Corporate Governance and Bank Performance, Valuation, and Risk Evidence from the MENA Banking Sectors

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CORPORATE GOVERNANCE AND BANK PERFORMANCE, VALUATION, AND RISK EVIDENCE FROM THE MENA BANKING SECTORS

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Dedications

I dedicate this work to my family who provided me with all needed support and encouragement, which helped me to complete my study.

Abstract

Corporate governance plays a crucial role in increasing the access to external funding by firms, lowering cost of funding and boosting firm value, increasing operational performance, and decreasing financial crises risk. Moreover, sound corporate governance practices are essential to achieve and maintain public trust in banks in particular, where poor corporate governance can contribute to bank failures, which in turn poses significant macroeconomic consequences. Due to the important financial intermediation role of banks, the public have a high degree of sensitivity to difficulties arising from corporate governance deficiencies in banks. Consequently, the interrelation between corporate governance mechanisms and bank efficiency, valuation, and stability is still triggering more research, but until today, there is no consensus on the definite impact of the corporate governance frameworks on bank overall performance, and every study on this topic presents different results, which is attributed to the studied sample, covered period, and adopted empirical methodology.

This thesis participates in this continuous debate by studying a sample formed of the largest banks operating in the MENA region over the period 2011-2018. The MENA banks represent an interesting case study because: a considerable number of them are state-owned, a considerable number of them are Islamic banks, they are characterised by considerable high ownership concentration, they have low gender diversity, and a considerable number of them adopt a CEO-chairman role duality.

This thesis examines the impact of nine corporate governance variables (which fall under two main categories: ownership structure and board of directors' composition) on MENA banks' operational performance and efficiency (in chapter two), value (in chapter three), and risk and stability (in chapter four). Moreover, to detect if and how bank type (conventional or Islamic) shapes the relationship between corporate governance variables and the adopted dependent variables, where the sample under study is split between conventional and Islamic banks in the econometric estimations. Indeed, the obtained results reveal that the explanatory variables influence the two categories of banks differently. These results allow drawing several policy recommendations for MENA banks and for regulatory authorities regarding the optimal corporate governance structure that maximises operational performance, value, and stability.

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General Introduction

I. Background

Corporate Governance has several definitions. Nonetheless, among the most accepted definitions is that proposed by the OECD Principles of Corporate Governance (OECD, 2004): "*Corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. Good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders, and should facilitate effective monitoring*."

According to (Claessens, 2006), the definitions of corporate governance vary considerably but fall into two categories of definitions. The first category focuses on the behavioural patterns, i.e. the actual conduct of firms in terms of performance, efficiency, growth, financial structure, and how to deal with shareholders and other stakeholders. While the second category focuses on normative framework, i.e. the rules under which the firms operate, extracted from legal and judicial systems, financial markets, and factor markets (e.g. labour markets). An additional interesting explanation of corporate governance is proposed by (Mülbert, 2009) who states that corporate governance focuses on the decision-making at the board of directors and senior management levels, and the several internal and external mechanisms that guarantee that all the decisions taken by the senior management are indeed in line with the objectives of the firm and its shareholders.

The development of corporate governance over the past decades has led to the emergence of several Corporate Governance Theories, which help understanding the role played by directors in contributing to the performance of the organisation they administer (i.e. they govern). (Nicholson & Kiel, 2007) cite three main corporate governance theories: (1) Agency theory, (2) Stewardship theory, and (3) Resource Dependence theory.[1] These three theories focus on precise demographic variables in isolation, making links between "input variables", e.g. board composition to "output variables", e.g. board performance. Agency theorists focus on the link between board independence and leadership structure on one hand, and firm performance on

[1] Other studies add other ("less popular") theories, such as Stakeholder Theory, Transaction Cost Theory, and Political Theory.

the other. Stewardship theory concentrates on the proportion of insider directors to examine the links with corporate performance. Resource dependence theory investigates the association between director interlocks and several aspects of firm performance or conduct. (Nicholson & Kiel, 2007) and (Beritelli, Bieger, & Laesser, 2007) illustrate the nature of each theory as follows:

