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IMPACT OF BOARD STRUCTURE ON FINANCIAL PERFORMANCE IN SHIPPING COMPANIES

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İZMİR - 2017

THESIS APPROVAL PAGE

DECLARATION

I hereby declare that this master's thesis titled as "Impact of Board Structure on Financial Performance in Shipping Companies" has been written by me in accordance with the academic rules and ethical conduct. I also declare that all materials benefited in this thesis consist of the mentioned resources in the reference list. I verify all these with my honor.

17/08/2017

Gökçe TUĞDEMİR KÖK

ABSTRACT

Master's Thesis

Impact of Board Structure on Financial Performance in Shipping Companies

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Corporate governance practices are regulated nationally and internationally by the regulatory bodies in many countries, and have become a global state by being organized according to a certain system.

Board structure is one of the most discussed internal corporate governance mechanism that is examined extensively in literature. Researchers specifically focus on the relationship between the board structure and the firm financial performance, and however, the findings are contradictory due to time, country, sector and company specific factors. Additionally, studies focusing on shipping companies are limited in the literature.

The purpose of this study is to analyze the impact of the board structure on the financial performance of shipping companies. The sample of the study is composed of 27 global shipping companies. Companies that apply IFRS (International Financial Reporting Standards) have been selected for the period of 2011 and 2016, and a panel data analysis is conducted.

The findings indicate that company profitability is significantly affected by the board size and the number of women on the board. Moreover, control variables as leverage and institutional ownership are found to be significant in determining shipping company profitability.

Keywords: Corporate Governance, Board Structure, Shipping Companies, Panel Data Analysis

ÖZET

Yüksek Lisans Tezi

Yönetim Kurulu Yapısının Denizcilik Firmalarında Finansal Performansa Etkisi

Gökçe TUĞDEMİR KÖK

Dokuz Eylül Üniversitesi

Sosyal Bilimler Enstitüsü

Denizcilik İşletmeleri ve Yönetimi Anabilim Dalı

Denizcilik İşletmeleri ve Yönetimi Programı

Kurumsal yönetim uygulamaları, birçok ülkedeki düzenleyici organlar tarafından ulusal ve uluslararası düzeyde düzenlenmiş ve belirli bir sisteme göre organize edilerek küresel bir hal almıştır.

Yönetim kurulu yapısı, literatürde geniş çapta incelenen en çok tartışılan iç kurumsal yönetim mekanizmalarından biridir. Araştırmacılar özellikle yönetim kurulu yapısı ile finansal performans arasındaki ilişkiye odaklanmakta fakat bulgular zaman, ülke, sektör ve şirkete özgü faktörler nedeniyle farklılaşmaktadır. Ayrıca, literatürde denizcilik firmalarına odaklanan çalışmalar sınırlı sayıdadır.

Bu çalışmanın amacı, yönetim kurulu yapısının denizcilik şirketlerinin finansal performansı üzerindeki etkisini analiz etmektir. Çalışmanın örneklemi 27 küresel denizcilik şirketinden oluşmaktadır. UFRS (Uluslararası Finansal Raporlama Standartları) uygulanan şirketler 2011 ve 2016 dönemi için seçilmiş ve panel veri analizi uygulanmıştır.

Bulgular, şirket karlılığının, yönetim kurulu büyüklüğünden ve yönetim kurulundaki kadınların sayısından önemli ölçüde etkilendiğini ortaya koymaktadır. Ayrıca, denizcilik şirketlerinin kârlılığını belirlemede borç oranı ve kurumsal yatırımcılar gibi kontrol değişkenlerinin önemli olduğu bulunmuştur.

Anahtar kelimeler: Kurumsal Yönetim, Yönetim Kurulu Yapısı, Denizcilik Firmaları, Panel Veri Analizi

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LIST OF ABBREVIATIONS

BCCI	Bank of Credit and Commerce International
BoD	Board of Directors
CARs	Cumulative Abnormal Returns
CCS	Cost per Client Served
CEO	Chief of Executive Officer
CFO	Chief of Financial Officer
CMB	Capital Markets Board of Turkey
COC	Cost of Capital
CPSP	Cost per Service Provided
CROA	Critical Business Return on Assets
CTA	Cash to Assets
DY	Divided Yield
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortization
EPS	Earnings per Share
ETA	Expenses to Sale
ETS	Expenses to Sale
GLS	Generalized Least Squares
GRO	Growth in Sales
IFRS	International Financial Reporting Systems
ISE	International Securities Exchange
KLSE	Kuala Lumpur Stock Exchange
LOSS	Log of Market Capitalization
LP	Labor Productivity
MTBV	Market-to-Book Value
MVA	Market Value Added
NASDAQ	National Association of Securities Dealers Automated Quotations
NED	Non-Executive Directors
NYSE	New York Stock Exchange

OCF	Operating Cash Flow
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
OP	Operation Profit
OPS	Output per Staff
PE	Price-Earnings Ratio
PM	Profit Margin
PPE	Profit per Employee
RBW	Resource based View
RET	Annual Stock Return
ROA	Return on Assets
ROCE	Return on Capital Employed
ROE	Return on Equity
ROFA	Return on Fixed Assets
ROI	Return on Investment
ROIC	Return on Invested Capital
ROR	Return on Revenue
ROS	Return on Sales
SPE	Sales per Employed
STS	Sales to Assets
SWOT	Strengths, Weakness, Opportunities and Threats
TÜSİAD	Turkish Industry & Business Association
UFRS	Uluslararası Finansal Raporlama Sistemi
UK	United Kingdom
US	United States
USA	United States of America
2SLS	Two-Stage Least Squares

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INTRODUCTION

Corporate governance has recently become a current issue due to the financial crises and corporate scandals such as Adelphia, Enron, and WorldCom (Byrnes et al., 2003). When considered from the management point of view, corporate governance is necessary to make regulations on management systems to increase the performance of the companies and to operate the companies in accordance with these regulations (Topçu, 2006: 5; OECD, 2004: 2-3; Luo, 2005: 3). Corporate governance requires businesses to carry certain principles and affects the performance of the business. Principle aim of corporate governance mechanisms is to remove the conflicts on the board and reduce the agency costs. These are set of control mechanisms which ensure effective and efficient operation of the company. There are divided into internal and external corporate governance mechanisms (Karayel, 2006). External governance mechanisms include the market for control, legal and regulatory structure, and product market competition. Internal governance mechanisms include board structure, ownership structure and institutional investors and executive compensation. The board structure which is an essential part of internal corporate governance, is a significant determinant of financial performance as found by many researchers.

There are many studies in the literature that examine the relationship between board structure and firm performance, however the findings are contradictory due to time, country, sector and company specific factors. Researches that are focused on the shipping companies are limited. As Giannakopoulou et al. (2016) stated that limited studies on corporate governance in shipping act as motivation for researchers. The shipping companies are generally private and family-owned firms. The board of directors is usually made up of family members. The public shares in shipping companies, which have more institutional ownership structure, have only recently increased (Syriopoulos, 2010).

The aim of this study is to analyze the effects of the board structure on the financial performance of the shipping companies. This effect was examined in the six-year period of 2011-2016. The sample consists of 27 shipping firms that apply IFRS in the global shipping sector.

The first chapter of the study includes detailed information about theories of corporate governance, definition and objective of corporate governance, corporate governance principles and mechanisms. In the second chapter, literature review is presented on the relationship between board structure variables and firm financial performance in world and especially in shipping sector. The last chapter includes the analysis of the study showing the data, methodology and the results of the research. The conclusions, as well as discussions, limitations and recommendations were highlighted at the end of the study.

CHAPTER ONE
CORPORATE GOVERNANCE

1.1. THEORETICAL BASIS OF CORPORATE GOVERNANCE

In this section, the theoretical basis of corporate governance is presented within the framework of agency theory, stewardship theory, stakeholder theory, resource dependency theory and transaction cost theory.

1.1.1. Agency Theory

Smith (1776) and Berle and Means (1932) who traced the back origins of agency theory discussed the problem about separation of ownership and control (Marks, 1999). Agency theory is referred with ranking the expedience of owners and managers (Jensen and Meckling, 1976; Stano, 1976; Fama, 1980; Fama and Jensen, 1983).

Agency theory examines the relationship between the principals and agents, creditors and shareholders and large shareholders, minorities and societies and agents. According to the agency theory, shareholders are identified as the owners or principals of company who hire the agents to perform work. Principals are defined as shareholder's agents who delegate the running of business to the directors or managers (Clarke, 2004).In joint-stock companies, the agency costs arise when managers look more at their own interests than at the interests of shareholders. In other words, the reason agency cost arises is the conflict of interest arising from the fact that company ownership and control are in different people (İşeri, 2002:79). Agency cost also results from asymmetric information.

Literature on corporate governance bases upon two factors to agency theory. Firstly, corporations are reduced to two participants who are managers and shareholders. Their interests are presumed to be both clear and consistent. Secondly, humans are self-seeking and unwilling to be willing to pay their personal interests for the interests of the others (Daily et al., 2003). Agency theory which separate ownership and management is implemented by observing conflicts depending upon interest of different parties (Jensen

and Meckling, 1976). Shareholders, managers and debtors which are the main business drivers present these parties according to classic approach (Saltaji, 2013).

According to the agency theory, the agents are expected to act and make decisions in the interest of principal. On the contrary, the agent may not unavoidably make decisions in the optimal interests of the principals (Padilla, 2000). Daily et al (2003) discussed the two factors which can affect the importance of agency theory. Firstly, conceptually and simple theory diminish the corporation to two participants of managers and shareholders. Secondly, employees or managers in organization can be personal interest according to agency theory. Agency theory focalizes on outside rewards that wait upon like this lower-level requirements and security. (Monks and Minow, 2004).

The board is the ultimate internal monitor whose most significant role is to look closer the furthest decision-makers within the firm. Outside directors, those separated from management and daily operations; enable objectivity, while separation of CEO and chair ensure further checks and balances (Sundaramurthy and Levis, 2003).

Argument of separation from decision and risk bearing functions sighted in large corporations and this approach prevailed in other organizations such as large professional partnership, financial mutual and non-profits. Separation of decision and risk-bearing functions asserted to remain alive by large organizations not only by virtue of benefits of specialization of management and risk bearing but also due to effective extensive approach for controlling the agency problems which are occasioned by separation of decision and risk-bearing functions (Fama and Jensen, 1983). Especially, their hypothesis was that the agreement structures of all organizations distinguished the permission and monitoring of decisions from initialization and application of the decisions (Fama and Jensen, 1983).

According to Althaus, 1997; Bonazi and Sardar, 2007; Boston, 1991; Cole, 1998; Hart, 1995 and Shleifer and Vishny, 1997, the primary agency problems have been separation of ownership and control. These problems are;

- Disagreement of interest between owners and managers,
- Asymmetries of information between owners and managers,

- The inadequacy to write whole agreements for all potential future possibilities.

First type leaded by Jensen and Meckling (1976): Monitoring cost, bonding costs and residual loss.

Monitoring cost: Agency cost contains monitoring and understanding of management actions. Performance of trial managers is depending upon enhancing shareholders' wealth. Controlling, rewarding and measuring is paid expenditures which are measure managers' behaviors are called as monitoring costs (Fama and Jensen, 1983).

Bonding costs: Managers generates bonding cost with having probability of financial and non-financial like guarantee proposal from agent, wearing a uniform and sustain well fame (Denis, 2001).

Residual loss: Residual losses are the costs incurred from divergent principal and agent interests despite the use of monitoring and bonding. Residual loss is known as agency loss which gets up from conflicts of interests. This loss is not appreciated to expectations of shareholders, or to role of high-level managers will make an attempt at minimizing agency costs (monitoring cost, bonding cost, residual loss) to encourage an idea of giving bonuses for managers to sign agreements seizing enforcing costs (monitoring cost and bonding cost) making differential cost equal to differential benefits to cut down residual loss (Saltaji, 2013).

Agency conflict arises from different interests of principal and agent. Academic researchers and professional institutions have studied the reasons of these conflicts but these natures of interests are limitless. In 1976 Jensen and Meckling define these reasons by: moral-hazard, earning retention, time-horizon and managerial risk aversion.

Growth of businesses, increased number of business partners (stakeholders) and the effects of globalization; "Corporate governance", a model that focuses on methods and procedures that are built on the basis of integrity, integrity, transparency and accountability (Kavut, 2010) Within the framework of agency theory, corporate governance is defined as the whole of mechanisms developed to harmonize conflicts of interest that may arise among all stakeholder groups (Ülgen and Mirze 2004: 427-428). To cope with the agency problems, board structure, ownership concentration and

institutional investment, executive compensation which are developed as internal governance mechanisms and market for control, legal and regulatory system, product market competition are developed as external governance mechanisms. These mechanisms are explained in detail in section 1.5.

1.1.2. Stewardship Theory

While agency theory focalizes on outside rewards that wait upon like this lower-level requirements and security, stewardship theory focalizes on the higher-order needs, like success and self-realization (Monks and Minow, 2004).

Stewardship theory is depending upon a model of man where a steward senses larger beneficialness in cooperative, pro-organizational behavior rather than self-serving behavior; the theory presumes a significant relationship between organizational success and satisfaction of principal (Davis et al., 1997). Company executives and managers are stewards who are working for the shareholders (Abdullah and Valentine, 2009). According to Agyris (1973)' view, agency theory maintains an employee as an economic being. Agency theory presses an individual ambition. In addition of this, stewardship theory identifies the significance of structures that authorize the steward and gives an offer maximum self-rule built on trust (Donaldson and Davis; 1991).

According to Davis et al. (1997), stewardship theory which is defined as *"a steward protects and maximizes shareholders wealth through firm performance, because by so doing, the steward's utility functions are maximized"* and has its roots from sociology and psychology. Stewardship theory maintains a significance impact on managers and the firm's success and for this reason the steward preserves and maximize shareholder living creature by way of firm performance.

Stewardship theory describes different psychological and sociological characteristics progenitor to the principal-steward relationships and investigates *"a model based on manager-principal choice rather than determinism"* (Davis et al., 1997). Managers serve more likely organizational than personal goals when; (a) Their needs are depending upon grow-out, success and self-realization; (b) They describe themselves with

their organization and also increase high degree of committed to the organizational values; and (c) Their philosophy is depending upon dependence and confidence in a culture based upon fallen power distance and collectivism. Preference of managers acts as agents or stewards or preferences of principals generate an agency or stewardship relationship which is possibility on their psychological motivation and situations perception.

Empirical researchers, depending on whether they assume managers to be agents or stewards, have arrived at different conclusions, with which they attempt to validate a single best way for corporate governance (Düztaş, 2008).Authors discuss situational and psychological mechanisms underlying the two models of man: agent and steward (Davis et al., 1997).

Stewardship and entrepreneurship are two dimensions of corporate governance Good corporate governance are *"as much concerned with correctly motivating managerial behavior towards improving the businesses, as directly controlling the behavior of managers"* (Keasey and Wright, 1997). The dimension of stewardship makes a mention of issues such as fund abuse by non-owner managers and checking of their behavior. On the other hand, the dimension of entrepreneurship is interested in reallocation of economic resources depending innovations and corporate restructuring.

According to Smallman (2004), if entity of shareholder is maximized, the steward's beneficialness will be maximized and for organizational success will serve width necessities and stewards will have mission transparently. He also specifies that, steward redress the balance strain between different beneficiaries and other interest groups. It come to the inference that managers are confidential and authorized of corporate resources and are best available to maximize the shareholders' interest seeing that they are most acquaintance with the confusions of SWOT of corporate (strengths, weakness, opportunities, and threats (Boyd, 1995).

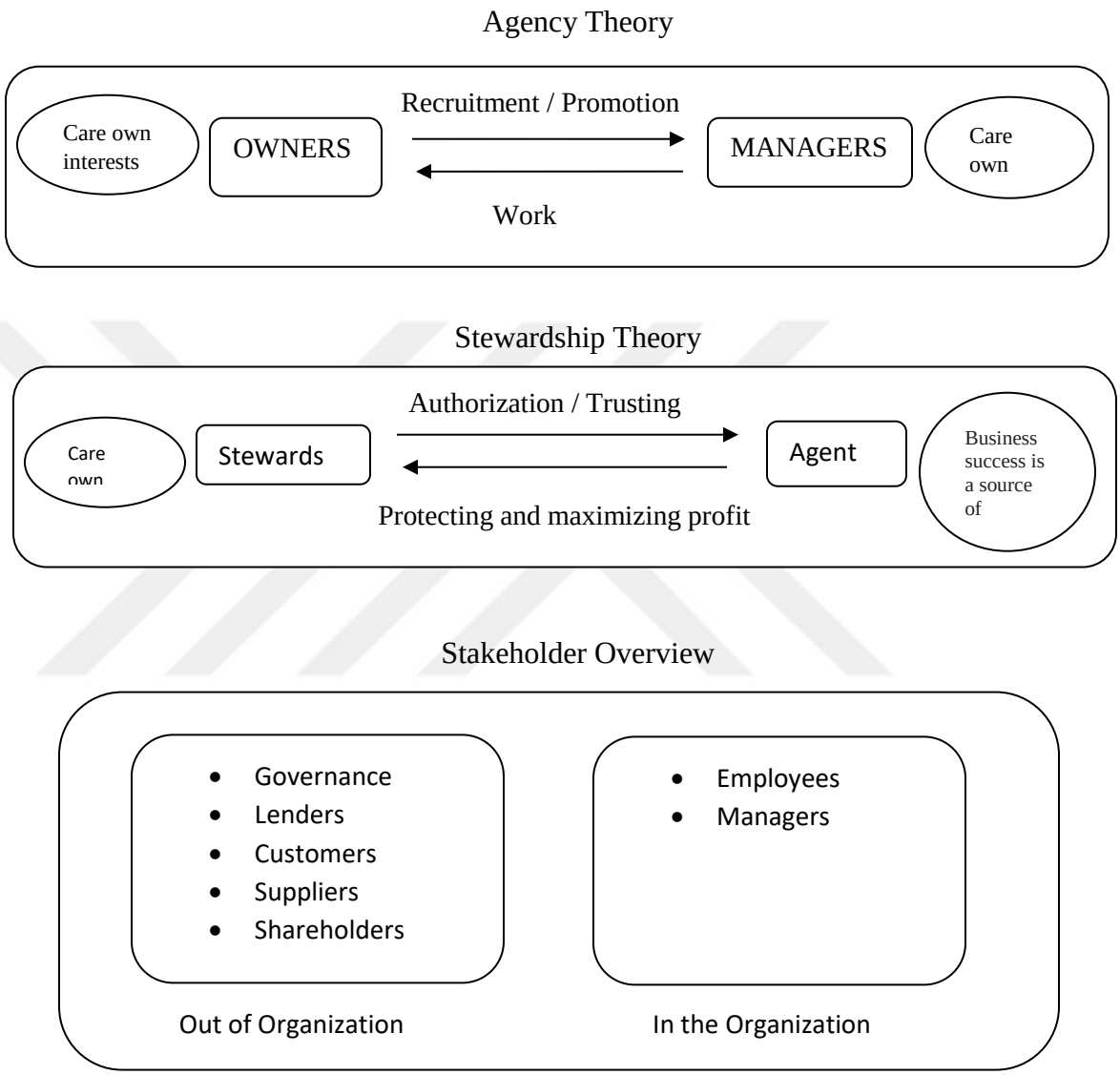
1.1.3. Stakeholder Theory

Management discipline embedded stakeholder theory in 1970 (Abdullah and Valentine, 2009) and Freeman (1984) gradually developed incorporating corporate accountability to extensive variety of stakeholders. Differentiation between stakeholder types which are consubstantial, contractual and contextual stakeholders (Rodriguez et al., 2002). Consubstantial stakeholders are the stakeholders who are fundamental for the business' wealth (shareholders and investors, strategic partners, employees). Contractual stakeholders have some sort of a formal agreement with the business (financial institutions, suppliers and sub-contractors, customers). Finally, contextual stakeholders are representatives the business manages and has a fundamental role in attaining business confidence and, in conclusion, the admission of their activities (public administration, local communities, countries and societies, knowledge and opinion makers) (Rodriguez et al., 2002).

