



NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
BANKING AND ACCOUNTING PROGRAM

**THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE
AND BANK PERFORMANCE OF LISTED BANKS
OF TURKEY UNDER IFRS ADOPTION**

BAYAN MOHAMMED

MASTER'S THESIS

NICOSIA
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2021

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ABSTRACT

THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND BANK PERFORMANCE OF LISTED BANKS OF TURKEY UNDER IFRS ADOPTION

This study is an attempt to to analyse 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 analyse 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.

ÖZ

THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND BANK PERFORMANCE OF LISTED BANKS OF TURKEY UNDER IFRS ADOPTION

Bu çalışma, Türkiye'de borsada işlem gören bankaların banka performansı ile sermaye yapısı arasındaki ilişkiyi IFRS'ye göre analiz etmeye yönelik bir girişimdir. Çalışma, Türkiye'de listelenen bankaların panel verilerini analiz etmek için Tam Değiştirilmiş En Küçük Kareler (FMOLS) ve Dinamik Sıradan En Küçük Kareler (DOLS) kullanmaktadır. Çalışmanın sonuçları, işlem gören bankalarda Aktif Getirisi ve Özkaynak Getirisinin kaldıraçtan olumsuz etkilendiğini, dolayısıyla banka performansının kaldıraçtan olumsuz etkilendiğini göstermektedir. Banka büyüklüğünün de Türkiye'de borsada işlem gören bankaların özkaynak kârlılığı ve hisse senedi fiyatı üzerinde önemli olumsuz etkiye sahip olduğu ancak aktif kârlılığı üzerinde etkisi olmadığı bulunmuştur. Bankaların büyüme hızının Özkaynak Kârlılığı üzerinde önemli bir etkiye sahip olduğu ancak Aktif Kârlılığı üzerinde etkisi olmadığı görülmüştür. Çalışma sonuçları ayrıca, Türkiye'de borsada işlem gören bankalarda IFRS'nin benimsenmesinin Özkaynak Karlılığı ve Aktif Kârlılığı'nı önemli ölçüde olumlu etkilediğini göstermektedir. Bu nedenle, IFRS standartlarının Türkiye'de borsada işlem gören bankalar tarafından benimsenmesi bankaların performansını artırmaktadır. Dolayısıyla bu çalışma, bankaların performansını büyük ölçüde artıracığından, Türkiye'deki bankacılık sektöründe IFRS standartlarının benimsenmesini önermektedir.

Anahtar Kelimeler: Varlık Getirisi; Özkaynak kârlılığı; IFRS; Hisse senedi fiyatı; Sermaye yapısı; Banka performansı.

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ABBREVIATIONS

ADF – Augmented Dickey Fuller test

PP – Phillips Perron test

BARSA – Banking Regulation and Supervision Agency

CMB – Capital Markets Board of Turkey

DOLS – Dynamic Ordinary Least Square

EPS – Earning per share

FMOLS – Fully Modified Ordinary Least Square

GMM – Generalized Method of Moments

HSBC – Hongkong and Shanghai Banking Corporation

IAS – International Accounting Standards

IASB – International Accounting Standards Board

IFRS – International Financial Reporting Standards

IMF – International Monetary Fund

MM – Modigliani-Miller proposition

OLS – Ordinary Least Square

POAASB – The Public Oversight, Accounting and Auditing Standards Board of Turkey

ROA – Return on Assets

ROCE – Return on Capital Employed

ROE – Return on Equity

SEEs – State Economic Enterprises

SWOT – strengths and weaknesses; opportunities and threats

TASB – Turkish Accounting Standards Board

TEB - Turkish Economic Bank

TDTA – Total Debt/Total Assets ratio

IASCF – International Accounting Standards Committee Foundation

TCC – Turkish Commercial Code

USA – United States of America

Introduction

Organizations, firms and institutions finance 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 various capital structure theories and these include the Modigliani-Miller proposition 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 there is no asymmetric information, that is, transaction costs does not exist 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 tradeoff theory, is the traditional theory of capital structure and is considered as the most recognized capital structure theory. The trade-off theory was proposed by Modigliani and Miller (1963) and it alludes that the activities of a firm is financed either through debt or through equity finance. It gives the advantages of debt

finance in the form of tax saving, even though it comes along with costs such as agents cost and bankruptcy costs (Butt, Khan & Nafees, 2013). Thus, the trade-off theory provides that firms prefer using debt finance due to its tax saving advantage.

On the other hand, the pecking order theory is considered as the most popular type of capital structure theory (Shahar et al., 2015). The pecking order theory was proposed by Myer (1984); and Myer and Majluf (1984) and it provides that firms prefer internal sources of finance first as retained earnings, followed by debt finance and lastly equity finance. Asymmetric information exists in an organization where managers have more information than investors. Managers prefer internal sources of finance rather than external sources of finance which can be undervalued by the market. As a result, the leverage of a firm is not driven by tradeoff but by the attempt to mitigate asymmetric information (Cotei & Ferhat, 2009). Therefore, the order of choosing the source of finance according to the pecking order theory is as follows retained earnings first, then debt finance and then equity finance. Thus, the pecking order theory shows the willingness of managers to control the cost of equity and the agency problem, hence it is not a substitute of the trade-off theory but a compliment.

The agents cost theory, by Jansen and Meckling (1976) alludes that, to increase the performance of a firm principals have to pay agents for them to perform well. Thus, the monitoring costs, bonding costs and the lost welfare costs are incurred by principals to compensate agents so that they will not sabotage the firm (Bundala, 2012). Monitoring costs implies that observing agents' behavior and controlling their behavior is difficult, hence a compensation procedure may be applied in order to induce them to perform well. Bonding expenditure implies that principals pay agents such that they will not take harmful decisions to the firm. Agents cannot be perfectly monitored and there is a conflict of interests between agents and principals and this is also an agent cost (Abdullah & Tursoy, 2019). The market timing theory, by Baker and Wargler (2004), alludes that a firm can issue shares when overvalued and tend to repurchase it when undervalued or when it is assumed to be undervalued in the future, see for example Adomako and Danso (2014); Shahar et al., (2015).

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 phenomenon 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) as well as the 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 study results provide for a significant negative association between capital structure, that is, leverage in the form of total debt total assets ratio and bank performance of listed banks of Turkey. Moreover, IFRS adoption has been found to have a significant effect on the performance of listed banks of Turkey. Bank size and growth rate has been found to significantly affect return on assets but there is no significant effect on return on equity and stock price of listed banks of Turkey.

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.

CHAPTER 1

General Review

1.1 History of Accounting in Turkey

According to Alp and Ustundag (2009), accounting standards in Turkey in harmony with IFRS were published by BARSA (Banking Regulation and Supervision Agency) as well as CMB for public limited companies and capital market establishments were implemented since 2005. The regulations of CMB provides that companies whose shares are traded publicly can implement IFRS (Alp & Ustundag, 2009). The Turkish Accounting Standards in full harmony with IFRS accepted the regulations and enforced its implementation by banks and financial organizations.

The history of the accounting standards development in Turkey is one that was built under government oversight, influenced by western countries laws who have intense political and economic effects in Turkey's legislations, Ustundag (2000) cited in Alp and Ustundag (2009). The Commercial code of 1850 which was a French translation of that era is recognized as the first accounting regulation in Turkey (Alp & Ustundag, 2009). The Turkish relations with Europe greatly improved at the end of the 19th century as well as the onset of the 20th century, Alp and Ustundag (2009). Alp and Ustundag (2009)

citing Walstedth (1980) alludes that prior first world war almost 215 corporations in Turkey were being controlled by German and French entrepreneurs.

In 1923 the Turkish Republic was established and in 1926 the second commercial code was enacted, Alp and Ustundag (2009). According to Mugan and Akman (2005) in Alp and Ustundag (2009), the code enacted in 1926 was in line with the laws of German commerce and companies' law. Turkey, in the late 1930s accepted academicians from German in various fields of Turkish universities and the accounting and financial practices of State Economic Enterprises (SEEs) as well as training by German professors established private sector's accounting rules and practices, Bilginoglu (1988) in Alp and Ustundag (2009).

By the end of World War II, new developments in the world economy such as the Bretton Woods which greatly affected Turkey's economy and politics, Alp and Ustundag (2009). In the beginning of 1950s Turkey was characterized by a huge economic boom followed by an economic crisis after mid 1950s which needed foreign loans to rescue the country, hence the IMF (International Monetary Fund) ended up, in the 1958, imposing stabilization programs, Alp and Ustundag (2009) citing Ceyhun (1992). Another commercial code was enacted in 1956 and came into effect in January 1, 1957 and was in harmony with the economic development contemporary, Alp and Ustundag (2009).

According to Alp and Ustundag (2009), the first financial and accounting statements as well as reports of Turkey on partnerships were given in the TCC (Turkish Commercial Code) though its provisions only reflected a general framework, hence couldn't be sufficiently reflected in practice. The Re-regulation of State Economic Enterprises committee developed accounting standards on uniform accounting system, bank regulations, insurance companies' regulations, and this is in line with the TCC and tax regulation, Alp and Ustundag (2009).

1.2 Adoption of IFRS in Turkey

Balsari and Varan (2014) postulates that there are various institutions that have contributed to the process of IFRS implementation in Turkey. Some of these institutions

include, the Public Oversight Accounting and Auditing Standards Board of Turkey, The Banking Regulation and Supervising Agency, Turkish Accounting and Auditing Standards Board, the Capital Markets Board of Turkey and Turkish Accounting Standards Board; with the Capital Markets Board being the most influential of all, Balsari and Varan (2014). On the other hand, Kılıç and Uyar (2017) provides that the Turkish Capital Market Board and the Turkish Accounting Standards Board are the two major bodies in Turkey which played an effective role in developing financial regulations standards. The Capital Markets Board in 2001 issued a revised bulletin on the consolidation of financial statements and a bulletin on inflation accounting that was in line with IASs (Balsari & Varan, 2014). In 2003, the board issued quite a broad set of standards on financial reporting which are compatible with IFRS and IAS and these standards became effective in 2005 for listed firms at the Istanbul Stock Exchange, Balsari and Varan (2014). The table below gives a detailed account on IFRS application in Turkey.

