, its competitive position, the experts who will conduct the valuation, the purposes of the valuation and the valuation techniques. Prior studies that have noted the firm value are mostly based on the relationship between the firm value and performance (operating, financial, etc.). According to the assumption underlying these studies, the value of a firm increases with an improvement in its activities. The firm value is closely related to the firm administration, capital structure, mergers, and a country's legal system. As a result, each factor affecting the firm's cash flows and cost of capital will have an impact on firm value although to different degrees. Hence, pre-determining the effects of these factors will contribute to the realistic calculation of the firm value.

Rather than relying on the firm's past outcomes, investors evaluate their investments based on positive performance signs the firm might show in the future. According to basic finance theory, a firm's real value is defined as the present value of the cash flows that the

firm will generate from its investments, discounted at an appropriate rate. Therefore, the value of the firm mainly depends on its future investment cash flows and the risk level the firm will undertake to generate cash flows.

Banks that act as intermediaries by connecting the savers with a surplus of funds and those in need of funds in the financial markets are the main actors of the financial system. Due to their indispensable role in the financial systems, banks are constantly kept under government supervision. The objective of banks, like that of other commercial institutions in the economy, is to generate profits. However, macroeconomic factors posing risk to the financial system tend to have a considerably more rapid effect on banks, through their significant role in the economy. In addition to macroeconomic factors, such as monetary and fiscal policies, interest rates, exchange rates, and inflation rates, microeconomic factors originating from the bank balance sheet structure also affect the banking sector. The enormous impact of these threats on the banking industry may lead to a financial crisis in countries.

Aside from their key functions, Turkish banks are also aiming to increase their profits by diversifying into a variety of profitable sectors and financial instruments in a mixed structure. Banks need to perform well, since competition among banks in Turkey and throughout the world has become extremely intense. Furthermore, like other commercial enterprises, banks must continually enhance their value in order to increase the shareholders' wealth. Thus, they will be capable of serving both the interests of their shareholders and their customers.

EVA (Economic Value Added), one of the value-based criteria in creating value, is used to represent the value of banks regarding their importance in the financial system

1. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Although the literature on bank value is extensive, very little study was found on performance criteria that explain EVA, on which the hypothesis of this study is built. Finegan (1991), Kleimen (1999), Peixoto (2002), Demirgüneş (2009), Panahi et al. (2014), Kumaran (2017), and Quintiliani (2018) primarily focus on market value, market value added (MVA), shareholders return, working capital measures and profitability measures, with EVA being used as an explanatory or dependent variable. Machuga et al. (2002) tried to analyze the relationship between EVA and Earnings Per Share (EPS) criteria. They considered the EVA and future EPS values, claiming that previous studies only compared factors like share value, etc., and criteria such as EVA and EPS with each other and also did not consider calculating future returns. Their findings proved that EVA contains relative information and can be used to forecast future EPS values (Machuga et al., 2002, pp. 70-71).

Bayrakdaroğlu and Şamiloğlu (2011) used data from 13 Turkish banks on BIST from December 31, 2002 to June 30, 2008. In their study, EVA of Equity (E-EVA), a new modernized form of the value-based criterion, was considered as an independent variable, while market value and stock returns were used as dependent variables. Their findings revealed that the E-EVA criterion has a statistically insignificant relationship with market value and stock returns. They argue that the contribution of the E-EVA criterion to explain the market value and stock returns is restricted and that its application to the Turkish banking industry may be misleading (Bayrakdaroğlu & Şamiloğlu, 2011, p. 33). Aktaş (2012) investigated the relationship between stock returns, EVA, and MVA using data from BIST-30 firms between 2001 and 2009. His study initially looked at the statistical relationship between EVA and MVA (market value added) and found a significantly weak relationship. In the second part of his research, he looked at the relationship between stock returns, Δ EVA and Δ MVA, but found no evidence of a link between the three variables. Unlike studies showing the superiority of criteria based on outcome value, he claims that these criteria cannot be applied in Turkey (Aktaş, 2012, p. 124).

Muraleetharan and Kosalathevi (2014) studied the relationship between EVA and Market Value Added (MVA) measures, which represent market value, using the data of Sri Lankan banks between 2006 and 2012. As a result, based on the R^2 value, it was found that EVA has the power to explain 75% of changes in MVA. Also, Stern and Stewart's claim that EVA, one of the value-based criteria, is the best measure related to the firm values was proved to be valid in Sri Lanka (Muraleetharan & Kosalathevi, 2014, pp. 96-97).