- Agency theory is concerned with the alignment of the interests of firm owners (shareholders) and directors, and is based on the statement that there is an essential conflict of interest between owners and management, which is resulted mainly from the separation of ownership and control in the firm. Moreover, agency theory states that managers possess superior expertise and knowledge to the firm's owners and therefore, are in a position to seek self-interested decisions and actions at the expense of the owners.
- Stewardship theory postulates that directors are basically trustworthy individuals and thus, they are good stewards of the resources under their control. Moreover, since the inside directors spend long working days and hours in the firm they run, they understand the business more than the outside directors, which allow them to make better decisions. Advocates of stewardship theory argue that a superior corporate performance is linked to a majority of inside directors as they work to maximise shareholders wealth.
- Resource dependence theory states that the board of directors represents a crucial link between the company and the resources it needs to maximise its performance. This theory focuses on the role of the board in providing access to the needed resources and claims that managers play an essential role in securing the resources to the firm. Eventually, the provision of these resources enhances the organisational functioning and the firm's performance.

Effective corporate governance practices are essential to achieve and maintain public trust and confidence in firms in general and in banks in particular, which are critical to the proper functioning of the banking sector and the economy as a whole. It has been argued that poor corporate governance can contribute to bank failures, which in turn poses significant macroeconomic consequences due to their impact on the deposit insurance system and the broader economy. Besides, poor corporate governance can lead to a loss in confidence about the ability of a bank to properly manage its assets and liabilities, including deposits, which

could in turn trigger bank run. Thus, due to the important financial intermediation role of banks in an economy, the public and the market have a high degree of sensitivity to difficulties arising from corporate governance deficiencies in banks. The complexity of the banking business increases information asymmetry and weakens stakeholders' ability to monitor bank management's decisions. Despite the fact that this information asymmetry is found in all firms and sectors, the problem arising for financial intermediaries may be amplified by the complexity of banking business, where banks have the ability to take on risk very quickly, which may not be immediately visible to outsiders.

The economic and financial events that took place during the past two decades influenced economic and financial markets developments and alerted the authorities to the importance of maintaining efficient corporate governance mechanisms. Besides, bank governance has become a prominent issue since the collapse of hundreds of banks worldwide during and following the international financial crisis of 2007-2008.

Banks are subject to more regulation than other firms in order to safeguard depositors' interest, guarantee the stability of the payment system, and reduce systemic risks. Bank supervisors have a paramount interest in sound bank corporate governance as it is an essential element in the safe and sound functioning of banks. As such, banks are subject to dual monitoring and oversight: one by the regulatory agencies, and the other by the bank board. The monitoring of regulators provides an alternative governance mechanism, where effective supervision can work as complementary factor for good governance. Banks have unique characteristics that impact, and interact with, corporate governance mechanisms (John, De Masi, & Paci, 2016). Specifically, potential conflicts of interest between shareholders and debtholders, complexity and opacity of bank activities, in addition to banking regulation, make bank governance specific. While banks recognise governance challenges like other firms, they have unique characteristics that might intensify these challenges and lessen the effectiveness of governance mechanisms. (de Haan & Vlahu, 2016) argue that banks differ from non financial firms due to: (1) regulation, (2) the capital structure of banks, and (3) the complexity and opacity of their business and structure.

The considerable interrelation between bank governance and bank regulation is also highlighted by (Levine, 2004) and (Laeven, 2013) who identify three main corporate governance mechanisms that could be restricted by regulations: (1) ownership controlling and

concentration, (2) corporate control, and (3) debtholders' monitoring. (de Andres & Vallelado, 2008) state that banking regulation prevents many corporate governance problems, however, even though regulation could be considered as additional bank corporate governance mechanism, it lessens the effectiveness of other mechanisms, e.g. restrictions on bank ownership, restricting activities allowed to banks, or applying limits on competition.

From macroeconomic perspective, the importance of corporate governance is emphasised by (Claessens, 2006) who highlighted several channels through which corporate governance influence economic growth and development: (1) it increases access to external funding by firms, which leads to more investment, growth, and job creation; (2) it lowers cost of funding and boosts firm value, providing more attractive investments to investors and leading to more growth and employment; (3) it boosts operational performance through a better allocation of resources and better wealth-creating management; and (4) it lessens financial crisis risk, which imposes considerable economic, financial, and social costs. Regarding the last point in particular, (Dermine, 2013) show that the government-led resolutions of the repercussions of the 2007-2008 international financial crisis have been very costly, where for instance, the gross government debt-to-GDP ratio of the OECD entirely increased by more than 20% between 2008 and 2011.

