

The Relationship between Capital Structure and Bank Performance of Listed Banks of Turkey under IFRS Adoption

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Abstract: This study is an attempt to analyze the relationship that exists between bank performance and capital structure of listed banks in Turkey under IFRS adoption. The study employs Fully Modified Least Square (FMOLS) and Dynamic Ordinary Least Square (DOLS) to analyze panel data of listed banks in Turkey. The results of the study provides that Return on Assets and Return on Equity are negatively affected by leverage in Turkish listed banks, thus bank performance is negatively impacted by leverage. Bank size is also found to have significant negative impact on return on equity and stock price of listed banks in Turkey but not on return on assets. Growth rate of banks is found to have a significant impact on Return on Equity but not on Return on Assets. The study results also gives that IFRS adoption in Turkish listed banks significantly affect Return on Equity and Return on Assets positively. Therefore, the adoption of IFRS standards by listed banks in Turkey improves the performance of banks. This study, thus recommends the adoption of IFRS standards in the banking sector of Turkey as this will greatly improve the performance of banks.

Keywords: Return on Assets; Return on Equity; IFRS; Stock price; Capital structure; Bank performance.

JEL Classification: G30, C33

1. Introduction

Organizations, firms and institutions finances their activities through debt finance or equity finance. There is a debate in the literature of accounting and finance on which method of financing firm activities is the best in increasing the performance of firms. The proxies of firm performance according to various studies include return on assets, return on equity, stock price and Tobin Q, see for example (Abdullah & Tursoy, 2019; Awunyo-Victor & Badu, 2012; Sathyamoorthi et al., 2019; Kalash, 2019). Various studies in the literature have analyzed the relationship between company performance and capital structure. It is of paramount importance to examine the association between capital structure and firm performance of institutions in order to know the type of capital structure to apply in organizations to be profitable.

There are capital structure various theories and these include the Modigliani-Miller position by Modigliani and Miller (1958), the tradeoff theory, the pecking order theory, the agents cost theory, the market timing theory, the free cash flow theory and the signaling theory (Cotei & Ferhat, 2009; Butt, Khan & Nafees, 2013; Adomako & Danso, 2014; Bundala 2012). The Modigliani-Miller proposition has been long questioned on its practicality with many scholars alluding that it is not practically possible to be applicable in the real world (Abdullah & Tursoy, 2019). The Modigliani-Miller proposition assumes that capital structure exists in a perfect world and that financing decisions affect not the value of the organization. It alludes that the value of the organization is affected by its size and that they are no asymmetric information, that is, transaction costs does not exist and and no taxes (Modigliani & Miller, 1958). Of great importance are the real-world capital structure theories and these are the pecking order theory, tradeoff theory, agents cost theory as well as the market timing theory.

The theories outlined above shows how important capital structure is on the performance of a firm. However, the question is, is capital structure the only phenomena that significantly affect the performance of a company? International Financial Reporting Standards (IFRS) introduction has seen a great change in affecting the way how the firm performs. Other scholars such as Abdullah and Tursoy (2019) argue that the adoption of IFRS standards in the listed companies of German has significantly increased the performance of firms in a positive way. Thus, there is need to examine how IFRS adoption affects firm performance in various institutions around the world.

There is still gap that is existing in the literature on the impact of IFRS adoption on the performance of firms since little has been done to investigate the association between IFRS adoption and firm performance. Thus, this study is aimed at extending the study on the impact of IFRS adoption on firm performance on listed banks of Turkey. IFRS standards were first implemented in listed companies of Turkey in 2005. The institutions that contributed to the IFRS process implementation in Turkey include the Public Oversight Accounting and Auditing Standards Board of Turkey, the Banking Regulation and Supervision Agents, the Turkish Accounting and Standards Board, and the Capital Markets Board of Turkey. The CMB is considered as the most influential institution that contributed to IFRS standards adoption in Turkey with other scholars including the Turkish Accounting Standards Board as well. In 2006 to 2008 the Turkish Accounting Standards Board became the only board to issue standard. IFRS adoption in Turkey was done mainly for encouraging development and

adjustment of standards and to ensure correct accounting standards that are dependable, comparable and understandable by the public.