Ongeri (2014), in his study, investigated the traditional accounting-based criteria related to EVA, considering the EVA values of firms per share as the dependent variable, and ROA, ROE, and EPS criteria as the independent variables. The sample comprises 30 commercial banks listed on the Kenya Nairobi stock exchange over the period between 2008 and 2012. His findings revealed a statistically significant relationship between the EVA per share generated by the banks on the Kenya Nairobi stock exchange and all traditional accounting-based criteria (Ongeri, 2014, pp. 197-198). A study conducted by Birkan (2015) examined the relationship between the EVA values and the market values of banks at the end and beginning of the period with panel data analysis using the financial data of the deposit banks on BIST for 48 reporting periods between January 1, 2004 and December 31, 2013. As a result, EVA's explanatory impact on market value changes was found to be the R^2 75% for period-end market value and the R^2 76% for beginning-period market value. The empirical results have found that EVA has a statistically positive impact on bank market value.

Narwal and Shweta (2015) investigated the relationship between value-based criteria and accounting-based criteria with panel data analysis, using the data of 28 banks selected from the public and private sectors in India between 2002–2003 and 2011–2012. Based on the findings of the study, a positive relationship was found between EVA and Return on Assets (ROA) and Return on Equity (ROE) criteria. In the second stage of the analysis, while the impact of MVA on ROA criterion was positive, its correlation with ROE was proved to be negative. As a result, the study emphasized the importance of EVA and MVA in-

dicators in estimating the value of Indian banks (Narwal & Shweta, 2015, pp. 229).

Using a panel regression model, Boztosun (2017) studied the relationship between the value-based EVA and accounting-based ROE measures by applying the current year and one-year lagged values of the stock returns of banks using data of 8 deposit banks on BIST between the years 2005 and 2016. He concluded that the current and one-year lagged stock returns of banks are explained more strongly by the value-based EVA measure than the accounting-based ROE measure and that EVA can be used in the Turkish banking sector (Boztosun, 2017, p. 575).

A study on determining the criteria that best explain shareholder value was conducted by Gounder and Venkateshwarlu (2017) using panel data analysis based on collected data from public and private banks in India over the period 2001 to 2015. In this study, MVA was considered as the dependent variable, while value-based EVA, traditional accounting-based ROE, EPS (earnings per share), and DPS (dividend per share) were used as independent variables. Based on the empirical result, whereas value-based EVA explained most of the change in MVA in public banks, traditional accounting-based EPS explained most of the change in MVA in private banks. Their findings suggest that using EVA can create shareholder value and the DPS criterion also supports the generation of shareholder value (Gounder & Venkateshwarlu, 2017, pp. 156).

Azeem et al. (2018) tested the validity of Stern and Stewart's claim that "EVA is the best measure related to firm values" in the Pakistani banking sector, using the data of 17 public and private banks in Pakistan between the years 2006–2013. Both value-based and accounting-based criteria, such as EVA, ROE, and Price/Earnings, were used in this study. Consequently, it was revealed that banks function similarly, regardless of their private or public structure. Also, Stern and Stewart's assumption was proved to be valid in the Pakistani banking sector.

The study conducted by Figenkaplan (2020) examined the relationship between the market values of banks and their EVA values with panel cointegra-

tion and Causality Test using the data of 7 publicly traded deposit banks in Turkey between 2004 and 2018. The findings of the study revealed that there is a long-run cointegration relationship between EVA and market value. On the other hand, Calayoğlu (2020) considered EVA's performance criteria by dividing the BIST Informatics Index into sub-sectors. For the model developed using the EVA variable, ROA, ROE, EPS, Price/earnings ratio, M/B, and ROS (return on sales) criteria were applied in this research. Based on the findings, the EVA variable was reported to be explained by the ROA and ROE criteria in the software sub-sector, the EPS in the hardware marketing sub-sector, and the ROE and ROS criteria in the communication sub-sector, based on the regression analysis results for the years 2008–2017.