Table 1. IFRS application

Year	Event
2002	IFRS standards that are compatible for banks and financial organizations
2002	The establishment of the Turkish Accounting Standards Board
2003	Application of Inflation, accounting and consolidation standard (which is the voluntary adoption for listed firms)
2005	Mandatory adoption of IFRS standards by listed firms)
2006-2008	TASB became only body to issue standards

2011	The Public Oversight, Accounting and Auditing Standards Board of Turkey (POAASB)
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2013	New Commercial code application
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According to Alp and Ustundag (2009) the establishment of the Turkish Accounting Standards Board (TASB) was based on the supplementary article 1 of the Capital Market Law. TASB according to Alp and Ustundag (2009), was established for the purposes of encouraging development as well as adjustment of accounting standards of the nation to ensure correct accounting standards, that are comparable, dependable, and understandable by the public. Moreover, TASB of Turkey is comprised of members each from: ministry of industry and commerce, ministry of finance, the council of higher education, the capital market board, the Undersecretaries of Treasury, the commodity exchange and association of chambers of Commerce, the Banking and Regulation and Supervision Board, financial consultants, as well as two from the Self-employed Accountants union of Chambers and Certified Financial Consultants of Turkey (Alp & Ustundag, 2009). Alp and Ustundag (2009) also alludes that the TASB is mandated to form working commissions that have the duty of regulating accounting standards together with representatives from respective organizations. TASB's first meeting was held on March 7, 2002 (Alp & Ustundag, 2009).

TASB, as a board that is responsible for setting standards of financial reporting works in full compliant with International Financial Reporting Standards by following the official translation principal procedure as set by IASCF (International Accounting Standards Committee Foundation) Alp and Ustundag (2009).

1.3 SWOT Analysis of IFRS 9

Just like any other financial and accounting standards adopted before it, IFRS 9 is with its own shortfalls. Huian (2012) came up with the strengths as well as the weaknesses;

opportunities and threats (SWOT analysis) of IFRS 9 and its major points are summarized below, Gornjak (2017).

Strengths: IFRS 9's benefits are summarized as follows:

- There is an alignment of accounting transactions with business strategies
- It seeks to address issues that arises from financial crisis
- It reduces classification and measurement complexity
- Business model changes should be accompanied with extensive disclosures and the reasons thereof
- Rules should be simplified in derivatives measurement
- Losses be detected in a proper manner
- Focuses more on shareholders
- Enhancement in the accessibility of foreign capital investment
- Improvements in transparency and consistency of global rival transparency
- Financial reporting and accounting must be comparable and standardized

Weaknesses: IFRS 9's disadvantages are as follows:

- Requirement of a more professional judgement which is sometimes subjective on new concepts/business models, that were introduced
- Existing accounting systems required to be upgraded or adjusted in line with new calculations for IFRS 9
- Financial liabilities systematic approach is not provided
- IFRS 9 scratched several options and a wide range of financial liabilities
- Hedge accounting Impairment questions remain unsolved

Opportunities: Huian (2012) provides IFRS 9 opportunities as follows

- In accounting decisions, professional judgement is enabled
- It allows financial assets measured at fair value, at original classification to be measured by amortized costs at reclassification
- Second and third stages completion enables standard setter to make better choices

Threats: IFRS 9's threats are summarized as follows (Gornjak, 2017)

- Comparability is suppressed due to various decisions
- Early adoption of the standard is not favored by the cost-benefit ratio indicator
- Quantifying the cost of implementation is difficult
- Some options may be chosen for the purpose of just meeting the accounting requirements
- The usefulness of financial statements is weakened by early adoption of the standard
- The sole standard setter is International Accounting Standards Board (IASB)
- Mismatches are created due to multiple stages approach due to existing rules and new requirements
- Only institutions listed on the stock exchange are bound to meet the IFRS 9 standard (Gornjak, 2017).

Literature Review

2.1 Capital Structure Theories

There are many theories of capital structure, Shahar, et al. (2015), and these theories include the traditional trade-off theory and the pecking order theory, which are considered as the most acceptable capital structure theories. Other capital structure theories include, the agency cost theory, market timing theory, the free cash flow theory and the signaling theory (Adomako & Danso, 2014). Though, the pecking order theory is becoming the most popular one, the tradeoff theory by Modigliani and Miller (1963) is the most recognized and earliest theory (Shahar, et al. 2015). On top of the above-mentioned theories the Modigliani-Miller Proposition is the first theory of capital structure, even though its practicality is still questionable, Shahar, et al. (2015).

In this section of the study focus is on only Modigliani-Miller proposition and the four real world theories of capital structure, that is, trade-off theory, the market timing theory, pecking order theory, and the agency cost theory.

2.1.1 Modigliani-Miller Proposition

According to Abdullah and Tursoy (2019), and Mostafa and Boregowda (2014), the Modigliani-Miller Proposition is considered as the first theory of capital structure (see also, Shahar, et al. 2015). The Modigliani-Miller Proposition assumes for capital

structure existing in a perfect world such that financing decision does not impact the value of the company (Abdullah & Tursoy (2019); Shahar, et al. 2015). Firm value is rather impacted by the size of the firm, Abdullah and Tursoy (2019). This theory is one that was proposed under capital market conditions that are perfect, that is, no transaction costs, taxes, and information asymmetry (Modigliani & Miller, 1958).

The assumptions of the MM theory are as follows: (1) no different classes of risk for firms, (2) no cash flow growth factor and perpetual cash flows were assumed, (3) no bankruptcy and transaction costs for ideal capital markets, (4) risk classes of firms are same, (5) only two kinds of claims to be issued by companies and these are, debt without risk and equity with risk, and (6) non-existent of moral hazard on the side of managers as they work towards maximizing the wealth of shareholders ,(see, for example, Shahar, et al. 2015; Abdullah & Tursoy 2019). These assumptions do not hold in real life hence the MM theory is more theoretical, than one that can be applicable in reality.

2.1.2 Trade-off Theory

The tradeoff theory was pioneered by Modigliani and Miller (1963), where capital structure was analyzed in a model that constitutes of taxes and interest payment on debt acted as a tax shield (Bundala 2012; Shahar et al. 2015). Myers (1984) according to Shahar et al. (2015) alludes that the tradeoff theory emphasizes the benefit of using debt funds is tax saving benefit, even though it comes along with agent costs and bankruptcy costs. The tradeoff theory is one of the oldest theories which has a direct connection from the Miller and Modigliani capital structure proposition (Shahar et al. 2015). Butt, Khan and Nafees (2013) also postulates that organizations (firms) finance their business either through debt or equity.

The main advantage of debt financing is the tax benefit that comes along with it, it however has its disadvantage of debt cost in the form of interest paid also referred to as bankruptcy cost (Butt, Khan & Nafees, 2013). Other researchers such as Butt, Khan and Nafees (2013) refer the trade-off theory as the static trade-off theory and provides that in order to strike a balance between the merits and demerits of equity and debt

financing, a mixed type of financing should be pursued. Capital cost of a firm cannot be reduced by using more and more debt at the expense of equity because at some point in time debt cost may rise and become more expensive than equity cost (Butt, Khan & Nafees, 2013). This is so because leverage level may increase which will lead to an increase in the creditor's risk hence their required rate of return increases as well. Myers (1984) in Bundala (2012) alludes that if managers feel equity is undervalued in the market, they tend not to issue it. In addition to that Bradley et al. (1984) in Bundala (2012) provides that firms will increase debt up until the satisfaction of an additional unit of it equals cost of debt, together with the high-cost probability of financial distress.

Firms operating in different sectors uses various static trade-off theories of capital structure. This is so because firms that are more tangible uses more of debt finance than equity, they have enough assets to use as collateral, Butt, Khan and Nafees (2013). Moreover, large companies are considered as "too big to fail" and have better capital market access thus have the ability to hold more debt than small companies (Butt, Khan & Nafees, 2013). Dynamic tradeoff theory on the other hand, provides for an adjustment of firms' desired capital structure target over time and that it is a function of endogenous and explanatory factors that changes, Bundala (2012).

2.1.3 Pecking order Theory

The Pecking order theory that was pioneered by Myers and Majluf (1984) and Myers (1984) is based on information asymmetry idea between managers and investors. The Pecking order theory alludes that organizations finance their activities by first using internal finance sources, followed by debt finance and last equity finance, Cotei and Farhat (2009) and Bundala (2012). Internal sources of finance of a company include retained earnings of a company from its profits that it has been earned throughout the financial year. Retained earnings is the amount of money that has been left from the profit of the company after having paid the shareholders of their dividends. Thus, these funds are available for reinvestment in the business and is the one that is most preferred by firms since it has less or no cost at all. Debt finance on the other hand is the finance obtained through borrowing from outside investors. This is done through the issuing of bonds or other securities by the company and the bond owners or security

holders under these circumstances will not become the shareholders of the company, they are rather just external investors who will be paid interest for their money which they have invested in the company. Debt finance has got the advantage of tax advantage since the interest on debt finance is paid before the deduction of tax by the government. Thus, debt finance is not charged for tax since it is not directly owned by the owners of the company. Unlike, equity finance which is obtained through the issuing of stocks, the holders of these stocks automatically become the owners of the company, hence equity finance has no tax advantage and the holders of these stocks are the owners of the company.

Asymmetry information between investors and managers, where managers possess more information with regards to the firm's value and its riskiness than investors who are less informed is the basis of the Pecking Order theory (Cotei & Farhat, 2009). This is so because managers of a company are the ones who are responsible for running the company on a daily basis, hence they have full control of the company and they are aware of all the conditions associated with the company, which business adventures are risky and which ones are profitable. Thus, Cotei and Farhat (2009) argues that managers prefer internal source of finance or riskless debt, rather than using equity finance that is undervalued by the market. The pecking order theory thus argues that the firm's leverage is not driven by the trade-off theory but by the company's attempt to mitigate asymmetric information, thus the pecking order theory manage to explain why companies rely on internal sources of finance and why it prefers debt than equity source of external financing (Cotei & Farhat, 2009).

Myers (1984) undertook a study which was aimed at contrasting between static trade-off theory as well as the pecking order theory of capital structure. In their study they provide that the static trade-off theory reaches optimum capital structure at a point when the borrowing tax advantage is at balance with the costs of financial distress that is at margin. On the other hand, Myers (1984) provides that the pecking order theory provides that a firm prefer internal sources of funds to external sources of funds and that a firm also prefer debt finance to equity finance in the event that external sources of funds are needed. The pecking order theory thus provides for following an order in

choosing the type of finance to use, Bundala (2012), because different levels of asymmetric information plus the agency costs related to different finance sources. Retained earnings is first to be used because it is the means of finance that is cheap and is not easily affected by asymmetric information (Bundala, 2012; Butt, Khan & Nafees, 2013). Debt finance is used second, Butt, Khan and Nafees (2013), since asymmetric information is very low. Moreover, the obligations acting are fixed and is an effective monitoring device, while equity is the last option since it conveys signaling that are adverse, Bundala (2012).

Shahar et al., (2015) is of the postulations that the trade-off theory failed to consider information asymmetry, hence this led to pecking order theory's development. Shahar et al., (2015) also provides that the major factors that are responsible for determining the level of debt ratios are supply and demand factors, but he also emphasized that the decision in choosing the sources of finance solely depends on the order of preference where internal sources of finance are chosen first, followed by debt finance, then lastly equity finance. Companies have the tendency of maximizing their profits by way of choosing the cheapest source of finance first followed by the more expensive one to the very expensive one in that order. Thus, Shahar et al., (2015) is of the point that the hierarchy that is involved in the decision of corporate financing is one that is prompted by the cost of finance in a bid to maximize the profits of the company. The reason why debt finance is preferred more than equity finance is that it is less exposed to information asymmetry.