In this study, we make use of Fully Modified Ordinary Least Square (FMOLS) and Dynamic Ordinary Least Square (DOLS) to examine the association between capital structure and the organizational performance as well as the association between IFRS adoption and the performance of listed banks of Turkey. This study covers the period that stretches from 2002 to 2019. In this study we seek to answer three basic questions, that is, (1) what is the association between capital structure of listed banks in Turkey and bank performance, (2) what is the effects of IFRS adoption on bank performance of the listed banks of Turkey, and (3) what is the relationship between bank performance of listed banks of Turkey and other independent variables such as bank size and growth rate.

The rest of this study is arranged as follows the following section, that is, section 1 provides the background information on the history of IFRS adoption in Turkey. Section 2 provides a well detailed analysis of the literature review both theoretical and empirical studies. In Section 3 of this study, we provide information about data and the methodology that has been employed in this analysis. Section 4 of this study goes on to provide data analysis and results of this study. At the end of this study, we provide the conclusion of our findings together with policy recommendations, study limitations and future recommendations.

2. Empirical Studies

Capital Structure Relationship with firm Performance

Many studies has been done in the past in a bid to investigate how capital structure of firms impacts firm performance. The proxies of capital structure are determined as debt and equity. Many studies use leverage in the form of total debt to total assets ratio to proxy capital structure (see in Abdullah & Tursoy 2019; Karadeniz et al. 2009). However, other studies on top of total debt to total assets, uses long-term debt to total assets and short-term debt to total assets as proxies of capital structure (see, for example, Twairesh 2014; Tifow & Savilir 2015; Sathyamoorthi et al. 2019).

Return on equity (ROE) and return on assets (ROA) are the most widely used proxies of firm performance (Nassar 2015; Twairesh 2014), while other studies include stock price (Abdullah & Tursoy 2019) and many other studies use Tobin's Q on top of ROE and ROA to proxy firm performance (Tifow & Sayilir, 2015; Sathyamoorthi et al., 2019; Ayuba et al., 2019).

The findings of the study by Abdullah and Tursoy (2019), confirms the existence of a positive association between capital structure and the

performance firms. However, the study by Awunyo-Victor and Badu (2012) observed that there is a negative association between leverage and performance on Ghanaian banks listed on Ghana Stock Exchange. The banks are also highly geared, since they rely more on short term debt due to bank lending rate that is relatively high, Awunyo-Victor and Badu (2012). Sathyamoorthi, Baliyan, Dzimiri, and Dima (2019) also concur with the findings of Awunyo-Victor and Badu (2012) that there is a significant negative association between firm performance (Tobin's Q, ROE and ROA) with capital structure proxy (total debt to total assets). The study's results indicate the existence of a significant negative impact of high debt financing on the performance of financial firms in the consumer service sector of Botswana, Sathyamoorthi, et al. (2019).

Furthermore, Tifow and Sayilir (2015) provides for a significant negative association between short term debt/total assets, a proxy of capital structure, with proxies of firm performance such as Tobin's Q and ROA. a proxy of capital structure, which is long-term debt/total assets, was found to have a negative association with Tobin's Q and ROE and positively correlated to ROA (Tifow & Sayilir, 2015). Moreover, according to Nassar (2015), a negative association between capital structure and the performance of companies in the Borsa Istanbul listed firms that is significant was found. Kalash (2019) determined the existence of a negative impact of leverage on firm profitability and provides that the impact is high for firms with high agency costs (high growth opportunities and few tangible assets) and low on firm with free cash flow agency cost. On the other hand, Twairesh (2014) alludes that when ROA is a dependent variable, firm size significantly impacts firm performance. Ayuba, et al. (2019) argues that all explanatory variables affect the value of Insurance companies in Nigeria. However, the study is of the conclusion that short term debt should be used instead of long-term debt for Insurance companies because it increases the value of the firm, Ayuba et al. (2019).

Relationship between Firm Performance and IFRS Adoption

Kargin (2013) by making use of Ohlson model provides that in Turkey market value is significantly related to book value as well as on earnings per share. The findings of the study also provide that after the IFRS adoption the accounting information's value relevance has greatly improved especially from the book values considerations and not on earning's value relevance in Turkey, Kargin (2013). Adyei at al., (2020) in a study of listed companies in Africa also provides that IFRS adoption positively and significantly impacts firm value, and that the impact is more pronounced in more commitment rule of law environments. Firms that have high

financial constraints degree indicates an increase in firm value. Also, full implementation of IFRS adoption provides high benefits than in partial or modified adoption Adyei et al., (2020).