In reviewing the literature, the EVA value was used as an absolute value, but it was not taken into account on a firm basis. In contrast to earlier studies, in this paper, the EVA variable refers to standardized (SEVA), which is calculated by dividing EVA by total assets and leading to the development of a new model proposal. To investigate the criteria that best explain the future EVA measure as a proxy for bank value, the following hypothesis has been tested:

H_1 : Performance criteria have a significant impact on EVA.

2. RESEARCH METHODOLOGY

2.1. Data set and model development

During the model development process, performance criteria were developed using the data from ten banks on BIST Banks Index between 2011–2020, and all collected bank-specific data turned into an acceptable format for analysis. The banks used in the analysis are presented in Table 1. This study aims to investigate the relationship between EVA and performance criteria that were used as proxies for bank values. In addition, the ability of the one-year lagged performance criterion to explain the EVA value was analyzed by using an econometric model. Based on the econometric model developed in this study, the dependent variable is the standardized EVA value with the total

assets ratio at time t , and the independent variables are the values of the eight performance criteria in Table 1 at time $t - 1$. A total of nine criteria were used to develop an econometric model in which the power of the criteria to explain the future EVA value as a dependent variable was investigated.

Table 1. The Information of banks used in the analysis

Bank Code	Bank Name	Website
AKBNK	Akbank Turkey Joint Stock Bank	http://www.akbank.com/
ALBRK	Albaraka Joint Stock Bank	http://www.albarakaturk.com.tr/
DENIZ	DenizBank Turkey Joint Stock Bank	http://www.denizbank.com/
GARAN	Turkey Garanti BBVA Joint Stock Bank	https://www.garantibbva.com.tr/
HALKB	Turkey HalkaBank Turkey Joint Stock Bank	https://www.halkbank.com.tr/
ISCTR	İşBank Joint Stock Bank	https://www.isbank.com.tr/
QNBFB	QNB FinansBank Joint Stock Bank	https://www.qnbfinansbank.com/
SKBNK	Şekerbank Turkey Joint Stock Bank	https://www.sekerbank.com.tr/
VAKBN	Vakifbank Turkey Joint Stock Bank	https://www.vakifbank.com.tr/
YKBNK	Yapikredi Turkey Joint Stock Bank	https://www.yapikredi.com.tr/

All bank-specific data used in this study are collected from four databases namely, Borsa İstanbul (BIST), Public Disclosure Platform (KAP), Banking Regulation and Supervision Agency (BRSA), and Finnet Expert databases. A total of nine, one dependent, and eight independent variables were used in the developed models. The independent variables represent the performance criteria. The definition of the variables used in the analysis is presented in Table 2.

EVA as the dependent variable among the variables in Table 2, applied in the model after standardization by dividing by total assets. Following the standardization of the EVA variable in the analysis, it was coded as SEVA. The criteria for calculating the EVA measures developed by the consulting firm Stern & Stewart are difficult to define. The consulting firm Stern & Stewart recommends approximately 164 adjustments to calculate a real EVA value. It is quite difficult to make

Table 2. The definition of variables

Variables	Code	Definition
Standardized Economic Value Added	SEVA	Net Operating Profit After Tax (NOPAT) – Weighted Average Cost of Capital (WACC) · Capital Used (Natural Log of EVA)/Total Assets
Price to Earnings Ratio	PE	Market Value/Annual Net Profit Market Value= share price of a company * number of outstanding shares
Price to Cash Flow Ratio	PCF	Market value/Cash Flows
Earnings Per Share	EPS	Market Value/Outstanding Shares
Market to Book Value	MB	Market Value Per Share/Book Value Per Share
Price to Net Sales	PS	Market Value/Net Sales
Dividend Yield	DY	Total Paid Dividend/Market Value
TOBIN Q Ratio	TOBINQ	Market Value of Assets/Estimated Replacement Value of Assets (Re-establishment Cost)
Price to Net Sales Growth (Percentage)	PSGROWTH	Market Value/Net Sales Growth %

all these mentioned corrections in countries such as Turkey, where the capital markets are not fully developed. Moreover, since bank balance sheet structures differ from those of commercial firms, different parameters must be measured in order to calculate the EVA value. Therefore, the EVA values used in this study were collected from the Finnet Expert Package Program. Furthermore, the Finnet Package Program was used to obtain the Market Value/Net Sales Growth Percentage (PSGROWTH) variable given in Table 1.

Panel data was used for the application of analysis to develop econometric models by STATA 16.0 and E-VIEWS 9.0 package programs.