Firms that have the highest level of information asymmetry should choose debt finance first so that they can avoid the selling of underpriced securities Shahar et al., (2015). Along the same lines, Shahar et al., (2015) also postulated that transaction costs have a very crucial role to play in the decision of firm's capital structure. This is so because the transaction costs that are associated in finding new external sources of finance are very high than those of finding internal sources of finance, Shahar et al., (2015). Mostafa and Boregowda (2014) provides that small firms that have high growth opportunities must issue more debt rather than equity finance. Along the same lines, Mostafa and Boregowda (2014) also alludes that a firm should issue equity finance if and only if

information asymmetry is less. However, it must be noted that issuing debt finance that exceeds the debt capacity of a company has the problems of reducing the firm value, as a result each and every company has to choose debt up to its maximum optimum level and should not exceed that because further increases will not benefit the company in anyway but would rather reduce its performance Shahar et al., (2015). Shahar et al., (2015) also provides that the debt capacity point explained here is similar to the target debt rational as provided by the traditional trade-off theory. Thus, the pecking order theory and the trade-off theory are very difficult to distinguish from one another since their characteristics are almost the same Shahar et al., (2015).

One of the greatest advantages of Pecking Order theory, Butt, Khan and Nafees (2013), is the willingness of managers to control and maintain the company as it helps cost of equity minimization as well as agency problems control. Just like any other theory, the pecking order theory is with its disadvantages and the first one is its failure to incorporate tax effects, agency cost, cost of new securities issuing as well as investment opportunities financial distress (Butt, Khan & Nafees, 2013). The pecking order theory also overlooks financial managers decision related problems, Butt, Khan and Nafees (2013). The pecking order theory is thus a complement of the trade-off theory rather than a substitute.

2.1.4 Agency Cost Theory

According to Jansen and Meckling (1976) an agency relationship is a relationship that occurs between one or more parties that are known as principals who seek to engage another person which is known as an agent to perform some of its services on the behalf of the principals. Thus, this relationship allows for the delegation of decision-making authorities to the agents who is going to perform that authority on behalf of the principals. Thus, Jansen and Meckling (1976) alludes that if both parties are utility maximisers this means that the agent will not be in a good position to act on the principal's interest. As a result, the principal has to come up with some measures to control the agent in order for him or her to act on their best interests. These measures by the principal are employed for the purposes of limiting divergence of agents from the interest of the principal, Jansen and Meckling (1976). The principal can control the

agents through incentives or by way of incurring some monitoring costs which will limit aberrant activities of the agent.

The agency cost theory, Jansen and Meckling (1976), postulates that agency cost is a sum of three variables, that is, agency bonding expenditure, the principal monitoring expenditure and residual loss. Monitoring costs in economics not only imply the observation of an agent behavior, rather it also includes those efforts made by the principal to control agent behavior by way of applying compensation policies, budget restrictions and operating rules (Bundala, 2012). Bonding expenditures is a situation where by principals make an effort to pay agents such that they will not take actions that are harmful to the organization, Jansen and Meckling (1976); Bundala (2012). Lost welfare as a type of agency costs is mainly caused by principal interests' divergence from those of agents due to circumstances such as geography, technology or personalities difference, Bundala (2012). Jansen and Meckling (1976) argues that it is very difficult for the agent to be able to make decisions that are in line with the viewpoint of the principal. It is difficult to arrive to a situation where agents are perfectly monitored and bonded, thus principal and agent interests will not be coextensive.

On the other hand, Abdullah and Tursoy (2019) alludes that the agency cost theory suggests for an existence of a conflict of interest existing between principal and agents' stakeholders and this leads to a creation of agency costs in the firm. An ideal capital structure is one that seeks to maximize firm value and at the same time reducing aggregate agency costs, Abdullah and Tursoy (2019). Agency costs can also be divided into two distinct categories, that is, agency cost of debt and agency costs of equity (Jansen & Meckling (1976 in Abdullah and Tursoy 2019), where the former arise due to equity holder – debt holder conflict, whereas the latter is caused by shareholders – managers conflict.

According to Eisenhardt (1989) the theory of agency tends to offer a unique insight into information asymmetry, incentives, risk and outcome uncertainties. When coupled with complementary perspectives the agency theory is an empirical valid perspective which incorporate agent perspective in various studies that may have problems with a corporate structure, Eisenhardt (1989). Eisenhardt (1989) provides that the agency

theory has been widely used in the field of accounting, economics, finance, marketing, political science, organizational behavior and sociology. However, there is still a controversy that is existing on the application of agency theory. Eisenhardt (1989) Divided agents' problems into two, that is, firstly when the desires or the goals of the principal and the agents are at conflict and secondly when difficulties arise or if it is expensive for principals to verify the day-to-day activities of the agents. Eisenhardt (1989) provides that it is very difficult for the principal to verify if the agent is behaving appropriately hence there is need for the principal to incur certain costs towards trying to monitor the agent. As a result of this we allude that the agents' cost is necessary for the principal to monitor the day-to-day activities of the agent because in the event that the agent has not acted in the best interest of the principal then the principal can withdraw the benefits that has been promised to the agent. Due to this reason the agent will find himself with no other option than to act in the best interest of the principle since he fears to lose the benefits.

In addition to that, Eisenhardt (1989) provides that there is a risk sharing that arises when principal and agents have different attitudes towards the risks. Thus, the principal may have a different attitude towards risk while the managers who happened to be the agent better acting on behalf of the principal may have different attitude towards the risks. The agent is prompted to act in a manner that will reduce the risk from his side but this may cause risks to the principal. Eisenhardt (1989) is of the view that principal and agents tend to prefer different activities due to the reason that they have different risk preferences. Therefore, in order for the principal to induce the agent to have the same risk preference as them they have to incur a certain cost which will prompt the agent to act in line with the risk preferences of the principal. Eisenhardt (1989) also provide the unity analysis as a contract that governs the principal agent relationship.

Jansen and Meckling (1976) provides that agents costs exist in any situation for example the cooperative effort of co-authoring a paper is one that poses agents costs even though there is no clear cut of a principal agent relationship. Therefore, agents' costs are very important to the theory of firm and it bears a very close relationship to checking problems and team production monitoring problems Jansen and Meckling

(1976). At this juncture, we can see that the relationship that exists between shareholders and managers is one that perfectly fits the definition of an agent's relationship and that separation of ownership and control issues revolve around the general problem of agents Jansen and Meckling (1976).

Jansen (1986) alludes that in the event of high leverage managers concentrate in profitable investments which has the potential of generating some sufficient cash flow that will be used to pay the interest. Thus, it can be seen that high leverage has the potential of inducing agents to perform in the best interest of the principal by increasing firm performance. Berger and Di Patti (2006) also concurs with Jansen and Meckling (1976) that leverage affects agents costs hence firm performance. According to Berger and Di Patti (2006) high leverage that is associated with lower equity capital ratio leads to high profit efficiency. And that large institutional holders tend to have favorable monitoring effects which has a result of reducing the agents cost. Thus, when an organization is choosing between which type of capital to use for its organization, debt capital is preferred first rather than equity capital because debt capital has the potential of increasing the performance of the firm.

Jansen and Meckling (1976) also provides that the other conflict that exists between the owners of the firm and the agents who happened to be the managers is the conflict over the optimum size of the firm and including the payment of cash to shareholders in the form of dividends. Jansen and Meckling (1976) also alludes that this conflict tends to be more acute in organizations that have large free cash flow than in those ones with profitable investment opportunities.

Jerzemowska (2006) is of the postulations that owners of a company are incapable of running the company, as a result they tend to hire agents, who are managers, who have the capabilities of running the company on their behalf and this results in what is known as a principal agent relationship. Along the same lines, the aim of the company is to maximize profits while on the other hand managers are aimed at maximizing their own personal interest which sometimes maybe at the expense of the interest of those of the owners Jerzemowska (2006). As a result, the differences arising between the goals of the owners of the company and that of the managers is one that leads to agents'

conflicts and it is severe in public companies than private limited companies Jerzemowska (2006). Therefore, from the definition that has been provided above of the principal agent relationship, it is very clear that the agents costs arise due to differences in the aims of the company and that of the managers. Thus, in the same line with the postulations of Jansen and Meckling 1986; Jerzemowska (2006) provides that serious conflicts of interest arise due to separation of ownership and the control of the company. This is in line with the postulations of Margritis and Psillaki (2010) who provides that managers interest and that of shareholders of a company are not perfectly aligned and this results in agency costs. Shareholders are dispersed and they are unable to manage the company which they own as a result of this shareholders will resort to hiring managers who are capable and will be in the position of running the company Jerzemowska (2006). Thus, at this juncture we can see that there is need for contracts that are responsible for moderating the agency relationship Jerzemowska (2006).

2.1.5 Market Timing Theory

Shahar et al. (2015) provides the market timing theory as the other type of capital structure theory that was pioneered by the work of Baker and Wurgler (2002). According to Baker and Wurgler (2002) companies are known for issuing equity when the market value of equity is high in relation to its book value and past values of market, as well as repurchasing equity when their market values have dropped. Baker and Wurgler (2002) also postulated that in corporate finance, equity market timing refers to the practice by which companies' issues shares at higher prices and repurchase them at lower prices. This implies that the company seek to take advantage of variations in the price of equity in the market and tend to benefit from the gain arising due to price differentials overtime. The process of issuing equity when its price is high and repurchasing it when the price drops is repeated severally overtime hence giving a profitable advantage to the company. Baker and Wurgler (2002) postulates that equity marketing timing is employed to exploit temporary fluctuations that exists in capital cost relative to other forms of capital's cost. According to Baker and Wurgler (2002) equity market timing is very crucial aspect in corporate financial policy. This is so because of two reasons, that is, the actual analysis of financial decision indicates that companies issue equity rather

than debt finance in times of high market value in relation to their book value or past market values and they tend to repurchase equity in the event that the market value has dropped. The second reason is that on average equity market timing is seen as a successful corporate finance decision as per long run stock returns analysis. Baker and Wurgler (2002), provides that companies have the tendency of issuing equity when the cost of equity is low and will tend to repurchase equity when its cost has risen.

Baker and Wurgler (2002) also provides that market timing has great and persistent impacts on the capital structure. Low leveraged firms are commonly those companies that manage to raise their funds when their market valuations were high while high leveraged companies are companies that raised their funds during the period when their market valuations were low, Baker and Wurgler (2002). Moreover, Baker and Wurgler (2002) also provides that post market valuations have a significant influence on the capital structure of a company.