Differently from production view of the firm, managerial view of the firm is in need of top management to *"simultaneously satisfy of the owners, the employees, and their unions, suppliers and customers"* in order to successful (Freeman, 1984). According to stakeholder-serving organization, managers who are different functional disciplines can be more satisfying to the external environment by carrying forward the concept of internal stakeholders as the intermediary firm to external groups. The executives should behave *"corporate spokesperson, political and social participant and manager of the human resources of the firm" (*Freeman, 1984).

Stakeholder theory make certain of participation who are wider component groups such as economic and social stakes (employees, customers, suppliers, stockholders, banks, environmentalists, government). It warrants that their extensive range of interests is considered corporate management and once for all, the societies' interest the whole shoot (Buchholz, 1989). Dinçer (2013) briefly explained the parties, interests and responsibilities of the theorists as agency theory, stewardship theory and stakeholder theory in figure 1.

Figure 1: General Overview of Theories



Source: Dinçer, 2013: 15-26

Stakeholder theory focalizes relationship between various groups for personal interests, resource dependency theory focuses attention the role of board directors to ensure access to firm's resources (Abdullah and Valentine, 2009).Hillman et al. (2000) asserted that resource dependency theory stay focused the role and directors perform in procuring or assuring fundamental resources to an organization by way of linkages

between external environments. Johnson et al. (1996) are all of one mind about theorists of resource dependency who ensure center upon the representatives' assignment of independent organizations for which mean achievement reach in resources critical to achievement of firm. For instance, joints of law firm are outside directors who ensure legal recommendation in board meetings and private communication. On the contrary, these are more costly for the firm security. Hillman et al. (2000) defended that directors work up resources to firm like information, skills, arrival to key components (suppliers, buyers, policy makers, social groups) alongside legitimacy.

1.1.4. Resource Dependency Theory

Resource dependency theory resumes that the boards are a fundamental link between the company and the fundamental resources whose needs' maximize performance (Pfeffer, 1973; Pfeffer and Salancik, 1978).

Main approach of resource dependency theory is organizations initiative to maintain control over their environment by co-selection the resources needed to remain alive (Price, 1963). According to Williamson (1985), the environmental linkages or network governance will decrease costs of operation related to environmental interdependence. The need of organization necessitates resources and these causes growing of exchange relationship or network governance between organizations.

Resource dependency theory takes advantage of sociology and management disciplines (Pettigrew, 1992) whereas there isn't any universally acceptance of resource definition. According to sociologists, three explicit links types which are nation's business elite (Useem, 1984), arrival to capital (Mizruchi and Stearns, 1988; Stearns and Mizruchi, 1993) and competitors which are providing by board. In each case, confidential arguments of researchers are about resource in question which a key predictive factor of achievement is, consequent company's resource based view (RBW) (Barney, 1991; Wernerfelt, 1984). Researchers' view about boards are a possibly significance resource for the corporation, particularly linkage between external environments. In principal literature review in

board-performance, the board's skill links into important resources which are seen as one of the main roles (Zahra and Pearce, 1989; Kakabadse et al., 2001).

The boards of directors which can bring resources to the company in different ways are as good as employees. According to Pfeffer and Salancik (1978)'s suggestion, directors who have to work as advisors bring knowledge into the company. They should be able to generate reach to information channel, privileged reach to resources and firms' legitimacy. Through enabling management of firm with knowledge, the board assists decline the equivocalness and firm fronts to interdependent environment. In this way, the board works as a connection among the company and its environment (Pfeffer 1973; Zahra and Pearce 1989). Directors have a different experience, agreements and relationships, these experiences generate larger information and resource based view for firm to take advantage. Individuals with varied experience, linkages and information manage firms which possess preferable reach to those resources. They are obliged to do optimal in the complicated environment (Terjesen 2009).

1.1.5. Transaction Cost Theory

Firstly, Cyret and March (1963) mention about transaction cost theory and later Williamson (1996) identified and revealed it theoretically. Transaction cost theory is an interdisciplinary theory which contains law, economics and organizations (Williamson, 1996). Transaction cost economies refer to the firm behavior by way of a contractual or exchange based approach. This theory focalizes transactions and its costs by one institutional mode preferably other. In transaction cost theory, two essential aspects of transactions are asset specificity and uncertainty. Decision makers define this theory as the inadequacy of to designate a whole decision tree. Information states process of organization with uptrend and higher cost (Jiang, 2006).

This theory embarks on view the firm as an organization including people owning different views and objectives. The emphasizing hypothesis of transaction theory is large firms, effective substitution for the market and specifying the division of resources. In other saying, firm's structure and organization can designate price and promotion.

Analysis' unit is the transaction in this theory. For this reason, the assembly of people proposes that managers of transaction cost theory are opportunists and regulate transaction of firms to their investment (Williamson, 1996).

Every firm has its own governance structure. Governance problem are sensed to progress through contractual hazards' number, containing self-seeking, information asymmetries, specify of asset, some bargaining, and bounded rationality problem (Learmount, 2002). Corporate governance are interested in describing internal precaution and mechanisms to manage the costs along with contractual hazard despite external market mechanism are in capable of trusting to reduce these problems wherefore it has "limited constitutional powers to conducts audits and has limited access to the firm's incentive and resource allocation machinery" (Learmount, 2002; Williamson, 1975).

1.2. DEFINITION AND DEVELOPMENT OF CORPORATE GOVERNANCE

According to Fama and Jensen (1983:302); corporate governance is defined as *"the nexus of contracts, written and unwritten, among owners of factors of production and customers. These contracts or internal "rules of the game" specify the rights of each agent in the organization, performance criteria on which agents are evaluated, and the payoff functions they face."*

In a market economy, on the one part corporate governance contains private and public institutions (laws, regulations and approved business practices) which govern equally the connection between corporate managers and entrepreneurs (corporate insiders), on the other side resources are invested in corporations (OECD, 2001: 13).

Corporate governance is defined as *"a process through which shareholders induce management to act in their interest, providing a degree of confidence that is necessary for capital markets to function effectively"* by Rezaee (2009). According to Cadbury (2000:11); corporate governance is defined as *"corporate governance is concerned with holding the balance between economic and social goals and between individual and communal goals. The corporate governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those*

resources. The aim is to align as nearly as possible the interests of individuals, corporations and society."

Corporate governance is defined as *"an implicit term of the contract between shareholders and the firm is that the duty of managers and directors is to maximize firm value for shareholders. The legal manifestations of these contracts are the fiduciary duties of care and loyalty that officers and directors owe to shareholders"* and known as American corporate governance (Macey and O'Hara, 2003:92).

According to view of La Porta et al. (2000), corporate governance is a set of mechanisms by way of outside directors which preserve themselves versus dispossession by insiders, that is to say the managers and inspection of shareholders. Shleifer and Vishny (1997) indicate corporate governance which looks after the ways in suppliers to corporations which warrant themselves of getting a yield on their investment. According to Denis and McConnel (2003), it is explained that set of mechanisms both institutional and market-based and it causes the personnel interest inspectors of a company to maximize the worth of the company for themselves. Corporate governance contains the assembly of laws, regulations, rules and voluntary private sector practices that usually allow of the corporation to be attractive to capital, implement efficiently, create profit and meet both legal obligations and the anticipation of society (Millstein, 2004: 3).

Corporate governance is connected with the management and the organizational structure of a corporation. Nowadays, corporate governance as a term is usually used for the governance of joint stock companies. The popularly approved characteristics of a joint stock company can be summed up five characteristics (Hansmann and Kraakman, 2000):

- Full legal personality which contains well-defined authorization to link the firm to agreements with assets that are the ownership of the firm as divert from the owners of firm
- Limited liability for owners and managers,
- Shared ownership by investors of capital,
- Authorized management under a board structure,
- Transferable shares

According to Hansmann and Kraakman (2000:2), the incorporated company with marketable shares that is substantiated in the properties was constituted in England in 1844 and limited liability was supplemented in 1985.

Model for shareholder was improved in England and USA. But, it didn't identify details how other participants' interest would maintain. Following 1930s, interest of public reproduced in the direction of corporate governance. In earlier, fundamental aim of corporate governance avoided the insider trading, preservation of the rights of shareholders, disclosure and statement of financial information of public companies (Güdük, 2012: 7).

Corporate governance focuses on the structures and processes for the direction and control of companies; interrelation between the management, Board of Directors, inspecting shareholders, minority shareholders and other stakeholders. Good corporate governance make contribution to sustainable economic development by improving the companies' performance and remaining their access to outside capital (Barnali, 2014).

Corporate governance showed up firstly in USA and England. Huge companies such as Maxwell, Polly Peck, BCCI (The Bank of Credit and Commerce International) which collapsed in 1980s demonstrated the uselessness in available system (Gürbüz and Ergincan, 2004: 17). Chairman roles, board members, non-members managers and other committees are separated from each other by the Cadbury Act which specified the fundamental corporate governance standards. At the present time, the Cadbury Act has become a standard practice and public companies which are traded in stock exchange have been obliged to express their corporate governance policies (Güdük, 2012: 7-8).

OECD (Organization of Economic Cooperation and Development) Council developed originally to corporate governance principles at meeting on 27-28 April 1998 and agreed on 26-27 May 1999 along with national governments, private sector and international organizations. The principles were resulted from five fundamental sections which were shareholders' rights, primary ownership functions, shareholders' fair treatment, stakeholders' role and disclosure and transparency. These principles were

usually formed under corporate governance models in England and America (Gürbüz and Ergincan, 2004). In table 1 gives some definitions about corporate governance.

Table 1: Some Definitions of Corporate Governance

AUTHOR	DEFINITION
Metricks and Ishii (2002)	*"both the promise to repay a fair return on capital invested and the commitment to operate a firm efficiently given investment".*
Cadbury Committee (1992)	*"the system by which companies are directed and controlled".*
Zingales (1998)	*"the complex set of constraints that shape the ex-post bargaining over the quasi rent registered by the firm".*
Mayer (1997)	*"ways of bringing the interests of (investors and managers) into line and ensuring that firms are run for the benefit of investors".*
Deakin and Hughes (1997)	*"the relationship between the internal governance mechanisms of corporations and society's conception of the scope of corporate accountability".*
Keasey et al (1997)	*"the structures, processes, cultures and systems that engender the successful operation of organizations".*
Jenkinson and Mayer (1992)	*"the way in which companies are owned, the form in which they are controlled and the process by which changes in ownership and control take place".*

In early 2000s, the corporate scandals like Enron, were strengthened the debate on corporate governance. The main reason for revision of corporate governance principles has been reduced confidence in large corporations and supervisory firms, maintains and provides investor confidence by legislative authorities. In USA, The Sarbanes-Oxley Act of 2002 which was the first response from institutional scandals, was developed for all US public company boards, management and public accounting firms and enhance

responsibilities of CEO (Chief of Executive Officer) and CFO (Chief of Financial Officer) for transparency and disclosure in financial reports (Mesutoglu, 2008: 16).

As a result of corporate scandals, OECD overhauled the corporate governance principles. Their main confluent has been fairness, transparency, accountability and responsibility. OECD and non-OECD governments, business and trade unions widely accepted these confluents in April 2004 (Acarli, 2008: 4).

1.3. OBJECTIVES, SIGNIFICANCE AND BENEFITS OF CORPORATE GOVERNANCE

Quality of corporate governance has a direct impact on efficiency of employed assets, ability of low-cost capital and society expectations and overall performance (Gregory and Simms, 1999: 4)

Quality of corporate governance depends on a host of factors. Some of them are (Needles et al., 2012);

- Efficiency and effectiveness with which board functions
- Process adequacy
- Management integrity
- Commitment level of each of the board members
- Quality of corporate reporting and
- Participation of stakeholders in the management process.

Corporate governance is both control mechanism and a system enabling transparency and accountability (Shelton, 1998:2-3; Doğan 2007:45). Successful board attitudes should be implemented to improve the manager's performance, to enable auditing and to promote by using resources of company. In this way, cost of capital diminished, the privateness remains and investment of investors are protected highly (Demir, 2010: 7).

According to Rocca, 2007; the main purpose of the corporate governance is to prevent opportunistic behavior via steering agency problems which consists of a manager (agent) and principals such as shareholders, employees, suppliers etc., or just a principal (owner or the entrepreneur) and different managers. Also it expedites required abilities for strategic decisions and helps to resolve information asymmetry between agent and the principal.

The advantages of corporate governance can be listed as follows (CMB, 2005:2; Gönençer, 2008:13; Classens, 2003:21; Gregory and Simms, 1999:5):

- To provide preferable company performance
- To increase capabilities and liquidity
- To remain shareholders protection degree
- To reduce capital cost
- To have the ability make a success of crises with less damage
- To be not debarred from well-conducted companies than capital markets
- To have more dignity of company and country
- To minimize risks as fraud and corruption
- To avoid outflow of domestic capitals
- To remain investment of foreign capital
- To enhance competitive advantage between the economy and capital markets
- To procure productive appropriation of resources
- To ensure high level of welfare and sustainable development
- To procure preferable relationship between other stakeholders such as banks, labor, government
- To diminish trade-related corruption.

1.4. CORPORATE GOVERNANCE PRINCIPLES

OECD published corporate governance principles in 1999. Investors, financial institution companies and shareholders approved as reference sources (Dağlı et al, 2010: 21). According to Needles et al. (2012), corporate governance consists of two main principles. There are;

- Administration should have managerial freedom for taking company forward without unnecessary restrictions.
- Managerial freedom must be implemented within the scope of influent accountability.

The primary principles of corporate governance are transparency, accountability, fairness and responsibility. These principles are seen as important part of corporate governance principles in the world (TÜSİAD, 2002:9; CMB, 2005:2).

1.4.1. Shareholders and Equality

For company's shareholders, joint company is a substantial place. Owner of goods and property assets are taken in consideration as fundamental company's shareholders. Consequentially, there grow into important protection of shareholder's rights on property of company (CMB, 2005). Shareholders and equality are important factors to prohibit conflicts between shareholders and managers (Erişmiş, 2013:9).

According to CMB, Shareholders and equality principles arise from facilitation of rights of shareholders, knowledge and research rights, attendance in general assembly rights, voting, minority, dividend rights, share transfer and equivalent trading principle for shareholders (Erişmiş, 2013:9).Gregory and Simms (1999:7), Demirbaş and Uyar (2006:24) identify equality as ensuring the conservation of rights of shareholders and practicality of agreements with resource providers. Equality is dealing evenly to all shareholders and stakeholders and prohibiting probable conflict of interest between all parties (CMB, 2005:3).

"In OECD Principles, fairness is explained in two principles separately. These can be seen at first principle: The corporate governance framework should protect and facilitate the exercise of shareholders' rights and at second principle also relates to fairness: The corporate governance framework should ensure the equitable treatment of all shareholders, including minority and foreign shareholders. All shareholders should have the opportunity for obtaining effective redress for violation of their rights" (Gregory, Simms, 1999:8).

1.4.2. Disclosure and Transparency

Transparency is defined as *"requiring timely disclosure of adequate, clear, correct and comparable information concerning corporate financial performance, corporate governance and corporate ownership"* (Gregory, Simms, 1999:7; Demirbaş and Uyar, 2006:22). The purpose of transparency is to enhance and expedite the information flow to stakeholders (Demirbaş and Uyar, 2006:23; Doğan, 2007:52; CMB, 2005:3).

This principle refers to fourth principle of OECD in 1999: *"The corporate governance framework should ensure that timely and accurate disclosure is made on all material matters regarding the corporation, including the financial situation, performance, ownership, and governance of the company"* (Gregory and Simms, 1999:8).

International financial markets demonstrate to transparency and full disclosure as significance variables of long-term viability and besides influent division of capital. Transparency and disclosure is identified as rising flow of economic, social, and political information with characteristics of access, extensiveness, suitability, quality and reliability (Vishwanath and Kaufmann, 2001). For reduction the information asymmetry and agency problem, it must enhance transparency and whipe disclosure into shape. To minimize the information asymmetry and enhance investor awareness and trust, it should diminish the uncertainness of the returns of capital, low cost of capital and superior value of firm (Ashbaugh et al., 2004; Brown and Caylor, 2004; Berglof and Pajuste, 2005).

More than 75 years, agency problems and information asymmetry have been investigated in financial literature (Patel et al., 2002). Transparency and full disclosure

are important indicators of corporate governance quality in corporate governance framework (OECD, 1999).

OECD lay weight on a powerful disclosure and real transparency and also is an essential characteristics of market-based monitoring and central of shareholders' ability. *"Shareholders and potential investors require access to regular, reliable and comparable information in sufficient detail for them to assess the stewardship of management and make informed decisions about the valuation, ownership and voting of shares. Insufficient or unclear information could hamper the ability of markets to function, increase the cost of capital, and result in a poor allocation of resources"* (OECD, 2006).

All financial and managerial material must be contained by disclosure which is rigorously and punctually about company. OECD Principles (2004) define material information as;

- Results on financial and operating,
- Purposes of company,
- Major share ownership and voting rights,
- Remuneration policy and information,
- Transaction between related party,
- Predictable risk factors,
- Employees and stakeholders' issues,
- Structures and policies of government.

Corporate governance is inbuilt by transparency and disclosure. Information asymmetry and agency problem will be decreased by higher transparency and better disclosure in corporate governance (Patel et al., 2002).

According to Balic (2007), transparency and disclosure were formed an estimate of 106 probable attributes. These attributes were chosen after investigating of annual report, accounts, and regulatory, leading companies' web-sites and then were identified to common disclosure items. These attributes are divided into three subcategories. There are ownership structure and investor relationships, financial transparency and information disclosure, and board and management structure and process.

In Balic's study (2007), transparency and disclosure were evaluated by assessing the inclusion of 106 possible attributes in companies' disclosure. The 106 attributes were selected after examination of the annual report and accounts, regulatory filings, and Web sites of leading companies around the world, and identification of the most common disclosure items. The attributes are grouped into three subcategories:

- Ownership structure and investor relationships,
- Financial transparency and information disclosure, and
- Board and management structure and process.