2.2. Results

From the results of the descriptive statistics given in Table 2 the mean value of SEVA is 0.194 with a standard deviation of 0.572. On the other hand, the mean value of the market to book ratio(MB) is 484.059 with the maximum and minimum values of 10,100.040 and 0.490 respectively. Based on

the result of Table 2, the variable with the highest mean and standard deviation is MB, while the lowest variable is SEVA. From the gap of maximum and minimum values of MB, it is possible to understand the existence of great disparity between the banks in the market to book ratio.

The results of correlation coefficients are given in Table 4 in order to examine the structure of the relationship and provide an overview of the correlation between the variables in the research model.

The findings part of the study begins with the OLS regression analysis and in the next stage, continues with the results of panel data analysis. To perform OLS regression and panel data analysis, some assumptions need to be tested. These assumptions are respectively: Inter-Unit Correlation (cross-section dependency), heteroscedasticity, and Autocorrelation. Making predictions about the variables by ignoring these assumptions will cause the t values of the variables to lose their validity (Tatoğlu, 2016, p. 8). It is impossible to dis-

Table 3. Descriptive statistics

Variable	Mean	Max	Min	Std. dev.	Obs.
SEVA	0.194	2.781	-0.018	0.572	100
PE	66.480	541.199	0.000	120.671	100
PCF	59.895	507.018	0.000	110.945	100
EPS	10.031	158.676	0.000	29.040	100
MB	484.059	10100.040	0.490	1578.010	100
PDNS	31.430	335.892	1.086	65.388	100
DY	14.524	702.929	0.000	96.098	100
TOBINQ	49.384	896.036	0.919	153.398	100
PSGROWTH	2.552	70.193	-0.819	9.485	100

Table 4. Correlation coefficients

Variables	SEVA	PE	PCF	EPS	MB	PS	DY	TOBINQ	PSGROWTH
SEVA	1	–	–	–	–	–	–	–	–
PE	0.566	1	–	–	–	–	–	–	–
PCF	0.566	0.729	1	–	–	–	–	–	–
EPS	0.716	0.461	0.461	1	–	–	–	–	–
MB	0.777	0.644	0.647	0.738	1	–	–	–	–
PS	0.552	0.782	0.687	0.440	0.659	1	–	–	–
DY	0.165	0.348	0.344	0.075	0.225	0.302	1	–	–
TOBINQ	0.738	0.606	0.605	0.751	0.786	0.594	0.243	1	–
PSGROWTH	0.270	0.620	0.631	0.262	0.445	0.687	-0.008	0.216	1

cuss a valid statistical model without testing these assumptions before making a regression analysis. To test the assumptions, firstly the correct regression model must be identified. Furthermore, to make sure whether the model in this study is a random effect or fixed effect, the Hausman test was applied and the Random Effect Model was accepted as the right model at 0.05 significance level as presented in Table 5.

Table 5. Diagnostic tests results

Hausman test	
Chi-Square statistics	P-value
-1.891	0.9841*
Heteroscedasticity (Levene, Brown, and Forsythe)	
t statistics	P-value
W0 = 11.868	0.0000*
W50 = 9.431	0.0000*
W10 = 12.536	0.0000*
Autocorrelation	
Durbin Watson value	Baltagi-Wu LBI value
1.8976	1.9159
Cross-section (Pesaran CD _{LM} test)	
t statistics	P-value
7.376	0.0000*

Note: * 0.05.

The Pesaran CD (2006) test was then used to test the cross-section dependency problem, followed by the Levene, Brown, and Forsythe tests for heteroscedasticity and finally the Durbin Watson and Baltagi-Wu LBI tests for autocorrelation problems. The results of assumption statistics of all models are shown in Table 5.

Regarding the existence of autocorrelation in the developed model, the fact that the Durbin-Watson and Baltagi-Wu LBI values are close to the value 2, suggests that there is no autocorrelation in the first order (Wooldridge, 2002). The developed models do not appear to have an autocorrelation problem. At 0.05 level of significance, it was proved that there is heteroscedasticity and cross-section problem based on the results presented in Table 5. These problems were resolved with robust estimators, the results of which are reported in Tables 6 and 7. Furthermore, the variables must be stationary in panel data analysis. To test the stationarity of the variables, the second generation unit root test was applied using the Pesaran (2007) unit root test, and based on the test results it was identified whether the variables were stationary or not by looking at the CIPS test statistics and CIPS critical values. All of the variables in the models were made stationary before being applied in the regression analyses.