In Turkey, Uyar and Gugormus (2013) in his findings alludes that IFRS adoption has led to great improvements on the accounting quality as well as improving the activeness of the market. Kargin (2013) also found that in the post-IFRS period in Turkey accounting information's value has significantly improved if we consider book value, with less significant improvements when earnings are considered. In addition to that, Abad et al., (2016) in the study in Spain provides that a reduction in information asymmetry after the IFRS adoption is observed. The shift from local accounting standards to IFRS adoption is observed to have some significant benefits to the market even when there is weak level of enforcement. Adoption of IFRS increases the financial reporting's quality as well as the disclosure, thereby enhancing financial information comparability, Abad et al., (2016). Pascan (2015) provide that the factors that influences accounting quality are legal, political and accounting standards in Europe.

3. Methodology and Data

3.1. Data

This study is aimed at analyzing the association between bank performance and capital structure of listed banks of Turkey. We also seek to find how the adoption of IFRS affect the listed banks' performance in Turkey. Thus, to ascertain this association between the performance of Banks and capital structure, in this study Return on Equity (ROE), Stock price and Return on Assets (ROA), is used to proxy bank performance. We also use Total debt/total assets ratio as leverage ratio which proxy capital structure. In this study we also use growth rate and bank size as control variables of the model and IFRS is the dummy variable.

All the data was retrieved from the data streams by downloading financial reports of listed banks of Turkey and retrieve the required data. Annual data is used from 2002 to 2019. The period of study was chosen after careful consideration of various factors, that is, the study period was chosen in such a way that it can cover the pre-IFRS adoption and post-IFRS adoption periods in Turkey. Thus, IFRS was adopted in 2005 in Turkey, hence a date before 2005 would be a desirable starting date. Moreover, the study period was also chosen after carefully considering the availability of data of listed banks in Turkey. For example, it is observed that for the period before 2002 very few listed banks in Turkey had all their data available hence taking the starting period to be before 2002 will mean few banks

whose data is available will be considered for the study. It follows therefore that; few banks may not be enough to fully represent the total population of Turkish listed banks. All listed banks of Turkey are used in this study whose data was available for the period mentioned above. Banks whose data was not available for the period 2002 to 2019 were automatically excluded from the study. Because of that, some listed banks are found not to have up to date data for the variables under study in the period mentioned and hence only 11 listed banks are used in this study, (Akbank, Alternatif bank, Garanti bank, Halk bank, Hongkong and Shanghai Banking Corporation (HSBC), Turkish Economic Bank (TEB), Is bank, Vakif bank, Yapi Kredi bank, Ziraat bank and Kalkanma bank), and these are the largest banks in Turkey.

Table 1: List of Turkish Banks under Study in Order of their Size as of December 2019

<i>Rank</i>	<i>Bank name</i>	<i>Size (total assets in TL)</i>
1	Ziraat	109.4 billion
2	Turkye Is	78.8 billion
3	Halk	76.9 billion
4	Vakif	70.6 billion
5	Garanti	65.9 billion
6	Yapi Kredi	65.2 billion
7	Akbank	60.7 billion
8	TEB	18.1 billion
9	HSBC	5.9 billion
10	Alternatif	4.9 billion
11	Kalkanma	3.3 billion

ROA is found by dividing net income with total assets and shows the percentage income generated per each unit of asset employed in a bank. ROE is expressed as net income/total equity which represents the percentage income generated per each unit of equity invested. Stock price presents market price of stocks of the firm. These three variables are used to proxy firm performance, see for example (Abdullah & Tursoy 2019; Sathyamoorthi et al. 2019; Awunyo-Victor & Badu 2012; Twairesh 2014).

Total debt to total assets ratio is calculated as a ratio between total debt and total assets of a bank and is the leverage ratio of a bank. It shows how much percentage of debt that is used by a bank to finance its total assets. If a bank uses more debt than equity then it is said to be highly geared. On the other hand, a bank that uses more equity than debt is low geared. Growth rate refers to the percentage change of the total assets of a bank from time to time, it shows whether the bank is growing or shrinking in its size. The bank size is the total assets of a bank in million Turkish Lira, that is, its worthy and

adoption of IFRS is proxied 0 for periods when IFRS was not adopted (before 2005) and 1 to proxy periods of IFRS adoption (after 2005).