1.4.3. Accountability

Accountability is defined as *"clarifying governance roles and responsibilities, and supporting voluntary efforts to ensure the alignment of managerial and shareholder interests, as monitored by boards of directors"* (Gregory and Simms, 1999:7). CMB defines accountability as *"obligation of the board of directors to give account to the company and to the shareholders"* (CMB, 2005:3).

Corporate governance principle refers to fifth principle of OECD in 1999: *"The corporate governance framework should ensure the strategic guidance of the company, the effective monitoring of management by the board, and the board's accountability to the company and the shareholders"* (Gregory, Simms, 1999:8)

Accountability is the responsibility of the top government who sit on the top of the corporate command and who are directly contained in stakeholder's engagement for performance (Kearns, 1996). In addition to this, accountability contains stunningly complicated answers to simple-looking questions such as: who is responsible?, to whom?, for what? And how? (Düztaş, 2008).

Corporate governance quality contingents upon the directors quality unambiguously. Non-executives and independent directors have ability, loyalty and neutrality to ensure strategic instruction and control shareholders' performance (Gregory and Simms, 1999:8).

1.4.4. Responsibility

Gregory and Simms (1999:7) identifies responsibility as covering corporate observance with the other laws and regulations which represent the individual value of society. Responsibility principle provides the convenience of company to regulations which represents social rules and values. Correct targets are determined as the main managements' responsibilities (Demirbaş and Uyar, 2006:24).

This principle refers to third principle of OECD Principle: *"The corporate governance framework should recognize the rights of stakeholders established by law or through mutual agreements and encourage active co-operation between corporations and stakeholders in creating wealth, jobs, and the sustainability of financially sound enterprises"* (Gregory and Simms, 1999:10).

1.5. CORPORATE GOVERNANCE MECHANISMS

Principle aim of corporate governance mechanisms is to remove the disputes on the board and reduce the agency costs. These are a set of control mechanisms which ensure effective and efficient operation of the company. There are divided into two categories as internal and external corporate governance mechanisms (Karayel, 2006).

1.5.1. Internal Corporate Governance Mechanisms

Internal corporate governance mechanisms include board structure, executive compensation, ownership structure and institutional investors.

1.5.1.1. Board Structure

Ability, knowledge and achievement of board members are associated with corporate governance efficiency. There are insider and outsider members in the board. Insider members of board structure are general manager and senior executives. Outside

members don't get involved daily operations of company however they interrelate to these operations. These members are called as affiliated outsiders. Independent outsiders both don't get involved daily operations and also don't interrelate to the company's operations (Ülgen and Mirze, 2004: 430).

The board of directors is an internal governance mechanism that closely monitor the shareholders and managers' interests and keep under control or eliminate ineffective management teams. Notwithstanding, board diversity and independence has been a developing field of late years, most empirical studies on this subject has been limited to data of US. As a result, significance and worth of several governance structures comprising board diversity and independence, is necessary to be investigated in each country and the impressive factors individually (Kang et al, 2007).

Diversity means *"variety" or "a range of many people or things that are very different from each other".* Board diversity is the discrepancy in board members' characteristics such as age, gender, ethnicity, education, experience, skills, knowledge etc. homogeneous boards are identified to result from people who have same characteristics such as age, gender, race, education, working experience and values. Heterogeneous boards are identified as different characteristics such as men and women, young and old, foreigners and resident and different educational background and work experiences (Adhikary and Hoang, 2014).

According to Goodstein et al, 1994, a board performs three major tasks. There are organization of environment and securing critical resources, monitoring task and having internal governance and finally removal of ineffective management teams. According to Fama and Jensen (1983), an effective board is affiliated with various collections of skills and competencies. Effective governance also is affiliated with effective selection process for new director (OECD, 2014).

The board is the ultimate internal monitor whose most significant role is to look closer the furthest decision-makers within the firm (Sundaramurthy and Levis, 2003). According the view of Jensen and Meckling (1976), a larger board size could enhance the effectiveness of a company's board of directors, and that management could promote decreasing agency cost resulting from poor management, resulting in better financial

results. Agency theory and resource dependency theory support higher board size. Board size refers to the number of inside and outside directors on board. There are two different discussions are about board size. There isn't any consensus on smaller or larger boards are better for financial performance. According to Lipton and Lorsch(1992), Jensen (1993), Yermack (1996) and Akpan and Amran (2014), small board size makes contribution further company's success. It is a significant factor to designate the effective board (Panasian et al., 2003; Levrau and Van den Berghe, 2007).

The independence of the board refers to a corporate board of directors, together with a large number of outside directors. It is argued that the company is more alert in outside or independence directors' behavior and decision-making mechanisms (Fama and Jensen, 1993). According to agency theory and resource dependency theory, independence members carry out their responsibilities more effectively than inside members. Because no inside members want to face the CEO at the board meeting (Johnson et al.1993).

1.5.1.2. Ownership Structure and Institutional Investors

The ownership structure and financial resources have an effect on the layout of systems of corporate governance. Furthermore, significant method of value maximization is well-designed in ownership structure of shares of firm (Şençitak, 2007). According to Lins (2003), ownership structures and large non-management block-holders pertain to value of firm.

Ownership structure is defined as equity's distribution with appertaining to votes and capital furthermore the personality of the equity owners. Ownership structure affects financial performance by way of decision making process and systems of performance controlling (Zheka, 2003; 7-8). Ownership structure is a significant mechanism for decreasing agency costs. In theory, shareholders should be active in controlling managers (Shleifer and Vishny, 1986 and 1997).

Institutional ownership increases good corporate governance and in conjunction with it increases firm performance (Elysiani and Jia, 2010). According to Masulis et al.

(2009), institutional ownership helps to enhance firm value. The rise of institutional ownership has a significant role in corporate governance. High institutional ownership has three advantages. There are high proportion of economic benefits and cost effectiveness, low costs of coordinating management and finally avoiding difficult and costly sales (Federal Reserve financial economic roundtable, 1998; Chen et al., 2008). Institutional investors ensure the majority of external equity capital for public companies (Bennett et al., 2003). For this reason, a family firm that wants to grow may need to seek external capital from institutional investors. However, some problems specific to family companies may make investors worried about investing in family firms. Fernando et al. (2014) found that family firms have a lower level of institutional ownership. Agency theory supports the high shares of institutional ownership. According to agency theory, as shares of institutional ownership increase, firm financial performance increases.

1.5.1.3. Executive Compensation

Third internal corporate governance mechanism is executive compensation. Executive compensation should be connected to stock valuation and accounting based performance (Bai et al, 2004).

Executive compensation is a complicated and contradictive issues. Over the course of many years, academics, policymakers, and the media have attracted notice this issues (Jensen and Murphy, 1990).

There are four fundamental components to executive pay (Murphy, 1999). There are base salary system, annual bonus plan, stock options and additional compensation such as restricted stock, long-term incentive plans, and retirement plans.

In conclusion, Board of Directors is in need of planning indemnity agreement to aline owners' interests with management. Corporate governance system working properly should comprise executive compensation regulations, and forms an estimate of economic performance (Conyon, 2006).

1.5.2. External Corporate Governance Mechanisms

Internal mechanisms of corporate governance are consolidated by external laws, rules, and institutions. External governance mechanisms include the market for control, legal and regulatory structure, and product market competition. Firms are mostly got under control by the market for corporate control in economies in which market-based corporate governance is in existence. Legal and regulatory structure decreases agency costs and unfasten governance problems by way of greater transparency, observance mechanisms, and controlling by regulatory bodies. Competitive product market gets under control the corporations by way of effect of operations (Şençitak, 2007).

1.5.2.1. Market for Corporate Control

A market is significant for efficient division of resources, and makes certain of replacement of unaffected managers who can monitor large quantities of resources (Bai et al, 2004). The market acts as monitor and authorizes struggles as an improver mechanism (Nenova, 2005; 202).

Takeovers are the principal mechanism to keep under control managers by way of market for corporate control. The takeover market is seen in the U.K. and U.S. as a main mechanism for keeping under control decrease in performance management inversely relationship based systems of Germany and Japan (Short et al., 1999; 345). The takeover market is a significant governance mechanism (Denis and McConnell, 2003).

Takeovers as the market for corporate control ensure a means for changing place the whole internal control system when the internal management implements large costs on shareholders from dishonorable and untalented managers. In this way, takeovers restrict the managerial inefficiencies in the maximization of wealth (Şençitak, 2007).

1.5.2.2. Legal and Regulatory System

Legal system is a significant part of corporate governance mechanism. Investor rights' are conserved by laws and these laws are imposed significant predictive factors of corporate governance system within a country (La Porta et al, 1998).

The mechanisms of effective corporate governance involve the legal and regulatory system, fundamentally the securities and company laws, and other supplementary legislation, containing commercial law, contract law, laws on collective investment institutions, bankruptcy and insolvency legislation, competition law, banking and discussion determination resolution (Yener, 2001; 4).

In conclusion, powerful investor conservation is correlated with effective corporate governance (La Porta et al., 2000; 24). Particularly, the investor conservation is based on the legal structure and countries' laws. As a consequence, corporate governance reforms belong to the conservation of outsiders has obtained significance with the completion of financial markets (Şençitak, 2007).

1.5.2.3. Product Market Competition

Product market competition is a part of the external corporate governance mechanism. If managers waste the resources of the firm, the firm cannot struggle with its competitors as planned. Competition decreases efficiency casualties managerial slack (Bai et al, 2004).

The firm should be accomplished in the product market competition, if only it generates products at a structure of cost that allows customers to sell a refurbished product that they think is not payable. That is to say, low cost of capital permits corporations to sell products at competitive prices (Şençitak, 2007).

CHAPTER TWO
LITERATURE REVIEW ON BOARD STRUCTURE AND FIRM FINANCIAL PERFORMANCE

As sound corporate governance practices are expected to increase the financial performance of the companies (Todorovic, 2013), this thesis focuses on the board structure and shipping firm financial performance relationship. Thus it is aimed to present the board structure variables that are significant in financial performance of the shipping companies. For this purpose, first financial performance indicators will ve reviewed, and then the literature review on the board structure variables that are found to be related with the company financial performance will be presented.

2.1. FINANCIAL PERFORMANCE INDICATORS

According to Neely et al. (1995), measurement of performance is defined as procedure of evaluation the efficient and productive. Lebas (1995) identifies performance measurement as cycle of the complicated authenticity of performance in regulated symbols that should be interrelating and declaration under the same situations.

According to Koufopoulos et al. (2008), performance measurement is a more serious assignment as regards measurement and accounting in the actual management of business. Performance management is defined as a procedure within the organization which is managed performance to couple its strategies and purpose of corporate and functional by Bititci et al. (1997).

Moreover, shareholders can define value of firm as advantages arising from the shares of firms (Rouf, 2011). Firm performance can be examined by using financial reports of the companies (Herlyand and Sisnuhadi, 2011).

In order to measure the performance of the firm, it is essential to designate the components of good performance that quantifiable and related to organization. Previous studies show that there isn’t any consensus about which measurement is reliable for performance on corporate governance (Jong et al. 2002). Most of studies have used

accounting based measures which are mostly return on assets (ROA) and return on equity (ROE) (Heentigala and Armstrong, 2011).

There are a lot of ways for measurement financial performance. All used performance measurement indicators are Return on Assets (ROA), Return on Equity (ROE), Tobin-Q, Profit Margin (PM), Expense to Assets (ETA), Earnings Per Share (EPS), Divided Yield (DY), Price-Earnings Ratio (PE), Return on revenue (ROR), Return on Sales (ROS), Cash to Assets (CTA), Sales to Assets (STS), Expenses to Sale (ETS), Abnormal returns; annual stock return, (RET), Operating Cash Flow (OCF), Return on Capital Employed (ROCE), Labor productivity (LP), Critical business Return on Asset (CROA), Cost of Capital (COC), Market Value Added (MVA), Operation Profit (OP), Return on Investment (ROI), Market-to-book value (MTBV), Log of market capitalization, LOSS, Growth in Sales (GRO), Stock Repurchases, Sales Per Employee(SPE), Output per staff (OPS), Cost Per Service Provided (CPSP) and Cost per Client Served (CCS), Superior to cumulative abnormal returns (CARs), Profit Per Employee (PPE) and Return on Fixed Assets (ROFA) etc. Most of these proposed measures have been utilized by studies regarding governance (Al-Matari et al., 2014). Many proxy variables have been used to evaluate firm performance; however, ROA, and ROE are the most frequently used proxy variables (Bonn et al., 2004; Huang, 2010; Kiel and Nicholson 2003; Kota and Tomar 2010; Lam and Lee 2008; Luan and Tang 2007; Yammeesri and Herath 2010).The most frequently used variables are Return on Assets (ROA), Return on Equity (ROE) (see table 2).

Table 2: Financial Performance Indicators

FINANCIAL PERFORMANCE INDICATORS	FORMULA
ROA (Return on Assets)	before-tax profits plus financial expense as a percentage of total assets
ROE (Return on Equity)	before-tax profits plus financial expense as a percentage of equity capital

In summary, the literature review shows that ROA and ROE are the most frequently used variables for measuring firm financial performance.

ROA which is an accounting based measurement, measures the firm performance related to operation and finance (Klapper and Love, 2002). ROA is calculated as net income divided by total assets for the same accounting period. Amount of earnings that have been created from an assets of invested capital (Epps and Cereola, 2008) and embodies profitability and efficiency of firm by all stakeholders including shareholders. ROA is considered as a proper financial performance measure for the organizations (Kim, 2005) and real performance of firm (Ponnu, 2008). As ROA is high, shareholders take advantages of assets usage (Haniffa and Huduib, 2006). Higher ROA also represents the effective usage of company's assets in attendance the economic interests of its shareholders (Ibrahim and AbdulSamad, 2011). Many previous studies used ROA in measuring firm performance (Kiel and Nicholson, 2003; Bathula, 2008; Chung et al., 2009; Jackling and Johl, 2009; Lan and Zhang, 2009; Rashid et al., 2010; Azam et al., 2011; Chiang, 2011; Lin, 2011; Fauzi and Locke, 2012; Fooladi, 2012; Ullah, 2012; Taghizadeh and Saremi, 2012; Tornyeva and Wereko, 2012; Yıldız and Doğan, 2012; Amba, 2013; Arosa et al., 2013; Franken and Cook, 2013; Mitchell, 2013; Vo and Phan, 2013; Adhikary and Hoang, 2014; Al-Shammari, 2013, 2014; Ammari et al., 2014; Chaarani, 2014; Marashdeh, 2014; Okan et al., 2014; Latif et al., 2014; Basyith et al., 2015; Bebeji et al., 2015; Cimerova et al., 2015; Dabor et al., 2015; Darweesh, 2015; Haider et al., 2015; Johl et al., 2015; Nath et al., 2015 and Bansal and Sharma, 2016).

ROE is calculated that net income divided by total shareholders' equity for the same accounting period. ROE has been considered as an authenticated way for measuring financial performance for all stakeholders (Johnson and Greening, 1999) and it is suitable both in short-term and long-term for most investors (Brealey and Myers, 2000). Furthermore, ROE demonstrates the profitability of investor by generating firm for using money invested from shareholders (Epps and Cereola, 2008). In the literature review, many authors used ROE. Some of the authors are Luan and Tang (2007), Azam et al. (2011), Chiang (2011), Lin (2011), Uadiale (2010), Fooladi (2012), Khan (2012), Taghizadeh and Saremi (2013), Tornyeva and Wereko (2012), Yıldız and Doğan (2012), Franken and Cook (2013), Adhikary and Hoang (2014), Ammari et al. (2014), Chaarani

(2014), Latief et al. (2014), Marasdhdeh (2014), Dabor et al. (2015), Darweesh (2015) and Bansal and Sharma (2016).

2.2. IMPACT OF BOARD STRUCTURE ON FINANCIAL PERFORMANCE

Bathula (2008) uses ROA as the dependent variable, and six different variables were used for measurement impact of board structure on firm performance that were director ownership, CEO duality, gender, board education, board meeting frequency and board finds negative association between director ownership, board education, board meeting frequency and ROA. He used New Zealand Exchange Data Deep Archive as sample of this paper during 2004 and 2007. According to his findings, there isn't any positive relation between higher education and performance of firm. Bathula (2008) emphasizes the need to address the need to identify the importance of the skill set for the firm appropriate to the boards concerned.

Rashid et al (2010) measured firm performance by using Tobin's Q and ROA on Bangladeshi firms. Their independent variables were outside director, board size, CEO duality and ownership structure. There was a negative relationship between board size and ROA. This study's sample is 274 Bangladeshi firm-years which include several sectors such as cement, ceramic, textile, fuel and power etc.

Lin (2011) researched the impact of board structure on firm financial performance in Taiwan firms between 2007 and 2009. CEO Duality, board size and family controlled directors significantly and negatively affected corporate performance when measured by ROA and ROE. On the other hand, supervisory, insider and outsider directors had positive influence on ROA and ROE.

Tornyeva and Wereko (2012) investigated the relationship between board structure and firm financial performance on insurance companies in Ghana. Board size, board tenure, CEO tenure, audit committee size, foreign and institutional ownership had a positive influence on ROA. Board tenure, audit committee size and independence, foreign ownership significantly and positively affected financial performance when measured ROE.

Board structures measured through board size, gender, CEO duality, board education, working experience, outside directors, compensation and block holders in Vo and Phan (2013). Board size had a negative influence on ROA. Gender, CEO duality, board tenure and compensation significantly and positively affected ROA. Their sample was 77 listed firms during 2006-2011 in Vietnam.

Adhikary and Hoang (2014) used Tobin's Q, ROA and ROE for measurement of firm performance. They examined the relationship between board structure and firm financial performance. Gender, board size and outside director were used as independent variables. Board size and board independence affected positively to three dependent variables.

Basyith et al. (2015) used 45 firms listed in Indonesia Stock Exchange between 2010 and 2014 as sampling of their study. Independent variables were managerial ownership, block holder ownership, independent commissioner, audit committee size and board size. Board size and managerial ownership had negative influence on ROA. On the other hand, there was a positive relationship between block holder ownership and ROA.

Haider et al. (2015) implemented their study on the banks of Pakistan in phase of 2008-2012. They used three independent variables which were board size, number of meetings and audit committee size. ROA and ROE were used as dependent variables. Board size had a positive impact on ROA and ROE. There was a negative relationship between number of meetings and ROA and ROE. Audit committee size significantly and negatively affected ROA.

Board structure measured through outside director, board size, CEO duality, promoter shareholding, audit committee independence and meetings frequency (Bansal and Sharma, 2016). ROA, ROE and Tobin's Q used as dependent variables. Their sample was 235 non-financial public limited companies listed in NSE 500 during 2004-2013. Outside director and CEO duality had a positive impact on ROA. There was a negative relationship between outside director and ROE. CEO duality, promoter shareholding and audit committee independence affected positively to ROE.

Amina et al. (2017) investigated that impact of corporate governance on firm performance of listed companies in Saudi stock exchange. Their independent variables are

ROA and ROE for financial performance, Tobin's Q for market performance. They didn't find any significant relationship between corporate governance and financial performance indicators (ROA and ROE).