II. Corporate governance: International standards

Due to the importance of bank corporate governance, the Basel Committee on Banking Supervision published an initial guidance on this subject in 1999,[2] with a revised version in 2006.[3] The Committee's 2006 guidance was based on the principles of corporate governance published by the OECD in 2004. The OECD Principles state that good corporate governance should provide proper incentives for the board and management to pursue objectives that are in the interests of the company and its shareholders and should facilitate effective monitoring. Basel Committee's 2006 guidance tackled key issues of corporate governance, such as:

- That the board should be appropriately involved in approving the bank's strategy.
- Clear lines of responsibility should be set and enforced throughout the organisation.

[2] Basel Committee on Banking Supervision, 1999. Enhancing Corporate Governance for Banking Organisations.

[3] Basel Committee on Banking Supervision, 2006. Enhancing Corporate Governance for Banking Organisations.

- Compensation policies should be consistent with the bank's long-term objectives.
- The risks generated by operations that lack transparency should be adequately managed.

Following Basel Committee's 2006 guidance, there have been a number of corporate governance failures and lapses, mainly during the international financial crisis, which pushed the Committee to review its 2006 guidance. In October 2010, a third revised version was issued.[4] The key areas where the Committee dedicated the greatest focus in its latest guidance were: (1) Board practices, (2) Senior management role, (3) Risk management and internal controls, (4) Compensation practices, (5) Complex or opaque corporate structures, and (6) Disclosure and transparency. In the following, we cite some of principles of Basel Committee's 2010 guidance that are relevant to our study (as they are written in the guidance).

In parallel, the Basel Committee on Banking Supervisors formulated specific recommendations for bank governance. The first Basel Principles were published in 1999 and significantly updated in 2006. In both cases, the Committee sought to complement the OECD Principles with what were believed to be specific governance requirements for banks. The Basel Committee also published a separate framework for internal control: the 1999 version put much emphasis on shareholders; the 2006 revision recognised the need to protect depositors and other creditors but came too late; and well established principles, such as those on internal control, were not sufficiently applied. The Basel Committee incorporated lessons from the crisis in a further update of the Principles (Basel Committee, 2010).

A. Board practices

The board has overall responsibility for the bank, including approving and overseeing the implementation of the bank's strategic objectives, risk strategy, corporate governance and corporate values. The board is also responsible for providing oversight of senior management. (Principle 1)

[4] Basel Committee on Banking Supervision, 2010. Principles for Enhancing Corporate Governance.

In discharging these responsibilities, the board should take into account the legitimate interests of shareholders, depositors and other relevant stakeholders. It should also ensure that the bank maintains an effective relationship with its supervisors.

B. Board Qualifications

Board members should be and remain qualified, including through training, for their positions. They should have a clear understanding of their role in corporate governance and be able to exercise sound and objective judgment about the affairs of the bank. (Principle 2). The bank should have an adequate number and appropriate composition of board members. Independence can be enhanced by including a large enough number of qualified nonexecutive members on the board who are capable of exercising sound objective judgment.

C. Board's own practices and structure

The board should define appropriate governance practices for its own work and have in place the means to ensure that such practices are followed and periodically reviewed for ongoing improvement. (Principle 3)

C.1 Organisation and functioning of the board

The board should structure itself in a way, including in terms of size, frequency of meetings and the use of committees, so as to promote efficiency, sufficiently deep review of matters, and robust, critical challenge and discussion of issues. In order to achieve the needed objectivity, membership should be composed of non-executives and to the extent possible, a majority of independent members.

C.2 Role of the chair

To achieve appropriate checks and balances, an increasing number of banks require the chair of the board to be a non-executive, except where otherwise required by law. Where a bank does not have this separation and particularly where the roles of the chair of the board and chief executive officer (CEO) are vested in the same person, it is important for the bank to have measures in place to minimise the impact on the bank’s checks and balances of such a situation.

D. Audit committee

For large banks and internationally active banks, an audit committee or equivalent should be required. The audit committee typically is responsible for the financial reporting process; providing oversight of the bank's internal and external auditors; approving, or recommending to the board or shareholders for their approval, the appointment, compensation and dismissal of external auditors; reviewing and approving the audit scope and frequency; receiving key audit reports; and ensuring that senior management is taking necessary corrective actions in a timely manner to address control weaknesses, non-compliance with policies, laws and regulations and other problems identified by auditors. In addition, the audit committee should oversee the establishment of accounting policies and practices by the bank.

E. Controlling shareholders

Where there are controlling shareholders with power to appoint board members, the board should exercise corresponding caution. In cases where there are board members appointed by a controlling shareholder, the board may wish to set out specific procedures or conduct periodic reviews to ensure the appropriate discharge of responsibilities by all board members.