ROA, ROE and Stock price are used as dependent variables of the model, while total debt total assets ratio, and IFRS adoption are explanatory variables. Growth rate and bank size are used as control variables of the model. In table 3 below we provide a summary on the list of variables under study together with their types, measurement and description.

Table 2: Variables Description

<i>Variable</i>	<i>Type</i>	<i>Measure</i>	<i>Description</i>
ROA	Dependent	Financial performance	Net income to total assets
ROE	Dependent	Financial performance	Net income to total equity
Stock price	Dependent	Market performance	Per share market price
Leverage	Explanatory	Capital structure	Total debt/total assets
IFRS	Dummy	Financial regulatory change	Before and after Jan. 1, 2005
Bank size	Control	Total assets	Year-end total assets
Growth rate	Control	Total assets	The change in total assets as percentage

3.2. Method and Model

In this study we make use of Cointegration Regression analysis, that is, Fully Modified Ordinary Least Square (FMOLS) that was proposed by the work of Phillips and Hansen (1990) as well as Dynamic Ordinary Least Square (DOLS) that pioneered by the work of Stock and Watson (1993), to ascertain the association between the dependent variables (bank performance) and the exogenous variables, capital structure, together with IFRS adoption, bank size and growth rate. We start by providing the correlation analysis and descriptive statistics of the variables under study before running FMOLS and DOLS. Thereafter, FMOLS and DOLS will follow a three-step analysis as explained in the three sections that follow.

3.2.1. Unit Root Test

Engle and Granger (1987) together with the work of Granger (1986) provides that if two variables say Y and X are non-stationary at level and stationary at first difference, that is, if they have the same order of integration, then a cointegration relationship that is stationary at level exists. Thus, in this study since we are employing cointegration regressions, we start by checking if all the variables under study are non-stationary at level and stationary at first difference by making use of unit root test analysis. We employ Augmented Dicker Fuller (ADF) test and Phillips Peron (PP) test to check for unit root test in each and every variable (Box & Jenkins, 1976; Gujarati, 2004; Granger, 1986; Engle & Granger, 1987). The ADF test was

pioneered by Dickey and Fuller (1979) and it is an extension of the Dickey test that was pioneered by Dickey (1976). The original Dickey test was only capable of detecting stochastic trend and not deterministic trend and it is the ADF test that is capable of dictating both stochastic and deterministic trend in a time series, Gujarati (2004). The PP test of unit root test was pioneered by Phillips and Peron (1988) and can be used in conjunction with the ADF test for robustness, Granger (1986).

3.2.2. FMOLS and DOLS

For the purpose of this study the following equations represent the statistical representation of the cointegration regression (FMOLS and DOLS) used in this study. Equation 3 below shows the relationship between ROA and the explanatory variables total debt total assets ratio, IFRS adoption, growth rate and bank size, equation 4 is the relationship between ROE and the explanatory variables and equation 5 is the relationship between Stock Price and the explanatory variables mentioned earlier on.

$$ROA = \beta_0 + \beta_1 TDTA + \beta_2 IFRS + \beta_3 G + \beta_4 SIZE + e_t \quad (3)$$

$$ROE = \beta_0 + \beta_1 TDTA + \beta_2 IFRS + \beta_3 G + \beta_4 SIZE + e_t \quad (4)$$

$$SP = \beta_0 + \beta_1 TDTA + \beta_2 IFRS + \beta_3 G + \beta_4 SIZE + e_t \quad (5)$$

Therefore, in this study we follow the equations presented in equation 3; 4; and 5 above to ascertain the capital structure association with the performance of firm, IFRS adoption, bank size as well as growth of listed banks in Turkey. The statistical representation models above will be applied in FMOLS and DOLS.