Naimah et al. (2017) used sample of CGPI (Corporate Governance Perception Index) award at 2005-2014. Their dependent variables are board size, board independence, outside directors, audit committee size, audit quality and CGPI. They found positive relationship between audit committee meeting, audit quality, CPGI and profitability. Board independence, leverage and firm size negatively impact profitability.

A literature review from relevant academic studies has indicated the following characteristics applied to corporate governance such as: board size, gender diversity, CEO duality, independence directors, audit committee size, board age, ownership concentration and board tenure (see table 3). The literature review also reveals that contradictory findings are presented that may be due to time, country, or sector specific factors.

2.2.1. Board Size and Firm Financial Performance

According to Mak and Yuanto (2003), if board comprises of five members, it can provide high performance for company. In Japanese listed companies, Yokishawa and Phan (2004)'s study showed that there is a negative relationship between board size and firm financial performance. For the same sampling, Shakir (2008) found similar results with Yokishawa and Phan. According to Jensen (1993), firm should be more effective in its controlling if it has smaller board size in same sampling. In a large board size companies, directors may have a hardship contraction with each other, which induces major damage to performance of firm (Wu et al., 2009).

According to claim of Lipton and Lorsch (1992), number of board members should be eight or nine people while Leblanc and Gillies (2003) claimed that this number should be eight to eleven people. A highest number of board members can be thirteen members for both small and medium sized companies. Epstein et al. (2002) and Goshi et al. (2002) preferred approximately sixteen members for large companies. The opposite way around, Florackis and Ozkan (2004) defended that boards can be ineffective if members are seven

or eight people. Conger and Lowler (2009) argues that, there isn't any favorable number of board members because the right dimension of a board is determined by the efficiency of working as a team of boards.

On the contrary, using Meta-analysis technique, Dalton and Daily (2000) demonstrated that a varied consequence in larger boards were related with preferable corporate financial performance even regardless of the nature of the firm and its measurement of financial performance (Dalton and Daily, 2000). Similar findings by Andres and Vallelado (2008) show that larger boards are more efficient in terms of controlling and generate further firm's value. This finding was confirmed by Shukeri et al. (2012), it was also promoted by previous research that the size of the board has a positive impact on ROA.

In summary, research on the relationship between the board size and firm performance shows mixed results.

The previous studies concerning the board size, Shukeri et al., 2012; Adam and Mehran, 2003; Mak and Kusnadi, 2005; Kiel and Nicholson, 2003; Yasser et al., 2017's studies promoted that positive relationship between board size and firm performance. Larger boards cause better firm performance in consequence of extensive variety of skills produce for preferable decision making and control the CEO performance. Adams and Mehran (2005) assert a positive relationship between number of board members and firm performance in sampling of U.S. banking sector. Further, study of Rechner and Dalton (1991) found that larger boards cause stronger performance. These results have been promoted by Pfeffer (1972) and Zahra and Pearce (1989) on the relationship between board size and firm performance. According to Lahkal (2005), there was a weakly positive relationship between board size and firm performance. Moreover, board size is positively connected with earning per share (EPS) of firm in Chinese listed companies (Chen et al., 2006). Shukeri et al. (2012) specified that board size positively impact firm's return on assets (ROA).

Some researchers argued that there has negative relationship between board size and firm performance (Mishra et al., 2001; Singh and Davidson, 2003). Argument of Haniffa and Hudaib (2006), large board size affect less controlling performance, high cost

of companies with regards to enhancing incentives. In sampling of Canadian public companies, Bozeman and Daniel (2005) found similar result with previous studies that find a positive relationship. This finding have a negative relationship between board size and firm financial performance such as return on sales, sales efficiency and ROA. Board size which is not a demographic behaviors, is unlikely impacts on board functioning and Holthauson and Larcker (1993) support this statement. This findings is also negatively effects of firm performance. Eisenberg et al. (1998) also found negative relationship between board size and profitability in sampling of small and medium Finnish firms. The result is linked with study on corporate governance of family firms in Norway (Mishra et al., 2001).Lipton and Lorsch (1992) and Jensen (1993) defend that large boards are less connected. Members of board grow into strategic decision-making (Judge and Zeithaml, 1992). This leads to a negative result that weakens the ability of the board to initiate strategic change (Goodstein et al., 1994). In the same way, Gladstein (1984) and Forbes and Milliken (1999) defend that large members are more difficult to coordinate and may cause conflict and fighting, given the large number of potential interactions among group members (Ocasio, 1994). Consequently, some researchers such as Yermack, 1996; Eisenberg et al., 1998; Mak and Kusnadi, 2005 found that large boards affect lower market values.

2.2.2. Board Age and Firm Financial Performance

The clearest definition of board age is the definition of the average age of board members. Despite the fact that elderly managers have several experimentation that may assist enhance the operations of firm, they besides are in tendency to advocate the status quo. As a consequence, unwillingness of firm for hazardous judgement could have adverse inferences (Carlson and Karlsson, 1970; Vroom and Pahl, 1971). Furthermore, former directors can be deprived of endurance and energy cope with innovative notions and perform different strategies (Child, 1974). Link with this idea, board age is significant and negative impact on market value and less significant impact on profitability in Bonn et al. (2004)’s study. Their sample is Japanese manufacturers. Nevertheless, the impact on

firms has been found to be insignificant in both measures in Australia. The other study about this effect, in US firms, board age is found one of the most important predictive factors of value of corporate by Faleye (2007).

Studies that investigated the relationship between board age and performance of company are limited. According to Akpan and Amran (2014), if board members have different ages, this diversity in organization will be more beneficial. Hambrick and Mason (1984) claimed that younger manager is more profitable than older managers due to higher growth experience. Young managers tend to reject the status quo but are avid to approve new ideas (Cheng et al., 2010).

A positive relationship is found between various groups of board age and performance of company by Mahadeo et al. (2012). According to Dagsson (2011), there is a significant and positive relationship between age diversity and performance of company defined as ROA (Dagsson, 2011). Age diversity positively and significantly impact ROE in sample of Turkish firms Ararat et al. (2010). It is also found that age positively impact marketing performance by Kidduff et al. (2000). Child (1974) argued that older manager has lower levels of ability to executive innovative strategies. Ensuing researches about board age have verified that age is correlated with a low rate of %20 of strategic change (Wiersema and Bantel, 1992). Similarly, there was a negative effect on international acquisitions by use of interrelating concept of decision horizon and consequently international acquisitions diminish with age of board director (Matta and Beamish, 2008). Likewise, Bonn et al. (2004) found that board age is negatively impact on the profitability using sample of Japanese firms.

2.2.3. CEO Duality and Firm Financial Performance

CEO duality is defined as Chief Executive Officer and chairman as being the same person. CEO duality implements in situations which CEO and the chairman (two top managerial position) in a firm are carried out by the same person. The other approach of corporate governance is the separation of CEO and Chairman Responsibilities that increases the board diversity. This means that CEO and chairman would be two different

persons instead of one managers into two different responsibilities at the same time (Mallin, 2007).

CEO duality implements if the CEO of a company as chairman of board of directors (Rechner and Dalton, 1991).The CEO / chairman is a full-time job that possesses liability to set, implement and control operations of the firm and support performance of firm for all stages levels (Weir et al., 2002).

According to the agency theory, separation of CEO and chairman has positive impacts on firm financial performance by increasing the board diversity. Due to the fact that the joint responsibilities of the CEO and chairman are not able to effectively control and monitoring the performance of the CEO and to manipulate the decisions of board of directors against interests of the owners. According to Rechner and Dalton, (1991); Tuggle et al. (2010); Bliss, (2011); Dalton and Dalton, (2011) and Chen, (2011), companies that implement the CEO's duality may perform less than firms that separate the CEO and President Responsibilities.

According to the stewardship theory, contrary to the agency theory, CEO / Chairman Duality implementation can be a better performance application with positive impact on financial performance, because of the assembly and completion of command chain it refers conclusion of decision-taking process (Peng et al., 2007; Mallin, 2007).

More precisely, the stewardship theory suggests that the presence of CEO / Chairman Duality creates a powerful and good senior manager shaped within an opportunistic manager and a commanding union (Donaldson and Davis, 1991; Brickley et al., 1997). Companies that use the CEO's duality can make better, faster, and more effective decisions. Consequently, these firms can give better results than firms that have made their decision-making authority to senior executives (Donaldson and Davis, 1991).

While serving as the manager because the president also assumes the roles of the decision maker and the supervisor, the board can lose its independence and monitor its power, and as a result it can perform a weak function such as an armor against agency problems (Wu et al., 2009)

Research on the relationship between CEO duality and firm performance also present mixed results.

According to Donaldson and Davis (1994), CEO duality is significant and positive impact on firm performance using sampling of companies in US. They accomplished that CEO duality indicated a higher ROE and wealth of shareholders. In a similar way, Rechner and Dalton (1991) found positive relationship between CEO duality and financial performance using a sample of Fortune 500 companies. According to Goyal and Park (2002)'s study, companies with separation of CEO and chairman have less sensitive of CEO turnover to firm performance. CEO duality positively effect on firm performance in US firms (Boyd, 1995).

There was a negative and significant relationship between CEO duality and firm performance using sampling of Nigerian companies (Sanda et al., 2008).

White and Ingrassia (1992) argue that the executive board, in contrast to its shareholders, can create agency costs when it works for its own benefit, the CEO's duality could lead to poorer performance by the board. Yermack (1996) discusses that when CEOs and board chairpersons are separate, they increase the value of the firm. Fama and Jensen (1983) adversely affect the CEO, as the CEO dilemma of a company is difficult for the board to remove itself.

It is found no significant relationship between CEO duality and firm performance (Vafeas and Theodorou, 1998 and Baliga et al., 1996). Brickley et al. (1997)'s studies examine the impact of corporate governance on the performance of a Malaysian firm. Brickley et al. (1997) found that the CEO's duality had no effect on firm performance. Sharma (2016) also didn't find any relationship between CEO duality and firm performance using sample of 20 important industries of the Indian manufacturing sector. The duality of the board is an institutional leadership structure that combines the position of the chairman and the CEO (Charan, 1998).

2.2.4. Board Tenure and Firm Financial Performance

Board tenure is an ideal measure to capture the balance between knowledge and independence (Huang, 2013). While firm specific information may accumulate over time as tenure and firm value increase value (Celikyurt et al., 2012), the increase of closeness

between the board and management can weaken independence and decrease firm value (Fracassi and Tate, 2011; Hwang and Kim, 2009).

Research on the relationship between board tenure and firm performance are mixed results as presented below.

Some researchers found that board tenure positively impacts firm performance. Longer board tenure is influenced less talented members to the restraint of the managers (Beasley, 1996 and Schnake et al., 2005), further knowledge for operations of firm (Rutherford, 2007) and eminent preclusion disposition of Opportunistic managers' behavior (Hamouda et al., 2013 and Dou et al., 2015). According to Dou et al. (2015), board tenure significantly and positively impact on performance of firm.

Huang (2013) found that negative relationship between board tenure and firm performance using same sampling with Dou et al. (2015). Longer board tenure caused lower firm performance. Vafeas (2003) claimed that if board tenure is high, firm value and board independence could decrease. According to Berberich (2011), longer board tenure causes some corporate governance problems and Coles et al. (2015) claimed that if board tenure is high, board members have not ability of critical thinking. Livnat et al., 2016) defend that seasoned board members over time are getting friendlier with managers and lose their capability to neutrally examine managers' actions, thus decreasing the level of board independence and contributing to the value decrement of firm. According to Vafeas (2003), members who have been in the management board for a long time have significant knowledge about the company and the business environment, which may adversely affect financial performance

2.2.5. Board Independence and Firm Financial Performance

The independence of the board refers to a corporate board of directors, together with a large number of outside directors. It is argued that the company is more alert in outside or independence directors' behavior and decision-making mechanisms (Fama and Jensen, 1993).

Board independence is generally calculated as percentage of the total number of independent non-executive directors to the total number of directors (Prabowo and Simpson, 2011). Abdullah and Nasir (2004) measured board independence as rate of independent directors or non-executive directors.

Although non-executive directors have advantages for the board, some studies found contradictory results as non-executive directors negatively impact on firm performance. These studies argue that the non-executives may work only on a part-time basis and therefore possibilities of having other work commitments, may lack expertise to understand high technical work issues and may have insufficient knowledge of important decisions (Weir & Laing, 2000).

According to the agency theory, outside members of the board carry out their responsibilities more effectively than inside members. Because no inside members want to face the CEO at the board meeting (Johnson et al.1993).Moreover, external directors are in a better position to monitor the actions of managers as they openly and objectively make their strategic decisions (Baysinger and Hoskisson, 1990). Managers may be in tendency to maintain their aims at the shareholders' expense, connected with separation between ownership and control. According to Fama (1980), an independent manager was appointed to ensure that the competition among the learner students encouraged actions consistent with the maximization of shareholder value. Independent managers are also useful for monitoring the board's activities and for enhancing the transparency of the corporate governance boards that the company has developed to meet the reporting requirements (Chen and Jaggi, 2000).

Research on the relationship between independent directors and firm performance are mixed results.

It is found a positive relationship between non-executive boards and financial performance by Salleh et al. (2005). Financial reporting timeless can enhance evenly. Some researchers found that board independence can ensure benefits to companies (Ramdani and Witteloostuijn, 2009; Zubaidah et al., 2009; Rhoades et al., 2010). Dehaene et al. (2001) found positive relationship between independent directors and ROE using sample of Belgian companies. According to findings of Byrd et al. (2010), there was a

significant and positive relationship between independent directors and performance of firm.

Abdullah (2005) found that no significant relationship between independence directors and firm performance using KLSE (Kuala Lumpur Stock Exchange) data between 1994 and 1996. Haniffa and Hudaib (2006) and Rahman and Ali (2006) also didn't find any significant relationship non-executive directors and firm performance. The reason for this is that in many developing countries, including Malaysia, the choice of independent directors is based on legitimizing commercial activities and contracts for political reasons, not expertise and experience. Results of Bhagat and Black (2002)'s study showed that there was a significant and negative relationship between independence directors and firm performance. Research by Hermalin and Weisbach (2001) found no evidence that board independence affects firm performance. This result was linked with another study conducted by Klein et al. (2005). Chen et al., 2006; Conger and Lawler, 2009; Haniffa and Hudaib, 2006 found that a negative and significant relationship between board independence and firm performance

Ramdani and Witteloostuijn (2009) argue that the independence of the executive board is only effective on firms with average performance; companies that are below average performance are not affected. On the other hand, Chen et al. (2006) argued that the proportions of independent members in the boards had little effect on overall firm performance.

Sanda et al. (2008) examined board independence on 205 Nigerian public listed companies from 1996 to 2004 by using only financial based measurement included ROA and ROE. The findings showed both positive effects of independent directors to firm performance. The results provide evidence that outside director representation is positively related with return on assets and on risk-adjusted stock returns by investigation on 300 Germany public listed companies.

2.2.6. Audit Committee Size and Firm Financial Performance

The audit committee generally specifies who is responsible for auditing the financial reporting and communications with the company. The committee ensures invaluable communication between internal and external auditors and helps ensure that the board includes all audit related matters. The board of directors is obliged to establish an audit committee with at least three non-executive members or two members in many countries for especially public companies (Mallin, 2007). Kajol and Pazar (2008) stated that the increase in the number of members of the audit committee points to more specialists for reviewing internal controls and financial reporting. Various accounting standards and principles should ensure that general rules and regulations are employed to a large extent by accountants when preparing financial statements and reports that reflect the company's situation (Yan et al., 2007).

Research on the relationship between audit committee and firm performance show mixed results.

According to Kyereboah-Coleman (2007) audit committee size positively and significantly impacts firm performance since the size of the audit committee may be related with the effectiveness of controlling the errors in the financial reporting process and may affect the firm's performance positively. Bedard et al. (2004) argued that control and oversight functions on accounting and financial processes increased when the audit committee was large. Anderson et al. (2004) found that large supervisory committees have the potential to protect and control the accounting and financing process, bringing more transparency. A very large audit committee can lead to accountability and process losses (Karamanou and Vafeas, 2005). Reddy et al (2010) investigated relationship between audit committee size and firm performance of 50 companies during 1999 to 2007 for using OLS regression and 2SLS regressions.. They used Tobin’s Q and ROA as dependent variables. They found positive relationship between audit committee size and firm financial performance. Larger size of audit committee was associated with better corporate financial performance. Bauer et al (2009), Al-Matari et al (2012), De Oliveira Gandrige et al (2012) and Zabojnikova (2016) also found positive relationship between audit

committee size and firm performance. It is argued that the increased number of members provides more effective monitoring and thus improves firm performance. Besides, according to larger audit committees than some researchers, what is controversial may lead to inefficient governance? (Zabojnikova, 2016).

Klein (1998) explored the relationship between audit committee size and earnings management using a sample of 122 companies in the US. Their findings confirmed the existence of a negative correlation between earnings management and audit committee size. In addition, it is found that as the capacity of the audit committee increases, the performance of the firm may decrease. There was a negative relationship between audit committee size and multiple directorships, independence of audit committee (Sharma et al., 2009). Furthermore; they found a positive relationship between the risk of financial misinformation, audit committee dimension, institutional and managerial ownership, financial expertise and independence of the board. Bozec (2005) implemented to 500 large firms that were listed on the Canadian Stock Exchange during 1976 to 2000 for using multiple regression as method. ROS, ROA, Sales efficiency and assets turnover were used as dependent variables. Negative relationship was found between audit committee size and firm performance. Al- Matari et al (2012) and Mollah and Talukdar (2007) found also has consistent findings.

Bansal and Sharma (2016) investigated relationship between audit committee size and firm financial performance of 235 non-financial public limited companies listed in NSE 500 during 2004 to 2013. They used ROA, ROE, Tobin's Q and market capitalization as dependent variables. There was no relation between audit committee size and financial performance. Aanu and Foyeke (2014) also found no relation between these variables.

2.2.7. Gender and Firm Financial Performance

A board with more women is more dynamic, supportive and collaborative, a board that discusses its views and does not hesitate to socialize together (Konrad et al., 2008). Women in the executive board can increase the effectiveness of management control because they are tighter and more reliable than male counterparts. Participation in the

management of the board can help avoid risky projects because they generally receive more financial risk than men (Byrness et al., 1999).

The presence of female directors is helpful in deciding. For example, women's governance participation can help prevent very risky projects because women often avoid financial liability and are less confident than men (Barber and Odean 2001). Levi et al. (2008) examines the role of women in corporate governance during mergers and acquisitions, and looks at the recurrence of a lower tar-get abnormal announcement period, as well as the dampening role of independent female directors on the paid offer premium.

From the perspective of increasing board diversity, men and women have different cognitive biases and women are likely to have different norms, behavior, beliefs, and perspectives based on these cognitive differences (Pelled et al., 1999). Dutton & Duncan (1987) argue that a different belief structure in an organization increases the frequency of triggering of the event and the possibility of change that is deemed feasible. To the extent that they have different views, female directors can bring out conflicting views, knowledge, viewpoints and alternative solutions to the problems.

However, research on the relationship between the presence of women on boards and firm performance has produced mixed results.