The models estimated according to the Random Effects predictors are shown with the following equation:

$$\begin{aligned}
 SEVA_{it} = & \beta_0 + \beta_1 PE_{it-1} + \beta_2 PCF_{it-1} + \\
 & + \beta_3 EPS_{it-1} + \beta_4 MB_{it-1} + \beta_5 PS_{it-1} + \\
 & + \beta_6 DY_{it-1} + \beta_7 TOBINQ_{it-1} + \\
 & + \beta_8 PSGROWTH_{it-1} + u_{it} + \mu_{it} .
 \end{aligned}
 \tag{1}$$

Following the completion of all required diagnostic tests, the variables for the analysis were established using the data from BIST Banks Index for the years 2011–2020 and the analysis model was designed. Table 6 presents the results of the OLS regression analysis of the model developed to investigate future bank values.

Table 6. OLS regression results

Dependent variable: SEVA			
Method: OLS Regression			
No. of banks:10			
Period: 2011–2020			
Variables	Coef.	Std. err	Z-statistics
Cons.	−.0057	0.0091	−0.63
PE	0.0032	0.0024	1.35
PCF	−.0041	0.003	−1.37
EPS	0.0094***	0.0004	21.26
MB	5.52e−06	1.30E−05	0.42
PS	0.0006	0.001	0.63
DY	−4.89e−06	9.20E−05	−0.05
TOBNIQ	0.0021***	0.0001	15.88
PSGROWTH	0.0024*	0.0014	1.7
F value	5554.76**		
R-squared (R ²)	0.7192		

Note: *, ** and *** indicate significance levels at 0.10, 0.05 and 0.01.

Regarding the results of panel OLS regression analysis, the power of the model to explain the changes in the SEVA value was $R^2 = 71.92\%$. The variables in the developed model can explain about 72% of changes in the SEVA value, while the remaining 28% is explained by variables outside the model. From the results of Table 6, the SEVA variable was found to be associated with EPS and TOBNIQ at 1% and with PSGROWTH at a 10% level of significance. On the other hand, no significant relationship was found between other criteria in the model and SEVA values. EPS, TOBNIQ, and PSGROWTH criteria are significantly and positively related to the SEVA value. In other words, with an increase in these criteria, the future SEVA values of banks also increase. This result reveals that the one-year delayed SEVA value can be significantly and positively affected by some criteria.

In general, based on the results of the Panel OLS Regression, it is proved that the model established is successful and effective in explaining the SEVA criterion chosen to represent the bank value. In addition, for interest groups, especially for shareholders, the model developed suggests that they should focus on the EPS, PSGROWTH, and TOBNIQ criteria. For the panel model, Hausman Test was applied and, as mentioned before, the analysis was applied with Random Effects Model according to the Hausman Test result. It is assumed that all the problems related to diagnostic tests assumptions shown in Table 5 are resolved with the Arellano,

Froot, and Rogers Resistive Estimator. The results of the panel data analysis are presented in Table 7.

Table 7. Panel regression results

Dependent variable: SEVA			
Method: Random Effects Model			
No. of banks:10			
Period: 2011–2020			
Resistive estimator: Arellano, Froot, and Rogers			
Variables	Coef.	Std. err	Z-statistics
Cons.	−0.0057	0.0015	−3.69
PE	0.0032	0.004	0.8
PCF	−0.0041	0.005	−0.82
EPS	0.0094***	5.85E−05	16.93
MB	5.52E−06	1.22E−05	0.45
PS	0.000691	0.000876	0.79
DY	−4.89E−06	3.56E−05	−0.14
TOBNIQ	0.00217***	0.000142	15.27
PSGROWTH	0.002464	0.002835	0.87
F value	1.60E+09***		
R-squared (R ²)	0.7214		

Note: *, ** and *** indicate significance levels at 0.10, 0.05 and 0.01. Arellano, Froot, and Rogers standard error and *t*-statistics values are shown in the table.

The power of the random effects model to explain the changes in the SEVA variable is found to be $R^2 = 72.14\%$. The variables in the developed panel model explain approximately 72% of the changes in the SEVA value, with the remaining 28% explained by variables outside the model. The results of Table 7 indicate that the EPS and TOBNIQ criteria are associated with the SEVA at a 1% significance level. The impact of EPS and TOBNIQ criteria on SEVA is positive and increases the future SEVA value positively.