4. Data Analysis and Results

4.1. Unit Root Test Results

Unit root test is one of the most crucial tests in time series analysis, see for example (Gujarati, 2004; Adhikari & Agrawal, 2014; Box & Jenkins, 1976; Engle & Granger, 1987). In this study we provide the unit root results of the variables under study in table 6 below. The results according to Augmented Dickey Fuller test and Philips Peron test indicate that the variable IFRS adoption is stationary at level; and ROA, ROE, total debt total assets ratio, variables stock price, bank size and growth rate are stationary at first difference. Therefore, in this study we observe that our variables are that has been employed in this study are have the same order of integration of one which is one of the prerequisites of cointegration regressions. It is only IFRS adoption which is not integrated of order 1. Thus, in the next section we test for cointegration.

Table 3: Unit Root Test Results

	ADF		PP		Order of Cointegration
	Statistic	P-value	Statistic	P-value	
ROA	84.9141	0.0000**	795.458	0.0000**	I (1)
ROE	72.1975	0.0000**	604.727	0.0000**	I (1)
STOCK	97.2336	0.0000**	775.016	0.0000**	I (1)
TDTA	79.1088	0.0000**	160.302	0.0000**	I (1)
SIZE	55.2565	0.0001**	139.180	0.0000**	I (1)
GROWTH	140.005	0.0000**	1829.54	0.0000**	I (1)
IFRS	77.7143	0.0000**	143.077	0.0000**	I (1)

**significant at 1% level

*significant at 5% level

4.2. Cointegration Test Results

This study employs two methods of cointegration test to see if the variables under study are cointegrated or not. The first method applied is the Pedroni cointegration test and the second one is Kao cointegration test. In table 7 below of this study we provide the results of Pedroni cointegration results. The results in table 7 below shows that for ROA, ROE, and stock price dependent variables with total debt, total debt total assets ratio, bank size, growth rate and IFRS independent variables are cointegrated at 1%, 5% and 10% level of significant as per Pedroni cointegration results. This implies that they have a long-run relationship, Granger (1986).

Table 4: Pedroni Cointegration Test Results

Dependent Variable	Within-dimension				Between-dimension		
	Statistic	P-value	Weighted Statistic	P-value	Statistic	P-value	
ROA	Panel v-Statistic	3.0997	0.0010**	-0.5863	0.7212		
	Panel rho-Statistic	-2.8046	0.0025**	-0.6559	0.2559	0.7388	
	Panel PP-Statistic	-14.673	0.0000**	-8.2098	0.0000**	-8.6694	0.000**
ROE	Panel ADF-Statistic	-3.6432	0.0001**	-1.4107	0.0792	-1.0015	0.158
	Panel v-Statistic	1.9276	0.0270*	0.0302	0.4879		
	Panel rho-Statistic	-0.8649	0.1935	-1.6161	0.0530	-0.5601	0.287
Stock	Panel PP-Statistic	-4.3189	0.0000**	-6.9564	0.0000**	-9.3959	0.000**
	Panel ADF-Statistic	-0.2230	0.4117	-2.4432	0.0073**	-3.5508	0.000**
	Panel v-Statistic	6.8766	0.0000**	-1.8550	0.9682		
	Panel rho-Statistic	2.8520	0.9978	2.0206	0.9783	3.1495	0.999
	Panel PP-Statistic	4.6641	1.0000	-8.0523	0.0000**	-12.102	0.000**
	Panel ADF-Statistic	2.3463	0.9905	-3.3007	0.0005**	-3.200	0.000**

**significant at 1% level

*signifcant at 5% level

In addition to the Pedroni cointegration test results, we provide the Kao cointegration test results in table 8 below. The results as per Kao cointegration test shows that ROE, ROA and stock price are significantly cointegrated with the independent variables; total debt total assets ratio, bank size, growth rate and IFRS at 1% level of significant, see table 8 below. Therefore, the variables of this study are cointegrated and thus we can employ the cointegration regressions (FMOLS, DOLS) to determine their causal relationship.

Table 5: Kao Cointegration Test Results

<i>Dependent variable</i>	<i>t-Statistic</i>	<i>Prob.</i>
ROA	-8.840299	0.0000**
ROE	-3.123954	0.0009**
STOCK	3.918108	0.0000**

**significant at 1% level

*significant at 5% level

4.3. Fully Modified Ordinary Least Square (FMOLS) Results

The study results in table 9 below shows that ROE and ROA are significantly and negatively related to total debt total assets ratio (TDTA) at 1% level. Thus, an increase in the total debt total assets ratio which happen to be the leverage ratio of Turkish listed banks has the effect of decreasing ROE, Return on Assets (ROA). These results are consistent with the findings of Awunyo-Victor and Badu (2012); Sathyamoorthi et al., (2019); Tifow and Siyilir (2015); Nassar (2015); Kalash (2019) who provided for a significant negative association between performance of firms and leverage. Therefore, to increase ROA and ROE (bank performance) of banks in Turkey, the debt ratio should be kept at minimum value. However, the association of stock price with total assets ratio is not significant.