Positive relationship between percentage of female in board of directors and firm performance was found by following researchers; Ghani and Barrett (2014) found a positive and significant relationship between the presence of women on boards and the performance of Malaysian companies and also positive and significant relationship between a higher numbers of women on boards with firm performance. Campbell and Vera (2009) found positive short-term (stock market) impacts and positive long term impacts (firm value) for Spanish firms whose boards included one or more women. Virtanen (2012) found that female directors took more active roles on boards and used board power more than male directors. In board meetings, women are said to listen more openly to other speakers, attend more assiduously to others' needs, offer respect and consideration more often, and do more to help the group identify mutually satisfactory compromises to solve delicate problems.

Carter et al. (2003); Luckerath-Rover (2011) found positive significant relationship between women directors and firm performance. The goal of their study is therefore twofold: firstly, to critical evaluate these two often cited studies and secondly, to investigate the relationship between women directors and company performance in the Netherlands (Rovers, 2011).

Meanwhile in the USA, Adams and Ferreira (2009) found a negative average effect of gender diversity on firm performance. Tacheva and Huse (2006) found a negative impact of women directors on the financial control and service tasks. These perceptions and findings about the effects women have on board task performance suggest they need to examine possible links between the board's group processes and the board's performance of its tasks (Akpan and Amran, 2014). Bohren and Strom (2007), and Bar et al. (2008) also found a negative relationship between gender and fund returns. Darmadi (2011) found a negative effect of female directors on both ROA and Tobin`s q using 169 Indonesian firms in 2007. Minguez-Vera and Martin (2011) found a significant negative relationship between female directors and firm performance measured by ROE using sample of small and medium Spanish enterprises from 1998 to 2003. According to Minguez-Vera and Martin (2011), women members may apply strategies that are less risky than male members, which may cause performance to decline. Darmadi (2013) found a negative effect of female directors on both ROA and Tobin`s q using public firms listed on the Indonesia Stock Exchange. There are more female members in the management board of small firms controlled by the family in the sample. This might be result of negative effect on the sample.

No association between percentage of female in board of directors and firm performance was found by (Farrell and Hersch, 2005; Marinova et al. 2010). Gregory-Smith et al. (2012) used UK firms from 1996 to 2010 found no significant effect both with ROA and ROE. However, Haslam et al. (2010) found no relationship between the presence of women on the boards of UK firms with the firms' accounting performance measured as ROA and ROE.

Table 3: Literature review on board structure and firm financial performance relationship (1/6)

Authors / Year	Sample	Dependent	Independent	
Kiel and Nicholson, 2003	348 companies from ASX in 1996	ROA	Board independence CEO duality Board size Number of interlocks Revenue Assets	Na Na Na Na + -
Luan and Tang, 2007	Taiwan Electronic Industry 1997-2002	ROE	Independent outsider assignment	+
Bathula, 2008	New Zealand (NZX Data Deep Archive) 2004-2007	ROA	Director ownership CEO duality Gender Board education Board meeting Board size	- + + - - +
Chung et al., 2009	Indian firms	ROA	Board size CEO duality Board independence	+ - -
Jackling and Johl, 2009	Indian companies listed om Bombay Stock Exchange (BSE) in 2006	ROA	Board independence CEO duality Board size Meeting	Na Na Na Na
Lan and Zhang, 2009	China Stock Market and Accounting Research Database 1721 firm period 2002-2004	ROA	Ownership concentration Institutional shareholding Board independence Managerial compensation Debt	Na Na Na Na Na
Rashid et al., 2010	274 Bangladeshi firm-years	ROA	Outside director Board size CEO duality Ownership structure	Na - Na Na
Uadiale, 2010	30 quoted companies for the period 2007 listed in Nigerian Stock Exchange	ROE	Board size Outside directors Director's stockholding CEO duality	+ Na Na Na
Azam et al., 2011	Oil and gas sector of Pakistan Karachi Stock Exchange 2005-2010	ROA + ROE	CEO duality Ownership concentration Outside director Effective audit committee	+ + + +
Chiang, 2011	1194 observations in Taiwanese firms in 2008	ROA	CEO duality CEO internalization Board size Board independence	- Na Na +
		ROE	CEO duality CEO internalization Board size Board independence	- + Na +

Table 3: Literature review on board structure and firm financial performance relationship (2/6)

Authors / Year	Sample	Dependent	Independent	
Lin, 2011	2007-2009 TSEC/GTSM listed companies from Taiwan Economic Journal (TEJ)	ROA / ROE	CEO duality Board size Supervisory directors Family controlled directors Board independence Inside directors	- - + - + +
Fauzi and Locke, 2012	79 New Zealand listed firms 2007-2011	ROA	Board size Board independence Gender Audit committee Nomination committee Remuneration committee Managerial ownership Block holder's ownership	+ + - + + + + -
Fooladi, 2012	30 companies listed on Bursa Malaysia 2007	ROA	CEO duality Board independence Board size Ownership structure	- Na Na Na
		ROE	CEO duality Board independence Board size Ownership structure	- Na Na Na
Ullah et al. 2012	91 listed companies at Karachi Stock Exchange KSE-100 index	ROA / ROE	Board independence	+
Taghizadeh and Saremi, 2012	150 public listed Malaysian firms in the year ending 2008	ROA	Board meeting Board independence Gender (board) Gender (audit committee) Gender (remuneration committee)	- Na Na Na Na
		ROE	Board meeting Board independence Gender (board) Gender (audit committee) Gender (remuneration committee)	- - + Na Na

Table 3: Literature review on board structure and firm financial performance relationship (3/6)

Authors / Year	Sample	Dependent	Independent	
Tornyeva and Wereko, 2012 (CSR)	Insurance companies in Ghana	ROA	Board size	+
			Board independence	Na
			CEO duality	Na
			Board skill	+
			Managerial skill	+
			CEO tenure	+
			Audit committee size	+
			Audit committee independence	Na
			Foreign ownership	+
			Institutional ownership	+
		ROE	Board size	Na
			Board independence	Na
			CEO duality	Na
			Board skill	Na
			Managerial skill	+
			CEO tenure	Na
			Audit committee size	+
			Audit committee independence	+
			Foreign ownership	+
			Institutional ownership	Na
Yıldız and Doğan, 2012	27 Security Investment Trust Companies over period of 2009-2010	ROA	CEO duality	+
			Board size	-
		ROE	CEO duality	+
			Board size	-
Al-Shammari, 2013	Banks listed on KSE 2006-2010	ROA	Board independence	Na
			Family director	Na
			CEO duality	Na
			Board size	-
Amba, 2013	49 companies listed at Bahrain bours between 2010-2012	ROA	CEO duality	-
			Chairman of audit committee	+
			Board independence	-
			Ownership structure	Na
			Institutional Investors	+
Arosa et al., 2013	Spanish firms 2958 non-listed SMEs SABI databases in 2006	ROA	Board independence	-
			CEO duality	Na
			Meeting	Na
			Board size	-
			CEO Tenure	Na
Franken and Cook, 2013	U.S. Department of Agriculture Cooperative Statistics database and mail survey conducted in 2010	ROA	CEO Tenure	-
			Board independence	+
			Board size	-
			Equity	-
			Gender	-

Table 3: Literature review on board structure and firm financial performance relationship (4/6)

Authors / Year	Sample	Dependent	Independent	
Franken and Cook, 2013	U.S. Department of Agriculture Cooperative Statistics database and mail survey conducted in 2010	ROE	CEO Tenure Outside director Board size Equity Gender	Na Na Na Na Na
Mitchell, 2013	Toronto Stock Exchange TSE 300 Composite Index 2011	ROA	Board size Board tenure Board age Board independence	Na - Na Na
Vo and Phan, 2013	Using FGLS technique on 77 listed firms 2006-2011 in Vietnam	ROA	Board size Gender CEO duality Education level Board tenure Board independence Board compensation Board's ownership Block holders	- + + Na + Na + Na Na
Adhikary and Hoang, 2014	58 Vietnamese firms	ROA	Board diversity Board size Board independence	Na + +
		ROE	Board diversity Board size Board independence	Na + +
Al-Shammari, 2014	121 publicly listed Kuwait Stock Exchange from 2009 to 2011	ROA	Gender diversity Board size Ownership concentration	+ Na -
Ammari et al., 2014	40 French companies listed on SBF 120 for the period 2002-2009	ROA	Board size Board independence CEO duality	+ - +
		ROE	Board size Board independence CEO duality	- + -
Chaarani, 2014	40 Lebanese banks during 2006-2010	ROA	Board size Board independence CEO duality Largest shareholder Insider ownership	Na + - Na +
		ROE	Board size Board independence CEO duality Largest shareholder Insider ownership	Na + - Na +

Table 3: Literature review on board structure and firm financial performance relationship (5/6)

Authors / Year	Sample	Dependent	Independent	
Latief et al., 2014 (NPM)	22 Privatized companies in Karachi Stock Exchange	ROA	Board independence	Na
			CEO duality	Na
			Board size	Na
		ROE	Board independence	Na
			CEO duality	-
			Board size	Na
Marashdeh, 2014	Jordanian companies listed in Amman Stock Exchange 2000-2010	ROA	Board size	Na
			CEO duality	+
			Board independence	-
			Managerial ownership	Na
			Large shareholder	-
			Foreign ownership	Na
		ROE	Board size	Na
			CEO duality	+
			Board independence	-
			Managerial ownership	+
			Large shareholder	-
			Foreign ownership	+
Okan et al., 2014	2011 data of firms that are listed in Borsa Istanbul	ROA	Board size	+
			Board independence	Na
			Inside director	Na
Basyith et al., 2015	45 firms listed in Indonesian Stock Exchange 2010-2014	ROA	Managerial ownership	-
			Block holder ownership	+
			Independent commissioner	Na
			Audit committee	Na
			Board size	-
Bebeji et al., 2015	22 banks listed at the Nigerian Stock Exchange	ROA	Board size	-
			Board independence	+
		ROE	Board size	-
			Board independence	+
Nath et al., 2015	Pharmaceutical industry of Bangladesh listed in Dhaka Stock Exchange (DSE)	ROA	Outside director	Na
			Board size	-
			Board ownership	Na
			CEO duality	Na
Cimerova et al, 2015	244 firms for the years 2002 to 2012	ROA	Board size	+
			Gender diversity	+
			Board independence	+
			Board age	+
			CEO duality	+
Dabor et al., 2015	Nigerian firms 2004-2013	ROA	Ownership structure	Na
			Board size	-
			Board independence	+
			Gender	Na
		ROE	Ownership structure	Na
			Board size	Na
			Board independence	Na
			Gender	Na

Table 3: Literature review on board structure and firm financial performance (6/6)

Authors / Year	Sample	Dependent	Independent	
Darweesh, 2015	Kingdom of Saudi Arabia's 116 firms from 2010 to 2014	ROA	Board size	+
			Board independence	-
			Board committee	Na
			Ownership structure	Na
			Executive compensation	-
		ROE	Board size	+
			Board independence	-
			Board committee	Na
			Ownership structure	Na
			Executive compensation	+
Haider et al., 2015	Bank of Pakistan in phase of 2008-2012	ROA	Board size	+
			Number of meetings	-
			Audit committee size	+
		ROE	Board size	+
			Number of meetings	-
			Audit committee size	Na
Johl et al., 2015	All Malaysian firms listed on the Bursa Malaysia in 2009	ROA	Inside director	Na
			Board meeting	-
			Board size	+
			Accounting expertise of board members	+
Bansal and Sharma, 2016	235 non-financial public limited companies listed in NSE 500 during 2004 – 2013	ROA	Outside director	+
			Board size	Na
			CEO duality	+
			Promoter shareholding	Na
			Audit committee independence	Na
			Audit committee meetings	Na
		ROE	Outside director	-
			Board size	Na
			CEO duality	+
			Promoter shareholding	+
			Audit committee independence	+
			Audit committee meetings	-

2.3. LITERATURE REVIEW ON BOARD STRUCTURE AND FIRM FINANCIAL PERFORMANCE IN SHIPPING COMPANIES

According to literature review, there have been a few studies related to board structure and firm financial performance in shipping companies (see table 4), therefore these studies are reviewed in more detail.

Randoy et al. (2003), "Corporate Governance and Board Effectiveness in Maritime Firms"

Randoy et al. (2003) examined the financial performance effect of three corporate governance variables which were founding family CEO, board ownership and board independence. They used multivariate ordinary least-squares regression on a 3-year sample of 32 publicly traded maritime firms from Norway and Sweden, and compared to the results of the same hypothesis tested on a sample of 96 manufacturing firms. They developed three hypotheses about financial performance. They are;

- Founding family CEOs had a positive impact on maritime firms financial performance
- Board ownership had a positive impact on maritime firms financial performance
- Board independence had a positive impact on maritime firms financial performance

They used return in assets (ROA) as the measure of firm performance. They also tested the models with the alternative accounting measures of Return on Equity (ROE) and Return on Sales (ROS), but did not significantly change the results. A cross-sectional ordinary least-squares (OLS) regression model was used to test the proposed hypotheses.

- According to findings of Return on Assets (ROA);
    - A founding family CEO had better financial performance than maritime firms with a non-founding family CEO

- High level of board independence enhanced profitability in maritime firms
- There is no relationship between board size and profitability contrary to agency theory

Lambertides and Louca (2008), "Ownership Structure and Operating Performance: Evidence from the European Maritime Industry"

Lambertides and Louca (2008) investigated relationship between ownership structure and operating performance. They used multivariate analysis as method of this study. Their sample was 266 European shipping firms.

Findings of this study;

- There was a positive relationship between foreign shares and firm operating performance
- Investment share had a positive impact on firm operating performance
- There were any relationship between employee / government share and firm operating performance
- Portfolio shares positively and significantly affected firm operating performance

Syriopoulos and Tsatsaronis (2011), "The Corporate Governance Model of the Shipping Firms: Financial Performance Implications"

Syriopoulos and Tsatsaronis (2011) investigated key corporate governance mechanisms and financial performance implications for shipping firms and enrich empirical evidence on the subject. They employed a sample of leading Greek shipping firms and followed an empirical approach to Randoy et al. (2003). They examined, specifically:

- The presence of a founding family CEO
- The ownership concentration (equity stake percentage) held by board of directors (BoD) members
- The inclusion of independent (outside) members in BoDs.

They focused on a carefully selected sample of 11 Greek shipping firms that were listed on American Stock Exchange (NYSE, NASDAQ), in order to capture the recent IPO wave seen in these equity markets. The study period covered each year 2004 to 2008. A cross-sectional – panel data – framework was employed to empirically investigate the corporate governance hypotheses discussed earlier. ROA and ROE were used as dependent variables. They developed three hypotheses which were;

- The managerial executives (CEOs) directly related to the founding family (founding family CEOs) had a positive impact on the financial performance of the shipping firms
- Ownership concentration by BoD members had a positive but declining impact on the financial performance of the shipping firms
- The independent BoD members can exert a positive impact on the financial performance of the shipping firms.

They discussed and compared briefly their empirical findings on corporate governance and financial performance of Greek shipping firms with the only other relevant study in the field, namely Randoy et al. (2003) on Scandinavian maritime business.

The two studies on maritime firms converged to similar conclusions as to the positive implications of a founding family CEO on shipping firms' financial performance. However, contrary to Syriopoulos and Tsatsaronis (2011), Randoy et al. (2003) did not conclude any significant relation between BoD ownership and firm performance (ROA).

Kalliopi and Pinelopi (2011), "CEO duality and Firm Performance in the Shipping Sector"

Kalliopi and Pinelopi (2011) shed light on the extent to which the corporate leadership structure affected corporate performance, especially for firms in the shipping industry. They used ROA, ROE, ROIC (Return on Invested Capital), EBITDA (Earnings before Interest, Taxes, Depreciation, And Amortization) as dependent variables. They investigated relationship between CEO duality and firm financial performance. There didn't show a significant relationship between CEO duality and firm performance in the shipping sector.

Syriopolous and Tsatsaronis (2012), "Corporate Governance Mechanisms and Financial Performance: CEO Duality in Shipping Firms"

Syriopolous and Tsatsaronis (2012) investigated the relationship between CEO duality / separation and shipping firms' financial performance. According them, shipping sector is an interesting case for researching this relationship. They could formulate two hypotheses for investigating CEO duality / separation. According to agency theory, CEO duality doesn't affect financial performance positively. For better financial performance, CEO must be separated to Chairman of board. On the contrary, stewardship theory defends that CEO duality affect financial performance positively. CEO and Chairman must be the same person. Hypotheses were developed theories;

- Based on agency theory, CEO duality was negatively associated with the financial performance of the firm
- According to stewardship theory, CEO duality was positively associated with the financial performance of the firm.

The data set consisted of 43 shipping firms that are all listed on two major US stock exchanges; NASDAQ and NYSE. The time span covered 2002 to 2008, using annual observations. The data sources to calibrate the empirical model include corporate annual reports, financial statements and IPO prospectuses, firm websites and press

releases as well as any relevant information from the exchanges where the sample firms are listed. The sample of maritime firms, 22 of them do not apply CEO duality, on the other hand 21 firms have applied CEO duality. They investigated that corporate governance choice of CEO duality or separation was associated with an improvement or not of the financial performance of the maritime firms.

According this study, Return on Equity (ROE) and Return on Assets (ROA) were used as dependent variables whereas CEO duality, shareholder's equity/total assets, debt ratio, firm age and size were used as independent variables. They run two empirical models. The empirical methodology followed panel data approach which is useful in empirical cases where multiple subjects are studied over two or more time period.

Findings of this study were followed;

- According to model 1 (ROA);
    - CEO duality had a negative impact on shipping firm financial performance
    - Shareholder's equity/total assets affected positively to shipping firm financial performance
    - Negative relationship between debt ratio and firm financial performance
    - Firm size affected positively to firm financial performance
    - Firm age wasn't found any relation with firm financial performance
- According to model 2 (ROE);
    - CEO duality had a negative impact on shipping firm financial performance
    - Shareholder's equity/total assets affected positively to shipping firm financial performance
    - Negative relationship between debt ratio and firm financial performance
    - Firm size wasn't found any relation with firm financial performance
    - Firm age wasn't found any relation with firm financial performance

They had focused their interest on empirically testing whether CEO duality or separation could have a positive or negative impact on the financial performance of shipping firms, thus testing the validity of agency theory against stewardship theory. Empirical evidence appeared to support the concerns raised by agency theory that suggested CEO duality was not a good governance practice, as it compromised potential CEO monitoring and control by the Chairman and the Board and might jeopardize shareholder's best interests.

Tsianos et al. (2012), "Concentrated Ownership and Corporate Performance Revisited: The Case of Shipping"

Tsianos et al. (2012) addressed the issue of ownership structure and corporate governance. It employed a sample of 107 internationally listed shipping firms and examined their financial data and ownership concentration for the year 2009.

They formed four hypotheses. There were;

- The corporate governance of the shipping company was positively related with concentrated ownership, independently of the institutional environment that the company operated in.
- The size of the shipping company affected negatively the extent of ownership concentration
- The liquidity of the shipping company was positively related to ownership concentration
- The number of years a shipping corporation was listed, was positively related to ownership concentration.