Very few numbers of studies have been done to test the validity of the market timing theory since it is a new theory, Adomako and Danso (2014). Shahar et al. (2015) also concur with the postulations of Baker and Wurgler (2002) that the market timing theory of capital structure apply timing in the issuing of shares, that is, it issues new stock when its price is overvalued and repurchase them when an undervaluation of stock price is assumed. Continued fluctuations in the stock price will thus affect capital structure decision making by the firm, Shahar et al. (2015).

Shahar et al. (2015) also provides that managers are expected to issue some equity immediately after the release of some positive information which has got the tendency of reducing asymmetric information problem between the managers and the stakeholders. Accordingly, the decrease in information asymmetry has the effect of causing an increase in the stock price, Shahar et al. (2015). As a result, Shahar et al. (2015) provides that the market timing theory provides an indication that companies are able to create their own timing opportunities which they can use to finance their own projects and that the extent of adverse selection tends to vary across companies and time and is thus negatively associated to market to book ratio, Baker and Wurgler (2002).

2.2 Empirical Studies on capital structure, firm performance and IFRS adoption

Many studies have 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 as a proxy of capital structure (see in Abdullah & Tursoy 2019; Karadeniz et al. 2009). However, other studies on top of total debt to total assets, uses short-term debt to total assets and long-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 ROA and ROE 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 of 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 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 leverage and Return on Assets

Sathyamoorthi, et al. (2019) found out that a significant negative association exists between ROA and total debt/total assets. Tifow and Sayilir (2015) found out a significant negative association between short term debt/total assets ratio with ROA while Long-term debt/total assets ratio was observed to be positively correlated to ROA. ROA is significantly impacted by short term debt, total debt and long-term debt, Twairesh (2014).

Association between leverage and Return on Equity

The findings of Sathyamoorthi, et al. (2019) indicates that a significant negative association between ROE on one hand, with total debt/total assets on the other hand. This is in support with, Tifow and Sayilir (2015) who found out that Long-term debt/total assets ratio is found to have a negative association with ROE. Twairesh (2014) alludes that ROE is only significantly associated with longterm debt.

Association between Tobin's Q and leverage

Ayuba, Bambale, Ibrahim & Sulaiman (2019) postulates for a significant positive association between performance of companies as proxied by Tobin's Q and all other explanatory variables except with return on capital employed. However, Tifow & Sayilir (2015) provides for a significant negative association between short term debt/total assets ratio and long-term debt/total assets with the proxy of companies' performance, Tobin's Q. The findings of Tifow & Sayilir (2015) concur with Sathyamoorthi, et al. (2019) who alludes for a significant negative association between Tobin's Q on one hand, with total debt/total assets on the other hand.

Relationship between leverage and other control variables

Latridis and Zaghmour (2013) observed a negative association between firm size with firm's leverage, hence an important factor in making financial decisions. The findings of Latridis and Zaghmour (2013) is consistent with Butt, Khan and Nafees (2013) who observed that assets size significantly impact leverage in a negative way. There is no significant impact of capital intensity, profitability, tangibility, and liquidity on leverage.

Moreover, a positive relation between growth with leverage of Turkish companies Latridis and Zaghmour (2013). Abdullah and Tursoy (2019), provides that adoption of IFRS according to the findings improved the performance of firms on one hand and weakened of the performance of firms with capital structure.

Karadeniz, Kandir, Balcilar and Onal (2009) also determined that a negative association between debt ratio with tax rates, tangibility of assets and ROA exists. However, tax shield of non-debt, free cash flow, net commercial credit position, growth opportunities, and firm size are not significantly associated to debt ratio, Karadeniz, et al (2009).

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 earnings' 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 the adoption of IFRS is observed to have some significant benefits to the market even when there is weak level of enforcement. Adoption of IFRS increases 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.

Lastly, IFRS adoption has resulted in a negative effect on the financial ratios of listed firms in Nigeria, however the effect is not statistically significant Ibiamke & Ateboh-Briggs (2014). Whereas, the results of the study by Amrutha et al., (2019) show that in India there is a significantly high effect of the adoption of IFRS on accounting ratios in comparison with before the adoption.

Table 2: Summary of Empirical studies on IFRS 7 and IFRS 9

Author	Variables	Country	Method	Findings	0
Ozkan, Cakan & Kayacan (2016)	Value added intellectual coefficient, Efficiency of Human capital, Capital employed efficiency, Return on assets	Turkey	Regression analysis	<p>The efficiency of Human Capital generally affects the performance of Turkish banks' intellectual capital.</p> <p>Banks with the highest Value-added intellectual coefficient, are investment and development banks.</p> <p>The financial performance of banks is positively affected by efficiency of human capital and the efficiency of the capital employed.</p>	

Results shows that efficiency of Capital employed influences banks financial performance more than human capital efficiency.

Hussain & Hadi (2017)	ROA	Malaysia	Regression analysis	The study results show that only board composition, and risk management committee board size significantly impacts firm performance.
	Board composition			
	Board size			
	Remuneration committee			
	Risk management committee			In addition to that, firm performance of companies registered under Construction Industry Development Board in
	Gender diversity			

					Malaysia	are
					affected	by
					corporate	
					governance	
					mechanism	
Latridis	&	Leverage,	Morocco	Regression	For	both
Zaghmour		Firm size,	Turkey	analysis	Morocco	and
(2013)		Asset			Turkey	firm size
		tangibility,			is	significantly
		Profitability,			related	to
		Growth			leverage,	hence
					an	important
					factor	in making
					financial	
					decisions.	
					Leverage	with
					profitability	and
					asset	tangibility
					for firms	in both
					Morocco	and
					Turkey	are found
					to be	negatively
					related.	
					Leverage	and
					growth	in Turkish
					firms	are found
					to be	positively
					related.	

The study concluded that firms may use equity to finance itself when in periods of high stock valuations and positive investor perceptions and use debt in the event that interest rate is found to be low.

The performance of a company is related in a positive manner by effective corporate governance and negative to leverage.

Abdullah & Tursoy (2019)	ROA, ROE, Stock price, Leverage, Firm size,	German	GMM (Regression analysis)	Results of the study confirms for a positive association to exist between
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Dividend to price ratio, Growth rate, IFRS

the variables capital structure and firm performance.

Adoption of IFRS is found to significantly improve firm performance on one hand and weakened firm performance to capital structure relationship.

<p>Ayuba, Bambale, Ibrahim Sulaiman (2019)</p>	<p>ROA, ROE, ROCE, Tobin's Q, Short term debt to total assets, Long term debt to total assets, Total debt to total assets, Total assets, Firm age</p>	<p>Nigeria</p>	<p>Regression analysis</p>	<p>The study findings show that Tobin's Q and all other explanatory variables except for return on capital employed are significantly related.</p> <p>All explanatory variables affect</p>
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the value of Insurance firms in Nigeria.

Thus, short term debt should be used instead of long-term debt for Insurance companies because it increases the value of the firm.

Sathyamoorthi, Baliyan, Dzimiri, & Dima (2019)	ROA, ROE, Tobin's Q, EPS, Short term debt to total assets, Long-term debt to total assets, Total debt to total assets, total debt to total equity, liquidity and growth	Botswana	Descriptive statistics, Correlation analysis, Regression analysis	The study's results indicate a significant negative impact of high debt financing on the financial performance of companies in the consumer service sector of Botswana ROA, ROE and Tobin's Q on one hand, with total debt to total
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assets is found to have a significant negative association.

Long term debt to total assets significantly impacts EPS.

Awunyo-Victor & Badu (2012)	Leverage Firm performance	Ghana	Panel Regression analysis	Leverage and performance on Ghanaian banks listed on Ghana Stock Exchange are found to be having a significant negative association.
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The banks are also highly geared, since they rely more on short term debt due to bank lending rate that is relatively high.

Bundala (2012)	Leverage Firm characteristics	Tanzania	Descriptive statistics, Regression analysis	<p>The findings of the study provide that there is no strong evidence on static trade off theory validation as well as very little support on pecking order theory.</p> <p>The findings provided in this study also show that the agency cost theory is indeed valid and hence most practiced in Tanzania.</p>
Cotei & Ferhat (2009)	Capital structure Pecking order theory Trade off theory	USA	Multivariate analysis	<p>Under Pecking order theory, factors of the trade-off theory were found to have an important role to play on determining debt proportion to be issued or</p>

purchased.

Under trade-off theory, factors of pecking order theory are found to be the major determinants of rate of adjustment

Thus, trade-off theory as well as the pecking order theory are found to be not mutually exclusive.

Butt, Khan & Nafees (2013)	Leverage, Size of firm, Capital intensity, Liquidity, Profitability, Tangibility of assets	Pakistan	Assets size significantly impact leverage in a negative way.	There is no significant impact of capital intensity, profitability, tangibility, and
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liquidity on leverage.

Pakistan's leasing sector thus follows the pecking order theory as per firm size, liquidity, tangibility, capital intensity and profitability.

DeJong, Verbeek & Vermijmeren (2011)	Capital structure, Firm performance, Pecking order theory, Trade off theory	USA	Multivariate analysis	The study findings show that pecking order theory better describes the decisions issued by firms than trade-off theory.
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However, trade-off theory predicts the capital structure of an organization better than

pecking order theory, that is, when focus is on repurchase decision.

Tifow & Sayilir (2015)	Short term debt to total assets, Long-term debt to total assets, ROE, ROA, EPS, Tobin's Q, Sales growth, Firm size	Turkey	Panel data analysis	Short term debt to total assets ratio with proxies of firm performance such as ROA, Tobin's Q and EPS are found to be negatively related. Long-term debt to total assets ratio was found to be negatively associated to ROE, Tobin's Q and EPS are positively correlated to ROA.
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Nassar (2015)	ROA, ROE, EPS, Debt	Turkey	Multivariate regression	A significant negative
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	ratio		analysis	association of capital structure with firm performance in Borsa Istanbul listed companies is observed.
Twairesh (2014)	Short term debt, Long-term debt, Total debt, ROA, ROE, Firm size	Saudi Arabia	Fixed effect Regression	ROA is significantly impacted by short term debt, long-term debt and total debt. ROE is only significantly associated with long-term debt. When ROA is a dependent variable, firm size significantly impacts firm performance.
Karadeniz, Kandir, Balcilar & Onal (2009)	Tax rates, Asset tangibility, ROA,	Turkey	Dynamic Panel data approach	There is a negative relationship between debt

Debt ratio, Free cash flow, Non-debt tax shield, Growth, Credit position, Firm size	ratio with asset tangibility, tax rates, and ROA. However, non- debt tax shield, free cash flow, net commercial credit position, growth opportunities, and size of firm are not significantly related to debt ratio.
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Kalash (2019)	Leverage, Agency cost, Firm performance	Turkey	OLS	Leverage is found to significantly impact firm profitability negatively. The impact is high for firms with high agency costs (high growth opportunities and few tangible assets) and low on firm with free
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cash flow agency
cost.