Moreover, IFRS adoption in this study is found to be significantly related with ROA and ROE at 1% level of significant, see table 9. Therefore, IFRS adoption has a significant impact on ROA of Turkish listed banks. These findings are consistent with that of Abdullah and Tursoy (2019) who provided that IFRS adoption increases firm performance in listed firms of Germany. The findings of Adyei et al., (2020) also support the findings of this study that IFRS adoption has the impact of firm performance. Therefore, listed banks in Turkey should encourage and recommend full adoption of IFRS as this will improve firm value. However, the association of stock price and IFRS is not significant.

On the other hand, growth rate of Turkish listed banks is found to have an insignificant impact on ROA and stock price at 10% level of

significant, while ROE is significantly affected by growth rate in a positive way, see table 9 below. Bank size according to FMOLS results in table 9 below is no significant impact on ROA and ROE, while a significant negative association with stock price is observed implying that a decrease in bank size will increase stock price. The rest of the results of fully modified ordinary least square is provided in table 9 below together with the R-square and adjusted R-square. The R-square results and the adjusted R-square results is fairly high indicating that the results are robust, reliable and valid.

Table 6: FMOLS Results

<i>Dependent Variable</i>	<i>Independent Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>P-value</i>	<i>R-squared Adjusted R-squared</i>
ROA	TDTA	-59.94	8.2386	-7.2757	0.0000**	0.4374
	SIZE	3.2205	4.8405	0.6637	0.5079	0.3024
	IFRS	2.7816	0.8599	3.2345	0.0015**	
	GROWTH	0.6983	1.2406	0.5629	0.5743	
ROE	TDTA	-125.58	36.908	-3.4026	0.0009**	0.4700
	SIZE	2.3405	0.0002	0.1076	0.9144	0.3429
	IFRS	7.6336	3.8525	1.9814	0.0494*	
	GROWTH	13.3905	5.5579	2.4092	0.0172*	
STOCK	TDTA	-11470.7	27579.2	-0.4159	0.6780	0.5529
	SIZE	-0.2841	0.0875	-3.2458	0.0014**	0.4835
	IFRS	2412.64	3114.6	0.7746	0.4397	
	GROWTH	5022.71	4789.6	1.0486	0.2959	

**significant at 1% level

*significant at 5% level

4.4. Dynamic Ordinary Least Square (DOLS) Results

In this section of this study, we provide the results of dynamic ordinary least squares. The results in table 10 below shows that total debt to asset ratio is significantly and negatively related to return on asset, but with return on equity and stock price no significant association is found. Therefore, we allude that an increase in total debt total assets ratio by 1 unit has the effect of decreasing return on asset by 14.01 unit. These results show that increasing leverage in listed banks of Turkey may lead to a decrease in return on asset which is the bank performance indicator hence leverage or debt finance should be kept at minimal levels. We also observe that these results are consistent with the findings of Awunyo-Victor and Badu (2012); Nassar (2015); Kalash (2019).

In addition to that, the results provided in table 10 below of dynamic ordinary least squares on the association between banks size and return

on assets shows that there is a significant positive association between bank size of listed banks in Turkey and return on assets. However, stock price and ROE is negatively and significantly related with bank size. Therefore, we ascertain that if banks in Turkey increase in their size, their performance as per return on assets tend to increase, while stock price and ROE will decline.

Moreover, the results in table 10 below also shows that IFRS adoption positively and significantly impacts return on assets. This shows that IFRS adoption positively and significantly increases bank performance of Turkish banks. These, results are consistent with the findings by Abdullah and Tursoy (2019); Kargin (2015); Adyei et al., (2020). However, stock price and ROE has no significant association with IFRS adoption. The results of growth rate in relation to ROE, ROA, and stock price in table 10 below shows no significant association. The results of R-square and adjusted R-square are high showing that the results of the model are robust reliable and valid.