ROE, ROA and ownership were defined as dependent variables for this study. Ownership was treated as an endogenous variable and GMM estimation was used incorporating the significant advance. They observed a bidirectional, strong and positive relationship between concentrated ownership and firm performance. Their findings suggested that concentrated ownership was positively and strongly associated with better firm performance, higher liquidity and smaller size in the shipping industry.

Syriopoulos (2012), "Efficient Corporate Governance Mechanisms: An Application to the Shipping Business"

Syriopoulos (2012) investigated the relation between CEO duality and financial performance in shipping companies. He used panel data approach as method of this research. ROA and ROE were used as dependent variables. His sample was 43 shipping company listed in NYSE and NASDAQ during 2002 to 2008. CEO duality affected negatively to financial performance in shipping companies. This study supported agency theory.

Andreou et al. (2013), "Corporate Governance, Financial Management Decisions and Firm Performance: Evidence from the Maritime Industry"

According to Andreou et al. (2013), the relation between corporate governance with financial management decisions such as earnings management and sub-optimal investment, and firm performance in maritime firms.

Sampling of this study was maritime listed in the US over the period 1999-2010 which generated from COMPUSTAT. This sampling included deep sea foreign transportation firms which were several categories such as bulk, container, general cargo, tanker, offshore, and vehicle carrier. The sampling frame consisted of 46 firms with 273 firm-year observations.

Depending on regression model considered, a different set of control variables is employed in accord with prior literature. In the earnings management regression models the following control variables included firm size, Return on Equity (ROE), leverage and cash holdings. Insider ownership, board size, percentage of corporate governance committees, percentage of directors serving on the boards of other firms and CEO duality were used as independent variables.

Panel A reported the descriptive statistics for two dependent variables, abnormal accruals which captured directional earnings management tendency and absolute abnormal accruals which captured non-directional earnings management tendency. Panel

B presented the results for the abnormal accruals variable. Regression model included only the control variables.

Board size, insiders' ownership, busy directors and CEO duality were all associated with firm operating performance. Large board size may be an optimal value maximizing outcome for the maritime industry.

Table 4: Literature review on board structure and firm financial performance relationship in Shipping Companies (1/2)

AUTHOR	TITLE	AIM OF THE STUDY	METHOD	MAIN FINDINGS
Randoy, Down and Jennsen, 2003	Corporate Governance and Board Effectiveness in Maritime Firms	To examine the financial performance effect of three corporate governance mechanisms; -founding family CEO -board ownership -board independence	OLS Regression (ROA, ROE, ROS)– 3 years sample of 32 maritime firms from Norway and Sweden	-Founding family leadership (CEO) enhances performance (ROA) in maritime firms -Block holder ownership appears to be unrelated to performance in maritime firms -Board independence is associated with higher performance in maritime firms
Lambertides and Louca, 2008	Ownership Structure and Operating Performance: Evidence from the European Maritime Industry	Relation between ownership structure and operating performance	Multivariate analysis – 266 European shipping firms	-There is a positive and significant relationship between foreign shares, investment share, portfolio shares and operating performance - There is a no relationship between employee shares, government shares and operating performance
Syriopoluos and Tsatsaronis, 2011	The Corporate Governance Model of the Shipping Firms: Financial Performance Implications	To investigate the impact of important internal corporate governance mechanisms on shipping firm financial performance	OLS regression (ROA and ROE) 11 Greek shipping firms are listed on American stock exchanges (NYSE and NASDAQ)	-There is a positive and significant relationship between gounding/owner family CEO, equity stakes held by BoD members and financial performance -There is a negative and significant relationship between equity stake held by BoD above 5%, independence of BoD members and financial performance.
Kalliopi and Pinelopi, 2011	CEO duality and Firm Performance in the Shipping Sector	To shed light on the extent to which the corporate leadership structure affects corporate performance, especially for firms in the shipping industry	ROA ROE ROIC EBITDA	not show a significant relationship between CEO duality and firm performance in the shipping sector

Table 4: Literature review on board structure and firm financial performance relationship in Shipping Companies (2/2)

AUTHOR	TITLE	AIM OF THE STUDY	METHOD	MAIN FINDINGS	
Syriopoulos and Tsatsaronis, 2012	Corporate Governance Mechanisms and Financial Performance: CEO Duality in Shipping Firms	To investigate the impact of CEO duality/separation on the financial performance of shipping firms	Regression analysis – ROA and ROE (47 shipping firms on NASDAQ and NYSE between 2002-2008) -CEO duality -Shareholder's Equity / Total Assets -Debt ratio -Firm age -Firm size	**ROA** -There is a positive and significant relationship between shareholder's equity / total assets and ROA -There is a negative and significant relationship between CEO duality, debt ratio and ROA -There is no significant relationship between firm age, firm size and ROA	**ROE** -There is a positive relation between shareholder's equity / total assets, firm age and ROE -There is a negative and significant relationship between debt ratio, CEO duality and ROE -There is no significant relationship between firm size and ROE
Tsianos, Merikas and Merika, 2012	Concentrated Ownership and Corporate Performance Revisited: The Case of Shipping	To explore the casual effect of concentrated ownership on corporate governance	System GMM (ROE and ROA) 107 internationally listed shipping firms in 2009	-Bidirectional, strong and positive relationship between concentrated ownership and firm performance -Significant relationship between concentrated ownership and better financial performance, higher liquidity and smaller size	
Syriopoulos, T., 2012	Efficient Corporate Governance Mechanisms: An Application to the Shipping Business	To investigate the relation between CEO duality and financial performance in shipping companies	Panel data approach – ROA and ROE 43 shipping company listed in NYSE and NASDAQ during 2002 to 2008	-CEO duality affected negatively to financial performance in shipping companies -This study supported agency theory	
Andreou, Louca and Panayides, 2014	Corporate Governance, Financial Management Decisions and Firm Performance: Evidence from the Maritime Industry	To investigate the relation between corporate governance with financial management decisions such as earnings management and sub-optimal investment and firm performance in maritime firms	Regression- US over period 1999-2010 Tobin's Q -Insider ownership -Board size -Presence of corporate governance committees -Percentage of directors serving on the boards of other firms -CEO duality	Board size, insiders' ownership, busy directors and CEO duality are all associated with firm operating performance -Large board size may be an optimal value maximizing outcome for the maritime industry	

CHAPTER THREE

RESEARCH ON IMPACT OF BOARD STRUCTURE ON FINANCIAL PERFORMANCE IN SHIPPING COMPANIES: A PANEL REGRESSION APPLICATION

In this part of the study, the effect of the board structure on financial performance of the global shipping companies is examined in the six-year period of 2011-2016. The reason that the analysis is conducted during this period is data availability. In general, the companies' financial reports in the sample is publicly available by the year 2011. In this context, the aim and importance of the study is firstly presented and then the research data used in the study and detail information about the research model are given. In the later stage, the impact of board structure on the financial performance of the shipping companies is examined by applying panel regression analysis method using the data, and the findings obtained were presented.

3.1. AIM OF THE RESEARCH

The aim of this study is to analyze the effects of the board structure on the financial performance of the shipping companies. In this study, due to the prior literature's contradictory findings, it is aimed to investigate the effects of board size, board age, CEO duality, board tenure, board independence, audit committee size, gender, ownership concentration and institutional ownership on ROA (return on asset) and ROE (return on equity) which are financial performance measures.

The effects of the board structure on the performance of companies have been researched in many studies for a long time. However, when the effect was examined from the point of view of the shipping industry, a few studies could be reached. The limited studies in the shipping sector and the fact that the samples of the studies are regional are the main motivations of this study. In this context, this research uses the sampling prepared using the master thesis prepared by Kalliopi and Pinelopi (2011). Based on past studies in

the shipping literature, many studies have formed samples based on specific countries and regions. However, the sample of the study of Kalliopi and Pinelopi (2011) that is made up of global firms and has the largest sample in the shipping literature. It was used 27 global shipping companies using the IFRS system were included in the study. The data was collected from three sources that came to complete one another by Kalliopi and Pinelopi (2011). Shipping companies in the sample are given table 5.

Table 5: Research Sample of the Study

	Company name	**Stock Exchange**	**Std.**
1	A.P. Moller – Maersk A/S	Copenhagen Stock Exchange	IFRS
2	Algoma Central Corporation	Toronto Stock Exchange (TSE)	IFRS
3	Aspo Oyj	Helsinki Stock Exchange	IFRS
4	Braemar Shipping Services PLC	London Stock Exchange	IFRS
5	Clarkson PLC	London Stock Exchange	IFRS
6	Deutsche Post AG	London Stock Exchange	IFRS
7	DFDS A/S	Copenhagen Stock Exchange	IFRS
8	DHT Holdings Inc.	NYSE	IFRS
9	DSV Air & Sea Inc.	Copenhagen Stock Exchange	IFRS
10	Euronav N.V	NYSE	IFRS
11	Exmar N.V.	Brussels Stock Exchange	IFRS
12	Finnlines Oyj	Six-Swiss-Exchange	IFRS
13	Globus Maritime Limited	NASDAQ	IFRS
14	Grupo TMM, S.A.B.	Mexican Stock Market	IFRS
15	Hapag-Lloyd AG	Frankfurt and Hamburg Stock Exchange	IFRS
16	I.M. Skaugen SE	Oslo Stock Exchange	IFRS
17	Irish Continental Group Plc	Irish Stock Exchange	IFRS
18	Kintensu World Express Inc.	Tokyo Stock Exchange	IFRS
19	Kuehne Nagel International AG	SIX Swiss Exchange (VTX)	IFRS
20	Mainfreight Inc.	New Zealand Stock Exchange	IFRS
21	MISC Berhad	Kuala Lumpur Stock Exchange	IFRS
22	Odfjell ASA	OSLO	IFRS
23	Panalpina Welttransport AG	Swiss Stock Exchange	IFRS
24	Scorpio Tankers Inc.	NYSE	IFRS
25	TNT Express N.V	Amsterdam Stock Exchange	IFRS
26	TORM Tankers	NASDAQ	IFRS
27	UK Mail Group Plc	London Stock Exchange	IFRS

3.2. RESEARCH METHODOLOGY: PANEL REGRESSION MODEL

Panel data analysis has allowed of assuming longitudinal analyses to researchers in a wide range of fields within the social sciences (Gujarati, 2003; 638-640). *"Panel data analysis can provide a rich and powerful study of a set of people, if one is willing to consider both the space and time dimension of the data"* (Yaffee, 2003).Panel data analysis has some benefits and limitations. These can be listed as follow (Baltagi, 1995);

Benefits;

- Controlling for individual heterogeneity
- More informative data, more variability, less co-linearity among the variables, more degrees of freedom and more efficiency
- Dynamics of adjustment
- Able to identify and measure effects that are simply not detectable in pure cross-sections or pure time-series data
- To allow constructing and testing more complicated behavioral models than purely cross-section or time-series data
- To gather on micro units , like individuals, firms and households usually

Limitations;

- Design and data collection problems
- Distortions of measurement errors
- Selectivity problems (Self-selectivity, no response, attrition)
- Short time-series dimension

Panel data sets involve N entities or subject each of T observations measured at 1 through t time period. This result causes NT number of observations (Park, 2009).

Basic panel data regression model is (Güdük, 2012);

$Yit=\alpha i + \beta xit + \varepsilon it$

$i = 1,...., N$; $t = 1,...T$ for a total of NT observations.

Table 6: Fixed Effect Model vs. Random Effect Model

	Fixed Effect Model	**Random Effect Model**
Functional Form	Yit=(α+ui) + X'itβ + vit	Yit=α + X'itβ +(ui+ vit)
Intercepts	Varying across groups and/or times	Constant
Error Variables	Constant	Varying across groups and/or times
Slopes	Constant	Constant
Estimation	LSDV, within effect method	Generalized Least Squares, Feasible Generalized Least Square
Hypothesis Test	Incremental F test	Breusch-Pagan LM Test

Source: Park; 4

In Panel data analysis, it uses both fixed effect and random effect models (see table 6) commonly. In order to choose the most suitable method for data set, it implements Hausman test (Bayraktutan and Demirtas, 2011). If P value is higher than 0,05, it will be used random effect GLS regression. If P value is less than 0,05, it will be used fixed effect regression analysis. In the fixed effect model, the changes according to the units bring about differences in fixed coefficients. While the slope parameters are the same for all horizontal sections (βi = β), the fixed parameter varies from unit to unit due to the unit effect. In other words, the fixed term takes on different values for each horizontal cross-sectional unit, that is, the differences between units are expressed by fixed differences. For this reason, the fixed coefficient is considered as a fixed variable. Furthermore, in these models, it is assumed that the arguments are independent of the error term. But unit effect and independent variables are related. When units are randomly selected, the differences between the units will also be coincidental. These unit differences are called *"random differences"*. In panel regression analysis, it is generally assumed that there are a number of factors that influence the value of the dependent variable but do not appear in the model, such as the independent variable, and that these factors are summarized by a random residue. When a large number of units are observed according to time, while it is assumed that some of the excluded variables represent factors specific to both unit and time periods, other variables will only reflect unit differences (Torres-Reyna, 2007).

3.2.1. The Research Model and Variables

The research model of this study is developed due to Kiel and Nicholson (2003), Lan and Zhang (2009), Rashid et al. (2010), Fagbemi et al. (2010), Chiang (2011), Fauzi and Locke (2012), Franken and Cook (2013), Mitchell (2013), Vo and Phan (2013), Al-Shammari et al. (2014) and Bansal and Sharma (2016). That are discussed in detail in chapter 2. Variables are divided into three categories. There are independent, dependent and control variables. Independent variables are board size, board age, CEO duality, board tenure, independent directors, audit committee size, gender. Return on assets (ROA) and return on equity (ROE) are used as dependent variables. The main ratios that show the profitability of the investments are the ROA and ROE. The ROE measures the performance of the equity of the enterprises. Especially when comparing the enterprises operating in the same industry sector, this measurement may be used as performance indicator. If the ratio is large, it can be said that the investor has made a good investment and kept the costs under tight control. ROA represents the next income of taxation in return for all the investments made by the business. In other words, it is a metric that measures how well the business provides returns from investments. In shipping literature, ROA and ROE are usually used as dependent variables. Tangibility, total assets, GDP growth, ownership concentration, major shareholders, institutional ownerships and leverage are used as control variables.

This study has two dependent variables. There are Return on Assets (ROA) and Return on Equity (ROE). Eight models are developed for each dependent variables. For each model, it is used Hausman test to recognize that it will be used fixed or random effects regression analysis. For preparing control variables for ROA, total assets variables were not used due to the fact that these variables used when it used ROA calculation. ROA calculates net income divided by total assets. For preparing control variables for ROE, GDP growth rate was used for macro-economic environments. GDP growth rate is related with investments of shareholders. ROE shows how much shareholders earn as a result of their investment. Higher ROE indicates that business resources are being used efficiently.

The empirical model used for ROA in this study can be described as follow (see table 9);

Model 1: The relation between board structure (board size, board age, women on board), control variables (leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(BS)+\beta2(BA)+\beta3(GENDER)+ \beta4(LEV)+\beta5(TAN)+ \varepsilon$

Model 2: The relation between board structure (women on board and board tenure), control variables (leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(GENDER)+\beta2(BT)+\beta3(INS)+ \beta4(LEV)+\beta5(TAN)+ \varepsilon$

Model 3: The relation between board structure (board size, independent directors), control variables (ownership concentration and major shareholders, leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(BS)+\beta2(IND)+\beta3(OWN)+\beta4(MAJOR)+\beta5(LEV)+ \beta6(TAN)+ \varepsilon$

Model 4: The relation between board structure (board size, audit committee size), control variables (major shareholders, and institutional ownership, leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(BS)+\beta2(ACS)+\beta3(MAJOR)+ \beta4 (INS)+ \beta5(LEV)+\beta6(TAN)+ \varepsilon$

Model 5: The relation between board structure (board size, CEO duality), control variables (ownership concentration, leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(BS)+\beta2(DUALITY)+\beta3(OWN)+\beta4(LEV)+ \beta5(TAN)+ \varepsilon$

Model 6: The relation between board structure (board age, independent directors, and women on board), control variables (major shareholders and institutional ownership, leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(BA)+\beta2(IND)+\beta3(GENDER)+\beta4(MAJOR)+\beta5(INS)+\beta6(LEV)+\beta7(TAN) + \varepsilon$

Model 7: The relation between board structure (board size, independent directors, board tenure), control variables (institutional ownership, leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(BS)+\beta2(IND)+\beta3(BT)+\beta4(INS)+ \beta5(LEV)+\beta6(TAN)+ \varepsilon$

Model 8: The relation between board structure (board age, CEO duality, independent directors, and audit committee size and board tenure), control variables (leverage and tangibility) and firm performance (ROA).

$ROA=\alpha+\beta1(BA)+\beta2(DUALITY)+\beta3(IND)+\beta4(ACS)+\beta5(BT)+\beta6(LEV)+\beta7(TAN)+\varepsilon$

The empirical model used for ROE in this study can be described as follow (see table 8);

Model 1: The relation between board structure (board size, women on board, board tenure), control variables (ownership concentration, leverage, tangibility and logarithm of total assets) and firm performance (ROE).

$ROE=\alpha+\beta1(BS)+\beta2(GENDER)+\beta3(BT)+\beta4(OWN)+\beta5(LEV)+\beta6(TAN)+\beta7(LNA)+\varepsilon$

Model 2: The relation between board structure (board size, women on board), control variables (institutional ownership, leverage, tangibility, logarithm of total assets and GDP growth) and firm performance (ROE).

$ROE=\alpha+\beta1(BS)+\beta2(GENDER)+\beta3(INS)+\beta4(LEV)+\beta5(TAN)+\beta6(LNA)+\beta7(GDP)+\varepsilon$

Model 3: The relation between board structure (board size, women on board), control variables (institutional ownership, leverage, tangibility, logarithm of total assets and GDP growth) and firm performance (ROE).

$ROE=\alpha+\beta1(BS)+\beta2(BA)+\beta3(GENDER)+\beta4(LEV)+\beta5(TAN)+\beta6(LNA)+\beta7(GDP)+\varepsilon$

Model 4: The relation between board structure (board size, independent directors), control variables (ownership concentration and institutional ownership, leverage, tangibility, logarithm of total assets and GDP growth) and firm performance (ROE).

$ROE=\alpha+\beta1(BS)+\beta2(IND)+\beta3(OWN)+\beta4(INS)+\beta5(LEV)+\beta6(TAN)+\beta7(LNA)+\beta8(GDP)+\varepsilon$

Model 5: The relation between board structure (board size, independent directors, women on board, audit committee size), control variables (major shareholders, leverage, tangibility and logarithm of total assets) and firm performance (ROE).

$ROE=\alpha+\beta1(BS)+\beta2(IND)+\beta3(GENDER)+\beta4(ACS)+\beta5(MAJOR)+\beta6(LEV)$
$+\beta7(TAN)+\beta8(LNA)+\varepsilon$

Model 6: The relation between board structure (board size, CEO duality, women on board, board tenure), control variables (institutional ownership, leverage, tangibility and logarithm of total assets) and firm performance (ROE).