Abad et al., (2018)	IFRS Information asymmetry (relative quoted spread, illiquidity measure, price impact)	Spain	Regression analysis	<p>Information asymmetry reduction after the IFRS adoption is observed.</p> <p>The switch to IFRS adoption from local accounting standards is observed to have some significant markets benefits even when there is weak level of enforcement</p> <p>IFRS Adoption increases the quality financial reporting as well as the disclosure, thereby enhancing financial</p>
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				information comparability
Pasca (2015)	IFRS Accounting information	Europe	Research literature	The results of the study provide that the factors that influences accounting quality are legal, political and accounting standards.
Uyar & Gungormus (2013)	IFRS Firm value	Turkey	Regression analysis	The study findings show that IFRS adoption led to great improvements on the accounting quality as well as improving the activeness of the market.
Turki at al. (2017)	IFRS Information asymmetry	European union	Longitudinal study	In the first two years of IFRS adoption a significant decrease in capital cost is

observed as well as dispersion in the forecast of financial analysts. The magnitude of this effect is observed to increase

IFRS adoption effect on errors of financial analysts is found not to be immediate and they tend to decrease starting from third year after first adoption

Adyei et al., (2020)	IFRS Firm value	Africa	Regression analysis	IFRS adoption positively and significantly impacts firm value, and that the impact is more pronounced in
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more
commitment rule
of law
environments.

Firms that have
high financial
constraints
degree indicates
an increase in
firm value.

Full
implementation
of IFRS adoption
provides high
benefits than in
partial or
modified
adoption

Amrutha et al., (2019)	IFRS Accounting ratios	India	Wilcoxon Signed Ranked test	The study results show that there is a significantly high effect of IFRS on accounting ratios in comparison with before the adoption.
Ibiamke &	IFRS	Nigeria	Gray index	IFRS adoption

Ateboh-Briggs (2014)	Accounting ratios	has resulted in a significant negative effect on the financial ratios of Nigerian listed companies, however the impact is not statistically significant.
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Kargin (2013)	IFRS Value relevance	Turkey Ohlson model	<p>Market value is found to be significantly related to book value as well as the on earnings per share.</p> <p>After the IFRS adoption accounting information's value relevance has greatly improved especially from the book values considerations and not on</p>
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At this juncture, we observe that several studies have been done to ascertain the relationship between capital structure and firm performance of various institutions around the world. We observe that different findings have been ascertained by different authors who carried out their studies in different countries. The findings of the past studies provide for a negative relationship between leverage and firm performance, see for example Awunyo-Victor and Badu (2012); Sathyamoorthi et al., (2019); Kalash (2019) with some studies providing that leverage positively affects firm performance, see Abdullah and Tursoy (2019).

We also observe that little has been done to ascertain how IFRS adoption impacts firm performance, such as Abdullah and Tursoy (2019) who provides that IFRS adoption positively impacts firm performance. Thus, there is still a gap that is existing in the literature on the study of the association between IFRS adoption and the firm performance. Therefore, this study is aimed at furthering the study of the relationship between IFRS adoption and bank performance of Turkey. In this study we try to see if IFRS adoption really have any significant effect on performance of Turkish listed banks.

The expectations of this study are as follows: we expect that total debt total assets ratio be positively related to ROA, Stock Price and ROE. IFRS adoption in the listed banks of Turkey in this study is also expected to be positively related with bank performance. Bank growth rate is also expected to have a positive significant association with bank performance in listed Turkish banks. The expected results are summarized above in table 3.

Table 3: Expected results

Independent variables	Dependent variables		
	ROA	ROE	Stock Price
TDTA	+	+	+
IFRS	+	+	+
Bank Size	+	+	+
Growth rate	+	+	+

CHAPTER 3

Methodology and Data

3.1 Sample and 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 4: List of Turkish banks under study in order of their size as of December 2019

Rank	Bank name	Size (total assets in TL)
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 represents market price of stocks of the firm. These three variables are used to proxy performance of companies, 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 5 below we provide a summary on the list of variables under study together with their types, measurement and description.

Table 5: Variables Description

Variable	Type	Measure	Description
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 at level non-stationary 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).

However, other studies postulate that non-stationary of variables at level and stationary at first difference is not a prerequisite for cointegration regressions (Keele & DeBoef, 2008). Stationary variables at level, as long as they are cointegrated are capable of being tested by employing cointegration regressions, Keele and DeBoef (2008). Therefore, whether or not the variables are integrated of the same order I (1), it is of paramount importance to check if variables are cointegrated before employing any cointegration regressions. If they are cointegrated then it is possible to use cointegration regressions despite the fact that some of the variables are I (1).

3.2.2 Cointegration test

If variables are non-stationary at level and stationary at first difference, Granger (1986); Engle and Granger (1987), then they are related through a cointegration relationship such as Z_t , which is stationary. The cointegration equation of variables, say Y_t and X_t , have the following cointegration relationship (Granger, 1986).

$$Z_t = Y_t - aX_t \quad \sim I(0) \quad (1)$$

Where: Z_t is the cointegration relationship between Y_t and X_t that is stationary at level, a is a constant term that connects Y_t and X_t in a cointegration relationship and is unique, see Granger and Weiss (1983). Granger (1986) provides that the relationship in equation 1 above may contain some seasonal problems. However, another relationship such as one below may exist that has no seasonal issues.

$$Y_t = aX_t \quad (2)$$

If two or more variables are cointegrated then there are said to have a long-run relationship and hence cointegration regressions can be employed to ascertain the variables' relationship.

3.2.3 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 firms, 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.

CHAPTER 4

Data analysis and results

4.1 Descriptive statistics results

Table 6: Descriptive statistics

	ROA	ROE	SIZE	STOCK	TDTA	IFRS	GROWTH
Mean	1.6403	13.508	40425.3	2165.4	0.8653	0.8333	0.1331
Median	1.5653	13.481	33936.5	2.6350	0.8896	1.0000	0.0950
Maximum	20.717	40.332	115134	165830	0.9780	1.0000	0.9600
Minimum	-17.99	-97.190	273.59	0.0000	0.2429	0.0000	-0.3600
Std. Dev.	2.6714	11.797	33671	12984	0.1077	0.3736	0.2027
Skewness	0.2007	-4.2143	0.3594	10.556	-4.3181	-1.7888	0.8307
Kurtosis	38.375	41.426	1.7283	129.72	22.430	4.2000	4.1125
Sum	324.79	2674.6	8004222	428763	171.346	165.00	26.370
Observations	198	198	198	198	198	198	198

This paper in table 6 above provides the descriptive statistics results of variables under study. All variables, ROA, ROE, stock price, total debt/total assets ratio, bank size, growth rate and IFRS, have 198 observations each. For ROA, the mean value is 1.64, with standard deviations of 2.67 and sum value of 324.79. ROE also provides a mean

value of 13.51, standard deviation of 11.79 and a sum value of 2 674.6. Stock price has a mean value of 2 165.4, with a standard deviation of 12 984 and a sum value of 428 763 for the period under study. The mean value of total debt/total assets ratio, bank size, growth rate and IFRS are 0.86; 40 425.37; 0.13; and 0.83 respectively; with standard deviations of 0.11; 33 671.55; 0.20; and 0.37 respectively and sum values of 171.34; 8 004 222; 26.37; and 165 respectively. The rest of the values of median, maximum, minimum, slowness and kurtosis are provided in table 6 above.

4.2 Results of Correlation analysis

Table 7: Results of Correlation analysis

Correlation							
t-Statistic							
P-value	ROA	ROE	STOCK	TDTA	SIZE	GROWTH	IFRS
ROE	0.6066	1.0000					
	10.682						
	0.0000**						
STOCK	-0.0024	-0.0090	1.0000				
	-0.0339	-0.1262					
	0.9730	0.8997					
TDTA	0.1109	0.2227	0.0199	1.0000			
	1.5632	3.1988	0.2790				
	0.1196	0.0016**	0.7805				
SIZE	0.0595	0.1699	0.2111	0.2543	1.0000		
	0.8355	2.4140	3.0237	3.6811			
	0.4045	0.0017**	0.0028**	0.0003**			
GROWTH	0.1365	0.2181	-0.0974	-0.0767	-0.2592	1.0000	
	1.9293	3.1297	-1.3713	-1.0772	-3.7577		
	0.0551	0.0020**	0.1718	0.2827	0.0002**		
IFRS	0.0212	-0.0329	0.0746	0.2227	0.3690	-0.2852	1.0000
	0.2972	-0.4614	1.0479	3.1989	5.5586	-4.1656	
	0.7666	0.6450	0.2960	0.0016**	0.0000**	0.0000**	

** , * represents 1% and 5% level of significant

The study shows that there is a significant positive correlation between ROA and ROE. This implies that ROE and ROA move together in the same direction, such that an increase in ROA will result in a 60.66% increase in ROE, see table 7 above. However, the study shows no significant relationship between ROA on one hand; and stock price, the ratio of total debt/total assets, bank size, growth rate and IFRS on the other hand, they are not correlated.

Furthermore, we observed a significant positive correlation between ROE on one hand with total debt/total assets ratio, bank size, and growth rate on the other hand. This show that an increase in ROE has the effects of increasing total debt total assets ratio, bank size and growth rate and that an increase in ROE. The study results also provides no significant correlation between ROA on one hand, with stock price and IFRS on the other hand. Stock price is also significantly positive correlated with bank size and not significantly related with total debt total assets, growth rate and IFRS. The rest of the correlation results and their t-statistics are provided in table 7 above.

4.3 Results of unit root test

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 8 below. The results according to Augmented Dicker 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. Therefore, we follow the proposition of Keele and DeBoef (2008), that even if variables have no same order of integration but cointegrated then cointegration regressions can be employed.

Table 8: 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 (0)

** , * represents 1% and 5% level of significant

4.4 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 9 below of this study we provide the results of Pedroni cointegration results. The results in table 9 below shows that for ROA model, Pedroni (within-dimension) panel v-statistic is significant at 0.01 level of significant and insignificant in the case of weighted statistic value. Moreover, the Pedroni (within-dimension) panel rho-statistic is significant at 0.01 level of significant while its within-dimension weighted statistic is insignificant as well as its between-dimension statistic. The results of the panel PP-statistic both within dimension and between dimension is significant at 1% level and lastly the panel ADF-statistic is significant for within-dimension results and insignificant for the between-dimension statistic, see table 9 below. Therefore, we ascertain that ROA, total debt, total debt total assets ratio, bank size, growth rate and IFRS are cointegrated as per Pedroni cointegration results. This implies that they have a long-run relationship, Granger (1986).