Table 7: DOLS Results

<i>Dependent Variable</i>	<i>Independent Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>P-value</i>	<i>R-squared Adjusted R-squared</i>
ROA	TDTA	-14.010	2.1999	-6.3684	0.0000**	0.9929
	SIZE	6.2306	1.8706	3.3214	0.0024**	0.9602
	IFRS	13.539	1.9981	6.7760	0.0000**	
	GROWTH	1.0336	2.1033	0.4914	0.6268	
ROE	TDTA	-6.1952	29.9878	-0.2065	0.8386	0.9874
	SIZE	-0.0003	0.0001	-2.8079	0.0116**	0.8858
	IFRS	9.5113	1.3415	0.0709	0.9442	
	GROWTH	-30.580	27.4761	-1.1129	0.2804	
STOCK	TDTA	857.36	41740.25	0.0205	0.9836	0.5980
	SIZE	-0.4685	0.1420	-3.2994	0.0013**	0.3609
	IFRS	2767.77	4541.74	0.6094	0.5434	
	GROWTH	-8351.04	14593.39	-0.5722	0.5683	

**significant at 1% level

*significant at 5% level

4.5. Granger Causality Test Results

In this study, we also provide the results of the Granger causality test in table 13 below. The results of the study show that at 1% level of significant ROA granger causes total debt total assets of listed banks in Turkey. Therefore, this shows that return on assets of listed banks in Turkey has the impact of affecting leverage of banks, but total debt total assets does not cause ROA hence there is a unidirectional causality running from ROA

to leverage. The results also show that IFRS adoption granger causes ROA and that ROA also granger causes IFRS. Therefore, there is a bidirectional causality between IFRS adoption and ROA in listed banks of Turkey.

Furthermore, ROE granger causes growth rate and not the other way round indicating a unidirectional causality from ROE to growth rate. IFRS adoption granger causes ROE but ROE does not cause IFRS adoption. Again, in this case there is a unidirectional causality from IFRS adoption to ROE. Moreover, at 5% level of significant total debt total assets ratio granger causes ROE and bank size granger causes stock price and not the other way round indicating that there is a unidirectional causality. Growth rate and ROA, bank size and ROA, stock price and ROE, bank size and ROE, total debt total assets and stock price, growth rate and stock price, IFRS and stock price, bank size and stock price does not granger cause each other at 10% level of significant.

Table 8: Granger causality results

<i>Null Hypothesis:</i>	<i>Observations</i>	<i>F-Statistic</i>	<i>Prob.</i>
TDTA → ROA	176	30.5020	5.12
ROA → TDTA		6.2592	0.0024**
GROWTH → ROA	176	2.1756	0.1167
ROA → GROWTH		1.3136	0.2715
IFRS → ROA	176	9.1271	0.0002**
ROA → IFRS		6.3507	0.0022**
SIZE → ROA	176	0.2256	0.7983
ROA → SIZE		0.9019	0.4077
STOCK → ROE	176	0.0082	0.9918
ROE → STOCK		0.2366	0.7895
TDTA → ROE	176	3.3085	0.0389*
ROE → TDTA		0.2299	0.7948
GROWTH → ROE	176	1.1176	0.3294
ROE → GROWTH		5.5328	0.0047**
IFRS → ROE	176	6.2945	0.0023**
ROE → IFRS		1.7677	0.1738
SIZE → ROE	176	1.2438	0.2909
ROE → SIZE		1.7973	0.1688
TDTA → STOCK	176	0.1019	0.9031
STOCK → TDTA		0.8655	0.4226
GROWTH → STOCK	176	0.5744	0.5641
STOCK → GROWTH		0.5626	0.5708
IFRS → STOCK	176	0.0046	0.9953
STOCK → IFRS		3.507	1.0000
SIZE → STOCK	176	3.7547	0.0254*
STOCK → SIZE		0.7571	0.4705