$ROE=\alpha+\beta1(BS)+\beta2(DUALITY)+\beta3(GENDER)+\beta4(BT)+\beta5(INS)+ \beta6(LEV)+\beta7(TAN) + \beta8(LNA) + \varepsilon$

Model 7: The relation between board structure (board size, board age, women on board, board tenure), control variables (major shareholders, leverage, tangibility and logarithm of total assets) and firm performance (ROE).

$ROE=\alpha+\beta1(BS)+\beta2(BA)+\beta3(GENDER)+\beta4(BT)+ \beta5(MAJOR)+ \beta6(LEV)+\beta7(TAN) + \beta8(LNA) +\varepsilon$

Model 8: The relation between board structure (women on board), control variables (leverage, tangibility and logarithm of total assets) and firm performance (ROE).

$ROE=\alpha+\beta1(GENDER)+ \beta2(LEV)+\beta3(TAN)+ \beta4(LNA) +\varepsilon$

Independent variables of this study are (table 7);

- **Board size:** Number of inside and outside directors on the board
- **Board age:** Average age of all directors on the board
- **CEO duality:** Chairman also holds the position of CEO
- **Board tenure:** Number of years of experience in the board of a given company
- **Board independence:** Number of non-executive outside directors on board divided by the total number of board members
- **Audit committee size:** Number of members serving on the audit committee
- **Gender:** Number of women on the board divided by the total number of board members

Table 7: Definition of Variables

Variables	Measurement	Notation
Dependent Variables (Performance Indicators)		
ROA (Return on Assets)	Net income / Total assets	ROA
ROE (Return on Equity	Net income / Total Shareholders' Equity	ROE
Independent Variables (Board Structure Measures)		
Board Size	Number of inside and outside directors on the board	BS
Board Age	Average age of all directors on the board	BA
CEO Duality	Chairman also holds the position of CEO	DUALITY
Board Tenure	Number of years of experience in the board of a given company	BT
Board Independence	Number of non-executive outside directors on board divided by the total number of board members	IND
Audit Committee Size	Number of members serving on the audit committee	ACS
Gender	Number of women on the board divided by the total number of board members	GENDER
Control Variables		
Leverage	Total Liabilities / Total Assets	LEV
Tangibility	Total Long-Term Assets / Total Assets	TAN
Total Assets	Logarithm of Total Assets	LNA
GDP Growth	Growth Rates of Country where Headquarters of the companies are located	GDP
Ownership Concentration	Percentage share held by major shareholder	OWN
Major Shareholders	Percentage share held by two major shareholders	MAJOR
Institutional Ownerships	Percentage share held by institutional ownership	INS

Table 8: Model Summary for ROE

Definition	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Independent Variables	*Board size *Gender *Board tenure	*Board size *Board age *Gender	*Board size *Board age *Gender	*Board size *Gender	*Board size *Gender *Audit committee size *Board tenure	*Board size *CEO Duality *Gender *Board tenure	*Board size *Board age *Gender *Board tenure	*Gender
Control variables	*Ownership concentration *Leverage *Tangibility *Log of total assets	*Leverage *Log of total assets *GDP growth	*Leverage *Tangibility *Log of total assets *GDP growth	*Ownership concentration *Institutional ownership *Leverage *Tangibility *Log of total assets *GDP growth	*Major shareholders *Leverage *Tangibility *Log of total assets	*Institutional ownership *Leverage *Tangibility *Log of total assets	*Major shareholders *Leverage *Log of total assets	*Leverage *Tangibility *Log of total assets

Table 9: Model Summary for ROA

Definition	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Independent Variables	*Board size *Board age *Gender	*Gender *Board tenure	*Board size *Independent directors	*Board size *Audit committee size	*Board size *CEO duality	*Board age *Independent directors *Gender *Board tenure	*Board size *Gender *Board tenure	*Board age *CEO duality *Independent directors *Audit committee size *Board tenure
Control variables	*Leverage *Tangibility	*Institutional ownership *Leverage *Tangibility	*Ownership concentration *Major shareholders *Leverage *Tangibility	*Major shareholders *Leverage *Tangibility	*Ownership concentration *Leverage *Tangibility	*Institutional ownership *Leverage *Tangibility	*Institutional ownership *Leverage *Tangibility	*Leverage *Tangibility

Control variables of this study are;

- **Leverage:** Dividing total liabilities to total assets
- **Tangibility:** dividing total long-term assets to total assets
- **Total Assets:** how profitable a company a company is relative to it's the assets
- **GDP Growth:** the growth rates of countries where the headquarters of the companies are located.
- **Ownership concentration:** Percentage share held by major shareholder
- **Major shareholders:** Percentage share held by two major shareholders
- **Institutional ownerships:** Percentage share held by institutional ownership

Dependent variables of this study are;

- **ROA:** An indicator of how profitable a company is relative to its total assets.
- **ROE:** The amount of net income returned as a percentage of shareholders equity.

3.2.2. Hypotheses Development

The hypotheses that are developed due to the literature review are given below:

H_1: *Board size has a significant and positive impact on financial performance of shipping firms.*

Prior studies regarding the size of the board supported the positive relationship between the size of the board of directors and corporate performance (Shukeri et al., 2012; Adam and Mehran, 2003; Mak and Kusnadi, 2005; Kiel and Nicholson, 2003; Rechner and Dalton, 1991; Pfeffer, 1972; Zahra and Pearce, 1989; Lakhal, 2005; Chen et al., 2006). Large boards are viewed to lead to a better business performance owing to the wide variety of skills present for better decision making and monitor the performance of the CEO. However, Mishra et al., 2001; Singh and Davidson, 2003; Haniffa and Hudaib, 2006; Bozeman and Daniel, 2005; Holthauson and Larcker, 1993 found negative effects. There

is one evidence study in shipping literature about these variables. Although there are mixed results, Andreou et al. (2014) found that there is a positive relationship between board size and profitability for shipping companies. Since results may change over time or due to country specific factors, the first hypothesis is developed to search for more evidence for shipping sector.

H_2: *Board age has a significant and negative impact on financial performance of shipping firms.*

Some studies supported the positive relationship between the board age and corporate performance (Mahadeo et al., 2012; Dagsson, 2011 and Kidduff et al., 2000). However, Bonn et al. (2004), Child (1974) and Wiersema and Bantel (1992) found negative effects of board age on financial performance. Child (1974) argued that older manager has lower levels of ability to executive innovative strategies. Hambrick and Mason (1984) claimed that younger manager is more profitable than older managers due to higher growth experience.

H_3: *CEO duality has a significant and negative impact on financial performance of shipping firms.*

Agency theory argues that CEO duality may have adverse implications for the financial performance of the firm. This is because the joint responsibilities of the CEO and BoD Chairman exercised by the same person discourage effective monitoring and control of CEO performance and can lead to the manipulation of BoD decisions against owners' benefits. Firms that apply CEO duality may then underperform relative to those firms that separate CEO and Chairman Responsibilities (Rechner and Dalton, 1991; Tuggle et al. 2010; Bliss, 2011; Dalton and Dalton, 2011; Chen, 2011). However, according to Donaldson and Davis, 1994; Rechner and Dalton, 1991; Goyal and Park, 2002 and Boyd 1995 found that CEO duality positively effect on financial performance. It is found no significant relationship between CEO duality and firm performance (Vafeas and Theodorou, 1998 and Baliga et al., 1996). Four evidence study are found in shipping literature about this variables. Syriopoulos and Tsatsaronis (2012) and Syriopoulos (2012) found that there is a negative relationship between CEO duality and profitability. Andreou et al. (2014) found positive relation and Kalliopi and Pinelopi (2011) found no relation.

H_4: *Board independence has a significant and positive impact on financial performance of shipping firms.*

According to the agency theory, as board independence increases, financial performance increases.It is found a positive relationship between non-executive boards and financial performance by Salleh et al., 2005; Ramdani and Witteloostuijn, 2009; Zubaidah et al., 2009; Rhodes et al., 2010 Abdullah (2005), Haniffa and Hudaib (2006) and Rahman and Ali (2006) found that no significant relationship between independent directors and firm performance. According to Weir & Laing (2000), non-executive directors are only employed on a part-time basis and are therefore likely to have other work commitments, they may lack the expertise necessary for understanding highly technical business issues and may have insufficient information when required to make key decisions. Two evidence studies are found in shipping literature about these variables. Syriopoulos and Tsatsaronis (2011) found that there is a negative relationship between independent directors and profitability. However, Randoy et al. (2003) found positive relation. Thus samples and the analysis period of these studies may have led to contradictory findings.

H_5: *Audit committee size has a significant and positive impact on financial performance of shipping firms.*

An audit committee refers to who is generally responsible to oversee the financial reporting and communication with the firm (Mallin, 2007). The increased number of members is argued to provide more effective monitoring and thus improve firm performance (Kyereboah-Coleman, 2007; Reddy et al., 2010; Bauer et al., 2009; Al-Matari et al., 2012; De Oliveira Gandrige et al., 2012 and Zabojnikova, 2016). Howewer, Klein (1998), Sharma et al., (2009), Bozec (2005), Al- Matari et al (2012) and Mollah and Talukdar (2007) found negative relation. Bansal and Sharma (2016) and Aanu and Foyeke (2014) found no relation between variables. Impacts of audit committee size on financial performance not examined in shipping literature as far as detected.

H_6: *Gender has a significant and positive impact on financial performance of shipping firms.*

The reason for the positive relationship is based on the following studies in the literature; (Byrness et al., 1999; Barber and Odean, 2001; Konrad et al., 2008). Reason for expecting a positive relationship is that women in the executive board can increase the effectiveness of management control because they are tighter and more reliable than male counterparts (Byrness et al., 1999). The presence of female directors is helpful in deciding. For example, women's governance participation can help prevent very risky projects because women often avoid financial liability and are less confident than men (Barber and Odean, 2001). A board with more women is more diversified, supportive, and collaborative, and women feel freer to discuss their views and to socialize together (Konrad et al., 2008). Positive relationship between percentage of female in board of directors and firm performance was found by following researchers; Ghani and Barrett, 2014; Campbell and Vera, 2009; Virtanen, 2012; Carter et al., 2003; Luckerath-Rover, 2011; Ali et al., 2008; Sanda et al., 2008. However, Adams and Ferreira (2009), Huse (2006), Bohren and Strom (2007), Bar et al. (2008) Tacheva and Huse (2006) and Darmadi (2011) found a negative average effect of gender diversity on firm performance. No association between percentage of female in board of directors and firm performance was found by (Farrell and Hersch, 2005; Marinova et al. 2010). Impacts of gender on financial performance have not been examined in shipping literature as far as detected.

H_7: *Board tenure has a significant and positive impact on financial performance of shipping firms.*

The reason for the positive relationship is based on the following studies in the literature; Beasley, 1996 and Schnake et al., 2005; Hamouda et al., 2013 and Dou et al., 2015). Longer board tenure effect higher firm performance and also is impressed less prone to the pressure of the administrators (Beasley, 1996 and Schnake et al., 2005), more knowledge operations (Rutherford, 2007) and high blocking tendency of Opportunistic behavior of managers (Hamouda et al., 2013 and Dou et al., 2015). However, Huang (2013), Dou et al. (2015), Vafeas (2003), Berberich (2011) and Coles et al. (2015) found

that board tenure negatively impact on financial performance. Impacts of board tenure on financial performance not examined in shipping literature as far as detected.

3.3. RESEARCH SAMPLE AND DATA COLLECTION TOOL

Data is collected from the official web sites, annual reports and Worldbank official sites. The sample selected from companies using the IFRS system in shipping sector. Main reason for selecting the sample from the companies using the IFRS system is that analysis results should be interpreted on the basis of an international accounting system. As a result of literature review, a few studies in the shipping field have been reached. The shipping companies are generally private and family-owned firms. The board of directors is usually made up of family members. The public shares in shipping companies, which have more institutional ownership structure, have only recently increased (Syriopoulos, 2010). These reasons constitute the motivation of this study. The sample of this study is composed of 27 shipping companies. The data set was created using the annual reports from 2011 - 2016 and the data from websites of shipping companies. 161 observations are analyzed.

3.4. FINDINGS OF THIS STUDY

In this part of this study, the relationship between board structure and firm financial performance is examined. In the first stage, summary statistics on the variables used in analyzes are given. In the second stage, the directions of the relation between the variables used in analyze and the ratios of these relations were determined by examining the correlation coefficients. In the last stage, the effects on the company performance of the variables representing the board structure were examined and interpreted by panel regression analysis. The STATA11 program was used to measure the impact of the board structure on firm financial performance with panel regression model.

3.4.1. Descriptive Statistics

In the table 10, the mean values, standard deviation, minimum and maximum values of each variable are given. Observation size is average 161. Sample of this study is comprised of 27 shipping companies. When evaluated in terms of board size, the members of the board of directors of the sample are composed of minimum 5 and maximum 16 members. Mean of board size is 8,453416. That is, the board of directors of the shipping companies in the sample consists of an average of 8-9 persons. The board members in the sample are 56 years old on average. The youngest member is 42 years old. In most of companies, the CEO and Chairman of the board are separate persons. 53 % of the board members consist of independent members. All companies have audit committee. 42 % of the board members are also members of the audit committee. Audit committee consists of a minimum of 2 persons and a maximum of 7 persons. Most of companies have not female members. In the companies that have female members, there are maximum 3 female members. In recent years, the number of women on board has increased. When it is looked to ownership concentration, it have 33% rate for all shareholders rate. Two major shareholders have averagely 50% rate and also institutional shareholders have 52% rate in all shareholders. When it is looked numbers of years of experience in the board of a given company of board members, mean of board tenure is 6,196012 years. That is, the board of directors who work the shipping company consist of an average of 6-7 years.

The value reached as a result of calculating the leverage ratio shows that the assets are financed by debts. Lenders would prefer this ratio to be lower so that the high debt owner would increase the payment risk. Tangibility indicates to the rating to which the firm is financed by the fixed assets. Tangibility is calculated by dividing total long-term asset by total assets. It is an essential element of specifying the firm's leverage. Tangibility assets rate is 65 % in this sample. Total assets are average 21.506 million dollars and logarithm of total assets is average 7,39. GDP Growth rates of the countries where headquarters of the companies are located is 1,66 in average.

Table 10: Descriptive Statistics of the Research

Variable	Obs	Mean	Std. Dev.	Min	Max
Board Size	161	8,453416	2,421132	5	16
Board Age	155	56,20854	4,663261	42,5	67,625
Duality	161	,1118012	,316105	0	1
Independence	161	,5330623	,23487	0	9
Audit Committee Size	161	,4234681	,1344557	2	7
Gender	161	,1389319	,12379	0	3
Ownership Concentration	161	,3328882	,2070977	,0136	,9833
Major Shareholders	161	,5093025	,794664	,0269	10,01
Institutional Ownership	161	,5239845	,3060216	,0167	1
Board tenure	161	6,196012	3,64086	0,5	20,5
Leverage	161	,5587819	,1704806	,1189991	,983498
Tangibility	161	,6554067	,2153256	,0795092	,983498
LN Total Asset	161	7,395759	1,704001	4,543189	14,71214
Total Asset (USD million)	161	21506,56	193194,6	93,99	2451316
GDP Growth	157	1,667452	2,931533	-9,1	26,276
ROA	161	,0214302	,085832	-,4996561	,2551253
ROE	161	-,0020291	,5195749	-2,74362	2,355556

The effective usage of assets provide the advantage of shareholders. Higher return on assets (ROA) represents the effective usage of company assets in serving the economic interests of its shareholders. ROA is averagely 0,021 in this sample. Return on equity (ROE) is a performance measure for corporate stakeholders and it is suitable both short and long term for investors. ROE is a measure that investor calculates how much profit can be generated by the firm, using the money invested from its shareholders. ROE is averagely -0,002.

3.4.2. Correlation Matrix

Table 11 shows correlation for all the variables in the model. Controlling the correlation matrix a high positive and significant correlation is observed between ROE and ROA. (0,69). According to correlation table, board size (-0,25) and gender (-0,23) are negatively and weakly correlated with board age.

Board age (0,31) and ownership concentration (0,18) are positively correlated with independence directors. Gender (0,17) and year are positively correlated with each other.

Over the years, the number of women on the governing board has increased. Independence directors (-0,38), audit committee size (-0,35), board tenure (-0,18) and leverage (-0,20) are significant and negatively correlated with board size. Board size (0,33) and tangibility (0,29) are significantly positive correlated with logarithm of total assets. Board age (0,56), leverage (0,19) and logarithm of total assets (-0,18) are significantly related with board tenure. Board independence (-0,30), audit committee size (0,23), board tenure (0,18), ownership concentration (-0,17), leverage (0,28), GDP growth (0,20) and ROE (-0,24) are significantly correlated with CEO duality. Board tenure (-0,16), leverage (0,24), tangibility (0,36), logarithm of total assets (0,34) and ROA (-0,16) are significantly correlated with women on board. Independence directors (-0,19), audit committee size (-0,17), ROA (-0,29) and ROE (-0,22) are significantly correlated with tangibility. Ownership concentration (-0,34), tangibility (-0,27) and firm (-0,27) are significantly correlated with institutional ownership. Leverage (-0,29), GDP growth (0,35) and firm (-0,16) are significantly correlated with ROA.

Positive and significant correlation is observed between major ownership and ownership concentration (0,16). Positive and significant correlation is observed between firm and GDP growth (0,16). Negative and significant correlation is observed between ROE and leverage (-0,29).