Table 9: Pedroni cointegration test results

Dependent Variable		Within-dimension				Between-dimension	
		Statistic	P-value	Weighted Statistic	P-value	Statistic	P-value
ROA	v-Statistic	3.0997	0.0010**	-0.5863	0.7212		
	rho-Statistic	-2.8046	0.0025**	-0.6559	0.2559	0.7388	0.770
	PP-Statistic	-14.673	0.0000**	-8.2098	0.0000**	-8.6694	0.000**
	ADF-Statistic	-3.6432	0.0001**	-1.4107	0.0792	-1.0015	0.158
ROE	v-Statistic	1.9276	0.0270*	0.0302	0.4879		
	rho-Statistic	-0.8649	0.1935	-1.6161	0.0530	-0.5601	0.287
	PP-Statistic	-4.3189	0.0000**	-6.9564	0.0000**	-9.3959	0.000**
	ADF-Statistic	-0.2230	0.4117	-2.4432	0.0073**	-3.5508	0.000**
STOCK	v-Statistic	6.8766	0.0000**	-1.8550	0.9682		
	rho-Statistic	2.8520	0.9978	2.0206	0.9783	3.1495	0.999
	PP-Statistic	4.6641	1.0000	-8.0523	0.0000**	-12.102	0.000**
	ADF-Statistic	2.3463	0.9905	-3.3007	0.0005**	-3.200	0.000**

**; * represents 1% and 5% level of significant

For ROE model of this study provides in table 9 above that, within-dimension panel v-statistic is significant at 5% level, and the weighted statistic is insignificant at 5% level. Moreover, within-dimension panel rho-statistic is insignificant at 10% level, weighted statistic is significant at 10% level and between-dimension statistic is insignificant at 10% level. Panel PP-statistic within-dimension statistic, weighted statistic and between dimension statistic is significant at 1% level. The results of panel ADF-statistic within-dimension statistic is insignificant, while within-dimension weighted statistic and between-dimension statistic is significant. Thus, we ascertain that the variables ROE, total debt total assets ratio, bank size, growth rate and IFRS are cointegrated. A cointegration relationship exists between these variables and they have a long-run relationship.

The cointegration results for stock price model as per Pedroni cointegration test provide that panel v-statistic, within-dimension statistic is significant at 1% level, while the

weighted statistic is not significant. Panel rho-statistic, within-dimension statistic, weighed statistic and between-dimension statistic are not significant at 10% level. Panel PP-statistic, within-dimension statistic results is not significant, while within-dimension weighted statistic and between-dimension statistic is significant at 1% level. Panel ADF-statistic, within-dimension statistic is not significant, while within-dimension weighted statistic and between-dimension statistic is significant at 1% level. Hence, we ascertain that stock price, total debt total assets ratio, bank size, growth rate and IFRS are cointegrated indicating that they have a long-run relationship. The rest of Pedroni cointegration test results are provided in table 9 above.

Table 10: Kao cointegration test results

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

**; * represents 1% and 5% level of significant

In addition to the Pedroni cointegration test results, we provide the Kao cointegration test results in table 10 above. 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 10 above. Therefore, the variables of this study are cointegrated and thus we can employ the cointegration regressions (FMOLS, DOLS) to determine their causal relationship. The section that follows thus, gives the results of FMOLS and DOLS.

4.5 Fully Modified Ordinary Least Square (FMOLS) results

The study results in table 11 below shows that ROA and total debt total assets ratio (TDTA) are significantly and negatively related at 1% level. The p-value is less than 0.01 level of significant and the coefficient is -59.94. Thus, an increase in the total debt total assets ratio which happen to be the leverage ratio of Turkish listed banks by 1 unit has the effect of decreasing Return on Assets (ROA) by 59.94 units. This is an indication of a very strong negative relationship since it is significant at 1% level and the

change in a single unit of leverage ratio is causing high negative change in ROA. The findings of this study are consistent with the results 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 (bank performance) of banks in Turkey the debt ratio should be kept at minimum value.

Moreover, IFRS adoption in this study is found to be significantly related with ROA at 1% level of significant, see table 11. The coefficient of IFRS in relation to ROA is positive, 2.78 indicating that an increase in IFRS adoption by 1 unit will result in an increase in ROA by 2.78 units. Therefore, IFRS adoption has a significant impact on ROA of Turkish listed banks. The results of this study 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.

On the other hand, growth rate of Turkish listed banks is found to have an insignificant impact on ROA at 10% level of significant, see table 11 below. Even though the coefficient value of growth rate in relation to ROA is positive of 0.698, indicating that an increase in growth rate should increase ROA, however its pact is not significant as given by the p-value which is greater than 10% level of significant. Bank size according to FMOLS results in table 11 below is not significantly associated to ROA. The coefficient is positive, 3.22, implying that an increase in the size if the bank by 1 unit may result in an increase in ROA by 3.22 units, but the p-value is not significant at 10% level hence we conclude that bank size is not significantly related to ROA, it has no significant impact on ROA.

Table 11: FMOLS results

Dependent Variable	Independent Variable	Coefficient	Std. Error	t-Statistic	P-value	R-squared	Adjusted R-squared
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		

**; * represents 1% and 5% level of significant

In the case of ROE model, this study in table 11 above provides FMOLS results that total debt total assets ratio is negatively and significantly related to ROE. The value is less than 0.01 level of significant and they coefficient is negative 125.58 indicating that an increase in total debt to total assets ratio by one unit may result in a decrease in ROE by 125.58 units. Thus, the results provided by FMOLS test in table 11 below shows that leverage in Turkish listed banks negatively impacts Return on Equity. 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 negative association the performance of companies and leverage. Therefore, debt financing has to be minimized to increase ROE.

On the other hand, bank size of listed banks in Turkey has no significant impact on ROE as provided for in table 11 above. The coefficient value is positive (2.34) implying that an increase in bank size should increase ROE, however p-value is greater than 0.1 level of significant indicating that the impact is not significant. The results provided in

table 11 below of fully modified ordinary least square shows that growth rate of listed banks in Turkey significantly affects return on equity. This is so because the value of growth rate is significant at 5% level of significant and the coefficient value is positive 13.39 indicating that an increase in growth rate by one unit may result in an increase in return on equity by 13.39 units. Therefore, growth rate of listed banks in Turkey significantly and positively affects return on equity, as a result growth rate increase of Turkish banks may result in an increase on its return on equity.

Furthermore, FMOLS results in table 11 also shows that there is a significant positive relationship between IFRS and ROE. The value is significant at 5% level of significance and the coefficient value is positive 7.63 indicating that an increase in IFRS by 1 unit may result in a significant increase in ROE by 7.63 units. Thus, we ascertain that IFRS adoption in the banking sector of Turkey significantly affect Return on equity in a positive way. These findings are consistent with that of Abdullah and Tursoy (2019); Adyei et al., (2020) who provided that IFRS adoption increases firm performance in listed firms of Germany.

The results of stock price in table 11 above shows that total debt to total assets ratio is not significantly related to stock price of listed banks in Turkey. This is so because the total debt total assets ratio's value is not significant at 10% level of significance, since it is greater than 0.1, hence we conclude that total debt to total assets is not significantly related to stock price. However, it can be noted that the coefficient value of total debt total asset ratio is negative indicating that total debt total asset ratio increase may result in a decrease in stock price however this is not significant.

In addition to that the results of bank size in table 11 above shows the existence of a significant negative association between banks size and stock price of listed banks in Turkey. The value is less than 0.01 and the coefficient value is negative 0.28 indicating that an increase in bank size results in a significant decrease in stock price by 0.28 units. However, these results are not consistent with Abdullah and Tursoy (2019) who observed a positive relationship 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.

The results of IFRS in table 11 above shows that IFRS is not significantly associated to stock price of Turkish banks. This is so because the P-value is greater than 0.1 level of significant. Inasmuch as its coefficient value is positive, indicating that an increase in IFRS adoption may cause stock price to increase, however the impact is not significant hence it does not significantly affect stock price. These results are not consistent with the findings of Abdullah and Tursoy (2019) The results of growth rate in relation to stock price in Turkey listed banks also shows that growth rate of listed banks does not significantly impact stock price because it's p-value is greater than 0.1 level of significant.

The rest of the results of fully modified ordinary least square is provided in table 11 above 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.

4.6 Dynamic Ordinary Least Square (DOLS) results

In this section of this study, we provide the results of dynamic ordinary least squares. We start by providing the results of return on assets in relation to the dependent variables total debt total assets ratio, bank size, IFRS and growth rate. The results in table 12 below shows that total debt to asset ratio is significantly associated in a negative way with return on asset. This is so because the p-value is significant at 0.01 level since it is less than 0.01 and its coefficient value is negative 14.01 indicating that an increase in total debt total assets ratio may result in a decrease in return on asset. 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. Therefore, the results provided by FMOLS in the section above are found to be similar to those of DOLS in this section. 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 12 below of dynamic ordinary least squares on the association between banks size and return on assets shows that a significant positive association between bank size of listed banks in Turkey and return on assets. This is so because the p-value of bank size is significant at 0.01 level of significance and its coefficient value is positive 6.23 indicating that an increase in bank size of listed banks in Turkey has the effect of increasing return on assets. Therefore, we ascertain that as banks in Turkey increase in their size, their performance as per return on assets tend to increase.

Table 12: DOLS results

Dependent Variable	Independent Variable	Coefficient	Std. Error	t-Statistic	P-value	R-squared Adjusted R-squared
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	

**; * represents 1% and 5% level of significant

Moreover, the results in table 12 above also shows that IFRS adoption positively and significantly impacts return on assets. The value of the results is less than 0.01 indicating that it is significant at 1% level of significant and its coefficient value is positive 13.54, indicating that an increase in IFRS adoption by one unit in listed banks of Turkey has the effect of increasing return on assets by 13.54 units. This shows that IFRS adoption positively and significantly increases bank performance of Turkish banks.

The results of this study are consistent with the results by Abdullah and Tursoy (2019); Kargin (2015); Adyei et al., (2020).

The results of growth rate in relation to return on assets in table 12 above shows that the growth rate of Turkish banks is not significantly related to return on assets. This is so because the p-value is greater than 0.1 indicating that it is not significant at 10% level of significant. Inasmuch as the coefficient value of growth rate is positive implying that increases in growth rate tend to increase return on assets. However, this result is not significant hence it does not impact return on assets in a significant way.

On the relationship between return on equity and other independent variables table 12 above provide the results of dynamic ordinary least square as follows. Total debt total assets ratio is found not to significantly affect return on equity. This is so because its p-value is greater than 0.1 indicating that at 10% level of significant total debt total asset ratio does not affect return on equity. However, the coefficient value is negative 6.19 indicating that an increase in total debt to asset ratio should decrease return on equity but this association is not significant as shown by the value therefore no significant association between these two variables exist. The R-square and adjusted R-square results of the return on equity model are very high 99.29 and 96.03% respectively, showing that the results are robust and reliable.