According to the panel regression results, the developed model is quite successful and can explain the SEVA criterion being used to represent the bank value. Furthermore, this model suggests that individuals or organizations interested in bank values, should concentrate on the EPS and TOBNIQ criteria.

In general, based on the findings of the analyses, it has been proved that the value of the SEVA criterion at time *t*, which is one of the leading value-based criteria and was chosen to represent the bank value, is related to the values of the performance measures at time *t* − 1, hence the explanatory power of the model established is quite high.

In this study, it is proven that the claim of Stern & Stewart consultancy company that “EVA is the best criterion related to firm values, among the value-based criteria” is valid for BIST Banks.

3. DISCUSSION

This study was conducted using data from ten banks on the BIST Banks Index covering the 10-year period from 2011 to 2020 with the objective of developing econometric models based on the SEVA criterion in order to reveal a model that best explains the bank’s value and contribute to the current literature by adding a new perspective. SEVA is considered as one of the criteria that best represents the firm’s value to shareholders and interest groups. Models are analyzed using OLS Regression and Panel Data Analysis methods. The dependent variable is “standardized EVA values in the future” at time t , while the independent variables are selected as MB, PS, PE, PCF, DY, TOBINQ, EPS, and PSGROWTH criteria at time $t - 1$.

According to the OLS regression results, it was revealed that the model developed is acceptable and there is a significantly positive relationship between the future SEVA criterion and the EPS, TOBINQ, and PSGROWTH criteria. Additionally, the model suggests that interest groups should focus much of their attention on EPS, PSGROWTH, and TOBIN Q criteria. These results are consistent with those of Machuga et al. (2002) and Muraleetharan and Kosalathevi (2014).

The power of the model developed with the future SEVA criterion and performance measures was relatively strong in describing the future SEVA value as a result of the Panel Data Analysis. It can therefore be assumed that the claim of Stern & Stewart consulting firm that “EVA from value-based criteria is the best criterion related to firm values” is valid for BIST Bank companies. These findings are consistent with the findings of Azeem et al. (2018) and Boztosun et al. (2017).

CONCLUSION

This paper provides a test of the relationship between the performance criteria and the EVA, which is the most often used value-based criterion. It also indicates the contribution of one-year lagged EVA values to firm value, that is, the bank value. As a result, unlike traditional firm valuation criteria or approaches, it was meant to present a new perspective on firm value using the EVA criterion.

In this regard, since investors expect a higher return than the risk they take by their investment, every strategic choice made by a firm’s management in response to shareholder demands should be shaped to increase the firm’s value. Also, firms have begun to focus on the criteria that will add value to the firm, rather than using the accounting profit created based on the historical cost in order to grow rapidly and maximize firm value. Economic Value Added (EVA) criterion, which emerged first among the value-based performance measures, is the most commonly used criterion to accurately estimate the firm value and to develop the perception of value creation in firms. EVA is a performance measure that can provide more accurate results than other measures in determining the real economic profit of firms. EVA is also the clearest criterion to indicate whether the firm is creating value for shareholders or not and provides significant advantages over traditional accounting criteria since it takes into account both the direct cost of debt and the cost of equity, which is an indirect cost item. This distinction, along with being critical for the firm’s partners, demonstrates the amount of the risk related to the partner’s investment.

The analyses revealed that the econometric model developed with EVA as an indicator for bank value was quite successful. Accordingly, it has been accepted that the EVA criterion can be used to substitute for bank values. In fact, this study presents a model related to the values created by banks to interest groups such as investors, managers, and shareholders. As a result, it was revealed that the model applied can explain changes in the values that banks will generate in future at a significant level and suc-

cessfully estimate the banks' future values. In other words, the present study has achieved its goal by proving that the developed model can be applied by anyone who intends to use value-based criteria and that value-based criteria are highly effective in creating value. Furthermore, it has been indicated that value-based criteria can be used in value determination studies efficiently. This study is expected to add a new perspective to the academic literature in this regard. Therefore, further research is suggested with more focus on developing several models with data, including more performance criteria and longer analysis periods, and subsequent comparative analyzes of these models.

AUTHOR CONTRIBUTIONS

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