**; * represents 1% and 5% level of significant. represents null hypothesis of no granger causality

Conclusion

In conclusion, in this study we provide that leverage in the form of total debt total assets ratio significantly affect Return on Assets and Return on Equity negatively. These results are consistent with the findings of Awunyo-Victor and Badu (2012); Sathyamoorthi et al., (2019); Tifow and Siyilir (2015); Nassar (2015); Kalash (2019) who found out leverage (capital structure) is significantly and negatively related to firm performance. The relationship between total debt total assets ratio with stock price is negative but it is not significant hence there is no significant association between the two variables. These results indicate that leverage negatively impacts firm performance, thus an increase in the total debt ratio has the impact of reducing the performance of Turkish listed banks. Therefore, we argue that debt finance in listed banks of Turkey should be kept at minimal levels since very high debt finance in listed banks of Turkey will have the tendency of affecting the performance of the banks in a negative way. The results are however not consistent with Abdullah and Tursoy (2019), who postulates that leverage positively impact firm performance. The reason behind the negative association between leverage and firm performance can be due to high agency cost of debt, Kalash (2019), due to equity holder-debt holder conflict (Jansen & Meckling, 1986). High debt led to high agency cost as there will exist a conflict between equity holders and debt holders and this may affect the performance of banks.

Moreover, in this study we provide that IFRS adoption in Turkish listed banks has a significant positive impact on ROE and ROA. This implies that IFRS adoption has increased the performance of listed banks in Turkey. Thus, in answering one of our research questions that has been outlined earlier own, IFRS adoption is one of the crucial variables that impacts the performance of banks and other institutions. Our results are consistent with the findings of Abdullah and Tursoy (2019) who alludes that IFRS adoption positively impact firm performance of Germany listed firms. The findings are also consistent with the findings of Kargan (2013); Adyei et al., (2020) who provides that adoption of IFRS greatly improves firm performance. Therefore, we ascertain that IFRS adoption really matters in improving the performance of firms, hence an increase in adoption of IFRS standards will significantly increase the performance of firms.

Furthermore, with regards to bank size, the findings of this provides that there is no significant association between bank size of Turkish listed banks with ROA exists; while ROE is negatively impacted as per DOLS results and not FMOLS. Stock price is found to be negatively affected by bank size considering both FMOLS and DOLS results showing that increases in bank size will reduce the stock price of banks. However, these

results are not consistent with Abdullah and Tursoy (2019) who observed a positive association between stock price and firm size. The difference may be due to differences in that Abdullah and Tursoy (2019) studied German firms and not banks. Therefore, this study indicates that bank size significantly impacts bank performance, stock price and ROE in a negative way and ROA positively. Thus, small or big banks may perform the same with no significant difference.

We also provide that growth rate of listed banks in Turkey does not significantly impact ROA, that is, there is no significant association between growth rate and the proxies of ROA. The coefficient value is positive indicating that growth rate should increase ROA, but this is not significant. Moreover, growth rate positively impact ROE in a significant way as per FMOLS results though DOLS indicate that it is insignificant but the coefficient is positive. Therefore, we argue that growth rate in Turkish listed banks improves ROE. Growth is also proven not to significantly impact stock price of listed banks in Turkey.

At this juncture we conclude that total debt total assets ratio should be kept at minimum levels since it has proved to have a negative association with bank performance of listed banks in Turkey. An increase in leverage may harm the performance of banks. These results may be generalized to other banks but however they may not be generalized to other institutions that are not banks, see Abdullah and Tursoy (2019). Again, we conclude that IFRS adoption in listed banks of Turkey has a crucial role in improving the performance of banks, this is consistent with Abdullah and Tursoy (2019); Kargan (2013); Adyei et al., (2020) and hence the findings may be generalized to listed firms but not non-listed firms.

Policy Recommendations

We recommend the adoption of IFRS standards by all listed banks and firm as this will go a long way in encouraging development and adjustment of accounting standards and ensuring correct accounting standards that are dependable, comparable and understandable by the public. Once this is ensured the performance of firms will also increase. We also recommend debt finance to be kept at minimal levels as it may tend to reduce the performance of banks.

Limitations of the Study and Future Recommendations

This study is limited to listed banks of Turkey hence cannot be generalized to all institutions that are not in the banking sector. Institutions in other sectors of business may give different results hence there is need to study various firms in various sectors as their performance may be affected by

different factors. We recommend that for future studies firms in different sectors and from different countries be included in the ascertaining this leverage, firm performance relationship and the IFRS adoption, firm performance relationship. There is also need to employ different models of analysis such as panel ARDL model to see the long-run cointegration.

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