Moreover, bank size of Turkish listed banks and return on equity are associated in a significant negative way. The value is less than 0.05 level of significant indicating that it 5% level of significant bank size impacts return on equity negatively. 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. The results also show that an increase in bank size of Turkish listed banks by 1 unit has the effect of decreasing return on equity by 0.0034 units and this is very low in as much as it is significant.

In addition to that the results in Table 12 above shows that IFRS adoption is not significantly associated to return on equity. This is so because the p-value is greater

than 0.1 level of significant indicating that a 10% level of significance IFRS does not impact return on equity. In as much as its coefficient value is positive 9.51 indicating that increases in IFRS adoption in listed banks of Turkey should increase return on equity, however this is not so since it is not significant. Therefore, we ascertain that IFRS adoption according to dynamic ordinary least square results does not significantly impact the return on equity of listed banks of Turkish.

The results also show that growth rate of Turkish listed banks it does not significantly affect return on equity according to the dynamic ordinary least square results in table 12 above. The value is greater than 0.1 level of significant indicating that at 10% level of significance growth rate of listed banks in Turkey does not impact return on equity. The coefficient value is negative 30.58 implying that an increase in growth rate should decrease return on equity, however these results are not significant hence there is no impact of growth rate on return on equity. The results of the adjusted R-square and R-square of return on equity in relation to the dependent variables is very high at 88.59% and 98.75% respectively indicating that the results are robust and reliable.

In the case of stock price model, the results provided in table 12 above shows that total debt total asset ratio is not significantly related to stock price. This is so because the p-value is greater than 0.1 level of significant indicating that at 10% level of significance total debt total assets ratio does not impact stock price. Its coefficient value is however positive indicating that an increase in total debt total assets ratio should tend to increase stock price but this relationship is not significant at 10% level of significance.

Furthermore, the results of bank size of Turkish listed banks, according to dynamic ordinary least square results provided in table 12, is significantly related to stock price at 1% level of significant. The value is less than 0.01 level of significance indicating that at 1% level of significant bank size significantly impact stock price in a negative way. The coefficient value is negative implying that bank size of Turkish listed banks negatively impacts stock price. An increase in bank size by 1 unit will result in a decrease in stock price by 0.4685 units.

The results also show that IFRS adoption in listed banks of Turkey does not significantly impact stock price. This is so because the p-value of the results as provided by table 12 above indicates that it is greater than 0.1 level of significant. This implies that at 10% level of significance IFRS adoption does not significantly impact stock price. The coefficient value is positive indicating that IFRS adoption should positively affect stock price however since the p-value is greater than 0.1 level of significant this relationship is not significant.

Moreover, the results also show that growth rate of listed banks of Turkey does not significantly affect stock price because its p-value is greater than 0.1 level of significant indicating that at 10% level of significance growth rate does not impact stock price. Its coefficient value is however negative implying that growth rate should negatively affect stock price of listed banks of Turkey but its p-value is greater than 0.1 level of significant, therefore we conclude that this relationship is not significant. The results of R-square and adjusted R-square of the stock price model is high at 59.8% and 36.09% respectively showing that the results of the model are robust reliable and valid.

4.7 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 13: Granger causality results

Null Hypothesis:		Observations	F-Statistic	Prob.
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 performance of firms and leverage 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 effect 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 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, no significant association exists 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

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.

Future recommendations

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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Appendix

Table 12: Data

<i>Crossid</i>	<i>year</i>	<i>roa</i>	<i>roe</i>	<i>stock</i>	<i>tdta</i>	<i>growth</i>	<i>size</i>	<i>ifrs</i>
1	2002	1.31	7.32	0.00	0.82	0.28	14,472.55	0.00
1	2003	1.36	7.55	0.00	0.82	0.54	22,294.74	0.00
1	2004	1.65	8.32	0.00	0.80	0.29	28,821.20	0.00
1	2005	1.82	12.51	0.00	0.85	0.65	47,482.83	1.00
1	2006	1.47	11.79	0.00	0.87	0.13	53,503.67	1.00
1	2007	2.12	15.97	18,123.42	0.87	0.29	69,163.22	1.00
1	2008	1.55	15.97	20,255.97	0.90	-0.07	64,102.98	1.00
1	2009	2.10	17.58	15,667.91	0.88	0.19	76,126.74	1.00
1	2010	2.26	17.53	29,177.26	0.87	0.13	85,715.72	1.00
1	2011	1.65	14.88	25,919.39	0.89	0.00	85,588.70	1.00
1	2012	1.89	14.57	28,107.90	0.87	0.15	98,697.37	1.00
1	2013	1.50	13.42	16,207.95	0.89	0.00	98,807.75	1.00
1	2014	1.42	11.54	16,453.75	0.88	0.03	102,184.01	1.00
1	2015	1.15	10.37	13,897.41	0.88	-0.08	94,485.31	1.00
1	2016	1.61	13.53	14,996.43	0.88	-0.06	88,550.21	1.00
1	2017	1.64	1.64	17,000.00	0.88	0.08	96,066.31	1.00
1	2018	1.66	14.55	45,900.00	0.88	-0.18	78,846.36	1.00
1	2019	1.38	11.22	165,830.00	0.87	0.00	78,797.89	1.00
2	2002	2.80	21.10	1.10	0.87	0.27	14,912.42	0.00
2	2003	4.49	26.27	1.87	0.83	0.42	21,161.79	0.00
2	2004	2.92	16.39	2.67	0.82	0.23	26,126.93	0.00
2	2005	2.80	23.07	4.30	0.88	0.49	39,040.49	1.00
2	2006	2.79	22.65	4.22	0.88	0.04	40,728.70	1.00
2	2007	2.92	18.81	5.27	0.84	0.44	58,832.70	1.00
2	2008	1.99	15.21	2.48	0.87	-0.04	56,285.33	1.00
2	2009	2.86	19.21	5.03	0.85	0.14	64,082.20	1.00
2	2010	2.52	16.26	6.20	0.84	0.15	73,609.92	1.00
2	2011	1.79	13.64	4.43	0.87	-0.04	70,703.50	1.00
2	2012	1.89	13.46	6.58	0.86	0.24	87,676.38	1.00
2	2013	1.60	13.79	5.08	0.88	-0.02	86,245.46	1.00
2	2014	1.54	12.58	6.69	0.88	0.02	88,293.70	1.00
2	2015	1.31	11.72	5.27	0.89	-0.09	80,466.40	1.00

2	2016	1.78	15.47	6.27	0.89	-0.04	77,010.82	1.00
2	2017	1.97	16.07	8.10	0.87	0.09	83,785.59	1.00
2	2018	1.65	13.39	5.88	0.87	-0.26	62,041.68	1.00
2	2019	1.53	10.68	8.11	0.85	-0.02	60,690.42	1.00
3	2002	0.63	7.33	0.44	0.91	0.07	11,930.55	0.00
3	2003	1.35	12.30	0.87	0.89	0.35	16,071.20	0.00
3	2004	1.72	14.22	1.29	0.88	0.22	19,657.20	0.00
3	2005	1.98	18.78	2.55	0.89	0.38	27,178.60	1.00
3	2006	2.12	22.78	2.46	0.91	0.32	35,776.12	1.00
3	2007	3.43	33.64	5.30	0.90	0.63	58,292.49	1.00
3	2008	1.97	18.49	2.23	0.89	0.00	58,444.51	1.00
3	2009	2.81	22.25	5.51	0.87	0.21	70,908.39	1.00
3	2010	2.54	19.09	6.85	0.87	0.14	80,621.38	1.00
3	2011	2.09	17.47	5.26	0.88	-0.04	77,633.78	1.00
3	2012	1.92	14.41	8.46	0.87	0.16	90,117.29	1.00
3	2013	1.53	13.31	6.45	0.89	0.03	92,422.18	1.00
3	2014	1.46	12.31	8.84	0.88	0.02	94,081.61	1.00
3	2015	1.39	12.08	6.79	0.88	-0.07	87,160.34	1.00
3	2016	1.88	15.06	7.38	0.87	-0.07	80,744.32	1.00
3	2017	1.93	15.53	10.72	0.87	0.07	86,225.05	1.00
3	2018	1.84	14.77	7.96	0.87	-0.21	68,069.91	1.00
3	2019	1.61	12.09	11.14	0.86	-0.03	65,850.55	1.00
4	2002	0.95	4.07	22.70	0.77	0.14	1,932.62	0.00
4	2003	2.65	10.69	34.55	0.75	0.33	2,561.87	0.00
4	2004	2.05	10.66	38.88	0.81	0.54	3,953.61	0.00
4	2005	3.14	21.34	38.34	0.85	0.48	5,854.83	1.00
4	2006	2.73	22.00	45.93	0.88	0.25	7,308.08	1.00
4	2007	2.71	18.04	44.06	0.85	0.59	11,586.48	1.00
4	2008	1.70	11.00	27.34	0.85	-0.17	9,656.94	1.00
4	2009	1.78	9.88	33.39	0.82	-0.04	9,311.99	1.00
4	2010	1.37	8.99	30.86	0.85	0.24	11,535.72	1.00
4	2011	1.00	8.61	24.05	0.88	0.11	12,775.66	1.00
4	2012	0.71	5.93	35.05	0.88	0.11	14,231.86	1.00
4	2013	0.08	0.99	38.03	0.92	0.19	17,005.56	1.00
4	2014	-0.17	-1.87	34.17	0.91	-0.15	14,535.00	1.00
4	2015	-1.01	-11.71	30.23	0.92	-0.25	10,845.21	1.00
4	2016	-1.27	-14.24	33.19	0.91	-0.36	6,924.70	1.00