Table 11: Correlation Matrix

	Year	Board size	Board age	Duality	Independence	Gender	A.C. Size	Board Tenure
Year	1,000							
Board size	-0,006	1,000						
Board age	0,1129	**-0,2495***	1,000					
Duality	0,0032	0,0722	0,0018	1,000				
Independence	0,0204	**-0,3792***	**0,3165***	**-0,3005***	1,000			
Gender	**0,1755***	0,0191	**-0,2296***	-0,0259	-0,1525	1,000		
A.C. Size	0,0231	**-0,3521***	-0,0768	**-0,2348***	-0,1131	-0,1087	1,000	
Board Tenure	0,1503	**-0,1798***	**0,5553***	**0,1760***	0,1272	**-0,1588***	-0,0109	1,000
Ownership	0,1473	-0,0019	0,1046	**-0,1718***	**0,1829***	0,0350	-0,0324	0,0160
Major	0,0884	0,0150	-0,0039	-0,0830	0,0511	0,0591	-0,0419	-0,0148
Institutional	0,0467	-0,0182	-0,0310	0,1021	0,0906	0,0592	0,0807	0,0504
Leverage	-0,0561	**-0,1963***	0,0195	**0,2846***	0,0274	**0,2368***	0,0433	**0,1886***
Tangibility	0,0764	0,0445	-0,1008	0,0714	**-0,1942***	**0,3576***	**-0,1742***	-0,0206
LN Total Assets	-0,0228	**0,3293***	-0,1507	0,0333	-0,1331	**0,3362***	-0,0931	**-0,1765***
GDP Growth	0,1499	-0,0033	-0,0033	**0,1981***	0,0121	0,0295	0,0211	0,1086
ROA	0,1187	0,1184	0,0795	-0,1051	-0,0286	**-0,1575***	0,0815	0,0889
ROE	0,0015	0,1163	-0,1292	**-0,2425***	-0,0666	0,0701	0,0685	-0,1435
Firm	0,0000	-0,0567	0,0461	0,0336	0,1402	0,0366	-0,0888	0,0593

	Ownership	Major	Institutional	Leverage	Tangibility	LNTotal Assets	GDP	ROA	ROE
Ownership	1000								
Major	**0,1644***	1000							
Institutional	**-0,3417***	-0,0395	1000						
Leverage	0,0735	0,0471	0,0381	1000					
Tangibility	0,1398	-0,0290	**-0,2731***	0,1422	1000				
LNTotal Assets	0,0289	0,0542	-0,1360	-0,0398	**0,2924***	1000			
GDP Growth	-0,1070	-0,0319	-0,0927	-0,1434	-0,0075	-0,0015	1000		
ROA	-0,0452	0,0147	-0,0225	**-0,2933***	**-0,2856***	-0,1354	**0,3520***	1000	
ROE	-0,0594	0,0101	0,0193	**-0,2912***	**-0,2210***	-0,0646	0,1241	**0,6931***	1000
Firm	-0,0286	-0,0777	**-0,2731***	0,0536	-0,0444	0,1288	**0,1583***	**-0,1608***	-0,1178

ROA: Net income / Total assets; ROE: Net income / Total Shareholders' Equity; BOARD SIZE: Number of inside and outside directors on the board; BOARD AGE: Average age of all directors on the board; DUALITY: Chairman also holds the position of CEO; INDEPENDENCE: Number of non-executive directors on the board; GENDER: Number of women present on the board; A.C. SIZE: Number of members serving on the audit committee; BOARD TENURE: Number of years of experience in the board of a given company; OWNERSHIP: Percentage share held by major shareholder; MAJOR: Percentage share held by two major shareholders; INSTITUTIONAL: Percentage share held by institutional ownership; LEVERAGE: Total Liabilities / Total Assets; TANGIBILITY: Total Long-Term Assets / Total Assets; LNASSETS: natural log of total assets GDP: Annual growth rate of gross domestic product per capita

3.4.3. Evaluation of Panel Regression Results

Two separate regression analyzes were used because they were used as dependent variables (ROA and ROE) representing the company financial performance. In both regression analyze, the board structure and control variables were used as explanatory independent variables. In the panel regression analysis used, the choice between fixed effects and random effects is based on the Hausman test. In this study, the Hausman test was used to decide which of the static linear panel data models would be preferred. Eight models were used to each dependent variable totally.

When the results of panel regression analysis are examined, there is no significant relationship between board structure variables representing board size, board age, CEO duality, independent directors, audit committee size and board tenure and firm financial performance (ROA). There is no relationship between ownership concentration, major shareholders and tangibility variables and ROA. When it is looked ROE results, no significant relationship between board structure (board age, CEO duality, independent directors, audit committee size and board tenure) and firm financial performance (ROE). There is no relationship between ownership structure, major shareholders, institutional ownership, tangibility, total assets, GDP growth and ROE. The results are similar for both dependent variables.

Gender variable is negatively significant in ROA model 2 (-1,83), model 6 (-2,03) and model 7(-1,85) and model 2 (-2,15), model 3(-2,02) in ROE. Although the significantly does not hold in all models, the coefficient are found as negative. This finding is inconsistent with Konrad et al., 2008; Ghani and Barrett, 2014; Campbell and Vera, 2009; Virtanen, 2012; Carter et al., 2003; Luckerath-Rover, 2011; Byrness et al., 1999; Barber and Odean, 2001; Levi et al., 2008; Pelled et al., 1999;Dutton and Duncan, 1987. This finding is also consistent with Adams and Ferreira, 2009; Tacheva and Huse, 2006; Akpan and Amran, 2014; Bohren and Stom, 2007; Bar et al., 2008; Darmadi, 2011 and Minguez-Vera and Martin, 2011. Impacts of gender on financial performance have not examined in shipping literature as far as detected. As seen on the table 12, the ratio of independence women on boards to women on boards is 64 % and insider women to women

on boards is 36%. This result might be due to the fact that some women members who appear independent are linked to board members and are assumed to have joint decisions, which negatively impacts financial performance. For example, one of the companies in the sample, a woman member who appears to be an independent director, is the wife of the chairman of the board. It is thought that the independent female members in the sample are from the family and linked to the inside members. It is mentioned in the literature that non-family members and non-insider members provide the company with differences and diversity. So independent members who are truly independent expected to increase the firm financial performance. According to Minguez-Vera and Martin (2011), women members may apply strategies that are less risky than male members, which may cause performance to decline. Darmadi (2013) found a negative effect of female directors on both ROA and Tobin`s q using public firms listed on the Indonesia Stock Exchange. There are more female members in the management board of small firms controlled by the family in the sample. This might be result of negative effect on the sample.

The hypothesis 6 is not accepted. As the number of gender increases, ROA and ROE decreases. Agency theory and resource dependency theory support the presence of women in the board. According to agency and resource dependency theory, as the number of women on boards increase, firm financial performance increases. The knowledge and experience of women is different from knowledge and experience of man. Different perspectives provide the right decision. But this finding does not coincide with theories according to this research in shipping companies.

Table 12: Information about women on board (%)

Independent women	**Insider women**
0,638365	0,361635

There is a positive and highly significant relationship board size and ROE. Board size is consistent in all models of ROE. In line with Shukeri et al., 2012; Adam and Mehran, 2003; Mak and Kusnadi, 2005; Kiel and Nicholson, 2003; Rechner and Dalton, 1991; Pfeffer, 1972; Zahra and Pearce, 1989; Lakhal, 2005; Chen et al., 2006; Jensen and

Meckling (1976); Andres and Vallelado (2008) and Daily and Dalton (2000). Larger boards are associated with better firm financial performance. Larger boards are more efficient in controlling and providing value creation of firms. Thanks to larger boards, a wide several of skills of board members ensure better decision making and controlling the performance. Agency theory and resource dependency theory support that larger boards induce higher financial performance. The results are in line with view of board size of agency theory and resource dependency theory. The hypothesis 1 is accepted. This shows that if the number of board size increases, ROA increases. This result is consistent with Andreou et al. (2014)'s study.

Board independence are negative and insignificant coefficient with financial performance in this study. This finding in shipping companies supports Bhagat and Black, 2002; Chen et al., 2006; Conger and Lawler, 2009; Haniffa and Hudaib, 2006's studies. Results of Bhagat and Black (2002)'s study showed that there was a significant and negative relationship between independent directors and firm performance. Their results support efforts by firms to experiment with board structures that depart from the conventional monitoring board. Chen et al., 2006; Conger and Lawler, 2009; Haniffa and Hudaib, 2006 found that a negative and significant relationship between board independence and firm performance. Conger and Lawler (2009) claimed that independent directors cannot approve decisions taken by strong board members as they lack company information. On the other hand, according to agency and resource dependency theory, as the number of independent director increases, firm financial performance increases and agency costs decrease. This finding is inconsistent with Randoy et al. (2003) and Syriopoulos and Tsatsaronis (2011). The result may differ from other studies in the shipping literature, depending on the time, countries and other specific factors.

Table 13: Panel Regression Results for ROA

Variables	Pred.	Dependent Variable: ROA T value							
		Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model8**
BOARD SIZE	+	1,06	---	0,76	-0,16	0,91	---	0,31	---
BOARD AGE	-	0,16	---	---	---	---	-0,63	---	-0,14
CEO DUALITY	-	---	---	---	---	-0,06	---	---	-0,28
INDEPENDENCE	+	---	---	-0,41	---	---	-0,49	---	-0,69
GENDER	+	-1,09	-1,83*	---	---	---	-2,03**	-1,85*	---
AUDIT COMMITTEE SIZE	+	---	---	---	-0,36	---	---	---	0,13
BOARD TENURE	+	---	0,07	---	---	---	---	0,14	0,96
OWNERSHIP		---	---	-0,02	---	-0,12	---	---	---
MAJOR SHAREHOLDERS		---	---	-0,38	-0,79	---	-0,71	---	---
INSTITUTIONAL OWNERSHIP		---	3,25***	---	2,93***	---	3,38***	3,00***	---
LEVERAGE		-3,34***	-3,85***	-3,62***	-3,93***	-3,51***	-3,80***	-3,85***	-3,58***
TANGIBILITY		-1,16	-0,59	-1,63	-0,76	0,115	-0,59	-0,63	-1,42
_cons		0,76	1,83	2,29**	1,13	2,49**	1,36	1,30	1,29
Within R2		0,1105	0,1780	0,0992	0,1615	0,0956	0,1910	0,1786	0,0889

*p < .10 **p < .05 ***p < .01

ROA: Return on Assets –Net income / Total assets; BOARD SIZE: Number of inside and outside directors on the board; BOARD AGE: Average age of all directors on the board; CEO DUALITY: Chairman also holds the position of CEO, taking the value 1 if chairman of board also holds the position of CEO; INDEPENDENCE: Number of non-executive directors on the board; GENDER: Number of women present on the board; AUDIT COMMITTEE SIZE: Number of members serving on the audit committee; BOARD TENURE: Number of years of experience in the board of a given company; OWNERSHIP: Percentage share held by major shareholder; MAJOR SHAREHOLDERS: Percentage share held by two major shareholders; INSTITUTIONAL OWNERSHIP: Percentage share held by institutional ownership; LEVERAGE: Total Liabilities / Total Assets; TANGIBILITY: Total Long-Term Assets / Total Assets

Table 14: Panel Regression Results for ROE

Variables	Pred.	Dependent Variable: ROE T value							
		Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model8**
BOARD SIZE	+	2,18**	2,47**	2,95***	2,02**	2,26**	2,12**	2,05**	---
BOARD AGE	-	---	---	-1,23	---	---	---	-1,07	---
CEO DUALITY	-	---	---	---	---	---	-1,41	---	---
INDEPENDENCE	+	---	---	---	-0,38	-0,23	---	---	---
GENDER	+	-1,32	-2,15**	-2,02**	---	-1,23	-1,44	-1,66	-0,99
AUDIT COMMITTEE SIZE	+	---	---	---	---	0,93	---	---	---
BOARD TENURE	+	-0,34	---	---	---	---	-0,20	0,16	---
OWNERSHIP		0,70	---	---	0,78	---	---	---	---
MAJOR SHAREHOLDERS		---	---	---	---	-0,12	---	-0,08	---
INSTITUTIONAL		---	0,76	---	0,39	---	0,92	---	---
LEVERAGE		-2,15**	-2,04**	-2,03**	-2,47**	-2,18**	-1,92*	-2,10**	-2,45**
TANGIBILITY		-1,00		-0,81	-1,48	-0,88	-0,76	---	-0,96
LNASSETS		-0,67	-0,59	-0,37	-0,77	-0,70	-0,53	-0,61	-0,31
GDP		---	-1,33	-1,42	-0,87	---	---	---	---
_cons		0,77	-0,07	1,22	0,83	0,12	0,47	1,19	2,15**
Within R2		0,1094	0,1332	0,1487	0,1079	0,1145	0,1177	0,1151	0,0449

*p < .10 **p < .05 ***p < .01

ROE: Return on Equity–Net income / Total Shareholders' Equity; BOARD SIZE: Number of inside and outside directors on the board; BOARD AGE: Average age of all directors on the board; CEO DUALITY: Chairman also holds the position of CEO, taking the value 1 if chairman of board also holds the position of CEO; INDEPENDENCE: Number of non-executive directors on the board; GENDER: Number of women present on the board; AUDIT COMMITTEE SIZE: Number of members serving on the audit committee; BOARD TENURE: Number of years of experience in the board of a given company; OWNERSHIP: Percentage share held by major shareholder; MAJOR SHAREHOLDERS: Percentage share held by two major shareholders; INSTITUTIONAL: Percentage share held by institutional ownership; LEVERAGE: Total Liabilities / Total Assets; TANGIBILITY: Total Long-Term Assets / Total Assets; LNASSETS: natural log of total assets GDP: Annual growth rate of gross domestic product per capita where headquarters of the companies are located.

There is a positive and highly significant relationship between institutional ownership and return on assets (ROA). This shows that if the shares of institutional owners increase, ROA increases. Institutional ownership is consistent in all models of ROA where the variables are used in line with Nesbitt (1994), Smith (1996), Del Guercio and Haukins (1999) and Cornett et al. (2007). Institutional ownership increases good corporate governance and in conjunction with it increases firm performance (Elysiani & Jia, 2010). According to Masulis et al. (2009), institutional ownership helps to enhance firm value. The rise of institutional ownership has a significant role in corporate governance. However, there was no clear answer in past studies that this role was positive or negative (Al-Najjar, 2015). According to Roundtable (1998), there is a positive relationship between institutional ownership and firm performance. High institutional ownership has three advantages. There are high proportion of economic benefits and cost effectiveness, low costs of coordinating management and finally avoiding difficult and costly sales (Federal Reserve financial economic roundtable, 1998; Chen et al., 2008). Agency theory supports the high shares of institutional ownership. According to agency theory, as shares of institutional ownership increase, firm financial performance increases. The results are in line with view of institutional ownership of agency theory.

There is a highly significant and negative relationship between leverage and firm financial performance indicators (ROA and ROE). Financial leverage is measured three different ways. There are short-term debt to total assets, long-term debt to total assets and total debt to total assets (Ebaid 2009; Zeitun & Tian 2007; Abor 2005; Abdullah 2005). This study used total debt to total assets (total debt (liabilities)/total assets) as a measure of financial leverage. The value reached as a result of calculating the leverage ratio shows that the assets are financed by debts. Lenders would prefer this ratio to be lower so that the high debt owner would increase the payment risk. Generally the financial leverage at ½ rate is considered normal. It is seen that the financial leverage ratio is 55% in this sample. So this ratio is acceptable. This finding is consistent with Weill (2003), Majumdar and Chhibber (1999), Javed et al. (2015), Jermias (2008), Raza (2013) Sunday (2012) and Gleason et al (2000). Leverage is found to be the major significant determinant of profitability in shipping sector. This might be due to the period of the study. The

continuation of the 2008 crisis and the post-crisis period may affect the relationship between financial leverage and firm financial performance. This shows that if leverage decreases, firm financial performance increases.

CEO duality negatively and insignificantly affects financial performance. According to agency theory, CEO duality may negative impact financial performance of the firm because of the difficulty of effective controlling with joint responsibilities of CEO and chairman (Rechner and Dalton, 1991; Tuggle et al. 2010; Bliss, 2011; Dalton and Dalton, 2011; Chen, 2011). In contrast, according to stewardship theory, CEO/Chairman duality may positive impact financial performance because of unification and integration for fast decision making (Peng et al., 2007; Mallin, 2007). This finding is consistent with Kalliopi and Pinelopi (2011) and inconsistent with Syriopoulos and Tsatsaronis (2012), Syriopoulos (2012) and Andreou et al. (2014).

Board age negatively and insignificantly affects two financial performance variables (ROA and ROE). Audit committee size, board tenure and ownership concentration insignificantly affect financial performance. Tangibility has negative and insignificant impact financial performance. Total assets and GDP growth rate have negative and insignificant impact ROE.

CONCLUSION

The research findings on the board structure and financial performance relationship are contradictory due to time, country, sector and company specific factors. Research that are focused on the shipping companies are limited. The shipping companies are generally private and family-owned firms. The board of directors is usually made up of family members. The public shares in shipping companies, which have more institutional ownership structure, have only recently increased (Syriopoulos, 2010). This study has been attempted to be developed on a more global data and for a longer period than previous studies.

When the results of the empirical research are examined, there is a significant and negative relationship between women on board and both financial performance variables. The effect of the number of women on financial performance was positively predicted. This result might be due to the fact that some women members who are independent are linked to insider board members and are assumed to have joint decisions, which negatively impact financial performance. It is observed that some independent female members in the sample are from the family and linked to the inside members. Additionally, many companies in the sample do not have women on the board. This finding supports Adams and Ferreira, 2009; Tacheva and Huse, 2006; Akpan and Amran, 2014; Bohren and Stom, 2007; Bar et al., 2008; Darmadi, 2011 and Minguez-Vera and Martin, 2011' studies for shipping companies.

There is a positive and significant relationship between board size and profitability. The results are in line with agency theory and resource based theory. Larger boards cause better firm performance in consequence of extensive variety of skills produce for preferable decision making and control the CEO performance (Shukeri et al., 2012; Adam and Mehran, 2003; Mak and Kusnadi, 2005; Kiel and Nicholson, 2003; Yasser et al., 2017). The finding is similar to the past studies and especially in shipping sector in this respect.

Board independence shows a negative relation with financial performance in this study. This finding in shipping companies supports Bhagat and Black, 2002; Chen et al.,

2006; Conger and Lawler, 2009; Haniffa and Hudaib, 2006's studies. Conger and Lawler (2009) claimed that independent directors cannot approve decisions taken by strong board members as they lack company information. On the other hand, according to agency and resource dependency theory, as the number of independent directors increase, firm financial performance increases and agency costs decrease. This finding is inconsistent with Randoy et al. (2003) and Syriopoulos and Tsatsaronis (2011). Randoy et al. (2003)' sample is from Norway and Sweden in the three-year period. The result may differ from other studies in the shipping literature, depending on the time, countries and other specific factors.

Institutional ownership highly significantly and positively impact profitability. As the shares of institutional ownership increase, shipping financial performance increases. The result is in line with agency theory and Nesbitt (1994), Smith (1996), Del Guercio and Haukins (1999) and Cornett et al. (2007)'s studies. Institutional ownership increases good corporate governance and in conjunction with it increases firm performance (Elysiani & Jia, 2010).

Leverage significantly and negatively impact profitability. This result is also in line with Weill (2003), Majumdar and Chhibber (1999), Javed et al. (2015), Jermias (2008), Raza (2013) Sunday (2012) and Gleason et al (2000) thus this finding supports that leverage negatively impact financial performance for shipping companies. Leverage is found to be major significant determinant of profitability for shipping sector. This might be due to the period of the study. The continuation of the 2008 crisis and the post-crisis period may affect the relationship between financial leverage and firm financial performance. This shows that if leverage decreases, shipping firm financial performance increases.

Limitations and Further Research

The sample of this study consists of 27 shipping firms and it examined only six years period. In further research, the sample of the study can be expanded and analyzed over longer periods. ROA and ROE are used as dependent variables in this study, however

in further research, the other financial performance indicators can be used as dependent variables.

This study didn't find any relation between board independence and financial performance. It is quite difficult to measure whether independent members actually act independently due to structures of the shipping companies. In further research, structure of independent directors can be examined in depth. The number of women in board of directors has increased in shipping companies over the last two years. It can be assumed that this change will be visible in the coming years as of the board structure. Thus this finding, which is negative, can be tested for long term in the coming years. For further studies, relationship between women on board and the financial performance in shipping companies may be analyzed since this relationship may differ with the ownership structure on the firm.

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