4	2017	-0.24	-2.55	45.14	0.90	-0.06	6,529.31	1.00
4	2018	1.07	12.10	37.90	0.91	-0.05	6,213.09	1.00
4	2019	1.43	16.06	37.91	0.91	-0.05	5,883.33	1.00
5	2002	5.85	40.21	0.47	0.85	0.08	11,481	0.00
5	2003	0.78	4.61	1.00	0.83	0.31	15,023	0.00
5	2004	-0.24	-1.27	1.41	0.81	0.23	18,427	0.00
5	2005	-6.47	-97.19	2.05	0.93	-0.03	17,787	1.00
5	2006	1.05	15.32	2.02	0.93	0.96	34,872	1.00
5	2007	1.41	14.46	3.39	0.90	0.25	43,434	1.00
5	2008	1.64	15.21	1.28	0.89	-0.04	41,874	1.00
5	2009	2.10	16.39	2.00	0.87	0.04	43,408	1.00
5	2010	2.43	19.97	2.96	0.88	0.27	55,135	1.00
5	2011	1.72	15.88	1.64	0.89	0.04	57,231	1.00
5	2012	1.57	11.35	3.16	0.86	0.20	68,733	1.00
5	2013	2.15	18.50	2.29	0.88	0.02	69,884	1.00
5	2014	1.02	9.65	3.08	0.89	0.33	77,872	1.00
5	2015	0.86	8.55	2.12	0.90	-0.03	75,518	1.00
5	2016	1.25	11.83	2.21	0.90	-0.05	71,840	1.00
5	2017	1.26	11.88	2.80	0.90	0.10	78,955	1.00
5	2018	1.35	12.56	1.60	0.89	-0.17	65,905	1.00
5	2019	0.95	8.95	2.48	0.89	-0.01	65,235	1.00
6	2002	20.72	40.13	0.47	0.89	0.13	22,984.68	0.00
6	2003	2.30	18.39	1.00	0.88	0.46	33,485.88	0.00
6	2004	2.69	30.33	1.41	0.91	0.27	42,650.87	0.00
6	2005	2.92	31.62	2.05	0.91	0.14	48,479.78	1.00
6	2006	2.92	31.92	2.02	0.91	0.06	51,155.21	1.00
6	2007	2.90	32.57	3.39	0.91	0.36	69,819.99	1.00
6	2008	2.04	28.99	1.28	0.93	-0.02	68,611.18	1.00
6	2009	2.82	33.91	2.00	0.92	0.22	83,727.92	1.00
6	2010	2.46	27.59	2.96	0.91	0.17	98,308.86	1.00
6	2011	1.31	15.94	1.64	0.98	-0.13	85,065.99	1.00
6	2012	1.63	15.44	3.16	0.89	0.08	91,622.28	1.00
6	2013	1.60	18.13	2.29	0.91	0.06	97,413.61	1.00
6	2014	1.64	14.19	3.08	0.88	0.09	106,407.80	1.00
6	2015	1.79	17.16	2.12	0.90	-0.02	103,782.71	1.00
6	2016	1.99	1.79	2.21	0.89	-0.02	101,659.86	1.00
6	2017	2.08	19.13	2.80	0.89	0.13	115,134.15	1.00

6	2018	1.56	14.76	1.60	0.89	-0.12	101,714.85	1.00
6	2019	1.01	9.85	2.48	0.89	0.08	109,386.56	1.00
7	2002	-11.61	-15.81	1.64	0.27	0.00	273.59	0.00
7	2003	-17.99	-24.51	2.21	0.27	0.13	308.12	0.00
7	2004	3.46	4.56	3.73	0.24	0.26	387.31	0.00
7	2005	3.60	5.51	7.24	0.33	0.33	514.23	1.00
7	2006	17.67	29.05	2.24	0.39	0.22	628.78	1.00
7	2007	5.27	9.41	2.12	0.44	0.12	705.43	1.00
7	2008	3.58	7.58	1.11	0.53	-0.05	672.80	1.00
7	2009	1.99	5.13	1.73	0.61	0.29	865.36	1.00
7	2010	1.32	4.11	2.55	0.68	0.20	1,038.76	1.00
7	2011	0.85	4.49	1.47	0.81	0.42	1,479.04	1.00
7	2012	1.52	7.56	1.77	0.80	0.09	1,614.57	1.00
7	2013	1.03	6.06	1.43	0.83	0.03	1,669.20	1.00
7	2014	1.20	7.30	1.45	0.84	0.01	1,682.44	1.00
7	2015	1.38	9.25	1.04	0.85	-0.03	1,636.12	1.00
7	2016	1.25	9.52	1.72	0.89	0.22	2,001.17	1.00
7	2017	1.67	11.65	3.36	0.86	0.19	2,381.60	1.00
7	2018	1.22	12.23	17.00	0.91	0.25	2,975.73	1.00
7	2019	2.44	21.34	43.60	0.88	0.10	3,261.94	1.00
8	2002	0.78	7.24	0.15	0.89	0.31	1,447.29	0.00
8	2003	1.79	15.59	0.30	0.89	0.41	2,044.80	0.00
8	2004	0.95	8.57	0.60	0.90	0.30	2,668.26	0.00
8	2005	1.57	18.35	1.67	0.91	0.51	4,040.74	1.00
8	2006	1.28	19.15	1.78	0.93	0.46	5,890.41	1.00
8	2007	1.11	14.31	2.69	0.92	0.73	10,179.35	1.00
8	2008	1.11	11.53	0.76	0.90	-0.05	9,683.31	1.00
8	2009	1.40	12.74	2.60	0.89	0.05	10,128.12	1.00
8	2010	1.58	16.57	2.23	0.90	0.22	12,377.15	1.00
8	2011	0.54	4.91	1.44	0.89	0.63	20,166.10	1.00
8	2012	1.12	10.11	2.04	0.89	0.21	24,489.39	1.00
8	2013	1.00	10.12	2.20	0.90	0.02	25,069.77	1.00
8	2014	0.99	10.55	2.45	0.91	0.08	27,071.16	1.00
8	2015	1.25	13.50	5.95	0.90	-0.09	24,660.00	1.00
8	2016	1.22	12.50	0.00	0.90	-0.08	22,654.98	1.00
8	2017	1.08	10.58	0.00	0.89	0.00	22,736.08	1.00
8	2018	1.00	10.42	0.00	0.90	-0.19	18,367.20	1.00

8	2019	1.04	10.98	0.00	0.91	-0.02	18,072.42	1.00
9	2002	3.41	32.49	0.00	0.90	-0.01	10,617.00	0.00
9	2003	2.51	18.92	0.00	0.87	0.31	13,896.04	0.00
9	2004	2.05	17.54	0.00	0.88	0.38	19,239.18	0.00
9	2005	2.06	16.79	0.00	0.88	0.05	20,161.69	1.00
9	2006	2.51	22.84	0.00	0.89	0.21	24,491.10	1.00
9	2007	2.81	25.80	12.20	0.89	0.42	34,705.82	1.00
9	2008	1.99	23.74	4.44	0.92	-0.03	33,575.96	1.00
9	2009	2.69	28.32	15.00	0.91	0.21	40,778.65	1.00
9	2010	2.76	27.00	21.00	0.90	0.16	47,439.12	1.00
9	2011	2.24	23.67	13.53	0.91	0.02	48,241.65	1.00
9	2012	2.40	21.06	19.47	0.89	0.26	60,914.51	1.00
9	2013	1.97	19.45	11.39	0.90	0.08	65,688.84	1.00
9	2014	1.42	13.34	11.85	0.89	0.02	66,794.03	1.00
9	2015	1.30	12.74	7.10	0.90	-0.04	64,332.73	1.00
9	2016	1.22	12.17	5.20	0.91	0.02	65,765.18	1.00
9	2017	1.32	14.63	5.58	0.92	0.23	80,954.07	1.00
9	2018	0.70	9.01	2.55	0.92	-0.11	71,657.27	1.00
9	2019	0.40	5.68	2.04	0.93	0.07	76,943.67	1.00
10	2002	0.81	24.86	0.27	0.97	0.00	760.82	0.00
10	2003	1.07	11.28	0.40	0.91	0.10	837.93	0.00
10	2004	0.44	3.91	0.50	0.89	0.05	878.79	0.00
10	2005	1.42	13.67	1.10	0.90	0.25	1,095.76	1.00
10	2006	1.50	16.26	1.26	0.91	0.28	1,403.01	1.00
10	2007	2.44	25.91	1.22	0.91	0.60	2,240.11	1.00
10	2008	1.42	14.13	0.46	0.90	0.10	2,460.91	1.00
10	2009	1.70	14.16	0.92	0.88	-0.01	2,439.86	1.00
10	2010	0.65	6.00	0.98	0.89	0.14	2,769.72	1.00
10	2011	0.44	5.83	0.66	0.92	0.23	3,412.15	1.00
10	2012	0.86	11.98	2.10	0.93	0.31	4,483.11	1.00
10	2013	0.73	12.82	1.68	0.94	0.09	4,872.52	1.00
10	2014	1.22	13.56	2.28	0.91	-0.06	4,580.65	1.00
10	2015	0.46	6.01	1.78	0.92	-0.02	4,506.24	1.00
10	2016	0.06	0.80	0.00	0.93	0.04	4,678.55	1.00
10	2017	0.64	7.99	0.00	0.92	0.10	5,125.84	1.00
10	2018	0.81	13.01	0.00	0.93	-0.10	4,601.01	1.00
10	2019	0.62	7.67	0.00	0.92	0.06	4,872.86	1.00

11	2002	2.40	40.33	0.00	0.94	0.20	7,765.42	0.00
11	2003	1.36	19.78	0.00	0.93	0.58	12,286.27	0.00
11	2004	2.58	31.01	0.00	0.92	0.47	18,109.02	0.00
11	2005	1.62	12.08	2.99	0.87	0.33	24,133.85	1.00
11	2006	2.08	17.15	2.91	0.88	0.09	26,241.04	1.00
11	2007	2.43	19.72	3.78	0.88	0.39	36,581.11	1.00
11	2008	1.44	13.28	1.10	0.89	-0.06	34,297.21	1.00
11	2009	1.93	16.95	4.00	0.89	0.27	43,567.30	1.00
11	2010	1.56	13.52	3.67	0.88	0.10	48,102.03	1.00
11	2011	1.40	13.19	2.31	0.90	-0.02	47,215.03	1.00
11	2012	1.40	12.25	4.27	0.89	0.25	58,832.28	1.00
11	2013	1.17	12.57	3.64	0.91	0.08	63,601.22	1.00
11	2014	1.11	11.87	4.69	0.91	0.07	67,995.07	1.00
11	2015	1.08	12.33	3.72	0.91	-0.08	62,693.92	1.00
11	2016	1.36	14.73	4.26	0.91	-0.04	60,394.38	1.00
11	2017	1.57	17.21	6.67	0.91	0.19	71,733.53	1.00
11	2018	1.31	15.66	3.90	0.91	-0.13	62,744.87	1.00
11	2019	0.72	9.23	5.51	0.92	0.13	70,610.36	1.00

Plagiarism Report

THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND BANK PERFORMANCE OF LISTED BANKS OF TURKEY UNDER IFRS ADOPTION

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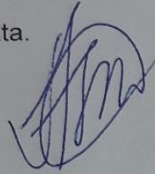
Ethics Committee Report

04.01.2021

Dear Bayan Mohammed,

Your project "The Relationship Between Capital Structure and Bank Performance of Listed Banks in Turkey under IFRS Adoption" has been evaluated. Since only secondary data is used in the project it does not need to go through the ethics committee. You can start your research on the condition that you will use only secondary data.

Sincerely,



Assoc. Prof. Dr. Aliya Isiksal