III. Research motivations, objectives and significance

The "first wave" of corporate governance in the MENA region occurred in early 2000, which was motivated by several reasons, and the implementation of sound corporate governance practices became priority for the regional regulators and banks, and triggered the issuance of national corporate governance rules and standards. The early corporate governance initiatives undertaken by two MENA countries (Egypt and Oman) motivated a regional trend, where between 2005 and 2009, eleven codes of corporate governance were introduced by MENA regulators, with special guidance for banks, state-owned enterprises, and family-owned firms. Afterwards, several voluntary recommendations have been incorporated into the regulatory and legislative frameworks of these countries. While the early bank corporate governance laws in the MENA focused on board of directors' composition and disclosure requirements, the MENA bank supervisors imposed over the past thirty years additional regulations concerning other aspects, such as: (1) board membership, (2) executives' remuneration, (3) the roles and

responsibilities of shareholders, (4) board committee, (5) the role of external audit, and (6) disclosures.

The above cited six managerial and ownership dimensions form major foundations of the adopted corporate governance, which shows how MENA banks are run by management and supervised by shareholders. Consequently, the adoption of these factors is expected to have direct impact on the banking institutions in terms of performance, efficiency, valuation, riskiness, and stability. This indeed is of great concern for bank regulators and supervisors, bank management, bank shareholders, bank employees, and other stakeholders.

Consequently, detecting the association between the adoption of sound corporate governance mechanisms and the performance, valuation, and stability of banks, has provoked a considerable body of theoretical and empirical literature, on the developed and the developing countries. The findings of these studies reveal a clear disagreement on the impact of corporate governance structures and mechanisms, particularly those related to board composition and ownership structure. In fact, studies on different markets, using different samples, and covering different period, disclose a considerable divergence in the relationship between: (1) board size, (2) board independence, (3) board gender diversity, (4) CEO-chairperson role duality, (5) the existence and the size of board committees, (6) ownership type, and (7) ownership concentration on one hand, and bank financial performance, market value, and risk and stability on the other hand.

This fact is still triggering more research on this topic. Consequently, this thesis aims at participating in this continuous debate by analysing the effect of the adopted corporate governance mechanisms and structures on the operational performance, valuation, and stability of a sample containing the largest MENA banks.

In addition to studying a unique dataset from an understudied region and exploiting nine corporate governance variables representing ownership and board characteristics, this thesis key originality is splitting the sample under study according to bank activity type: conventional and Islamic, which allows detecting if and how the impact of the adopted corporate governance variables differs between the two categories of banks.

The nature of banks and their macroeconomic importance make corporate governance weaknesses a very concerning matter. Hence, detecting – empirically – the linkages between corporate governance structures and mechanisms and bank performance and efficiency, value,

and risk and stability is important to allow MENA bank regulatory authorities formulating efficient corporate governance frameworks at the firm level and developing regulatory policies at the government level in order to realise more efficient allocation of resources, better financial intermediation, promote public accountability, create value, and minimise bank instability, and promote growth, development and employment,

IV. Research problem statement

The potential impact of corporate governance frameworks on firm performance (in all its dimension) has been subject to extensive detection and analysis for a long time, which increased considerably after the emergence of the international financial crisis of 2007-08.

Until now, there is still no agreement between the different studies on the impact of corporate governance frameworks on banks in particular, due to many factors, e.g. the studied sample (e.g. developed vs. developing countries), the covered period (e.g. before vs. after the 2007-08 crisis), the exploited corporate governance variables (e.g. individual vs. interaction variables), the implemented empirical methodology (e.g. panel data vs. time series econometrics), which resulted in large divergence in the outcomes of those studies. Regarding the studied samples or countries, the MENA region is among the under studied regions, due to different considerations. Despite the fact that this region has some similarities to other regions, it records several differences, which are related to – among other factors – the social and cultural dimensions, the prevailing institutional quality and governance, the adopted macroeconomic and business models, the regulatory and supervisory frameworks, the ownership of firms, and the corporate governance culture. This fact raises questions on how in such a group of countries corporate governance can shape the performance of their banks. Moreover, it is still not clear for such specific region, what is the *optimal* corporate governance framework that can maximise bank performance. In other words, can the data provide an indication on the board size and organisation and the ownership structure that result in better operational performance, risk control, and stock performance?

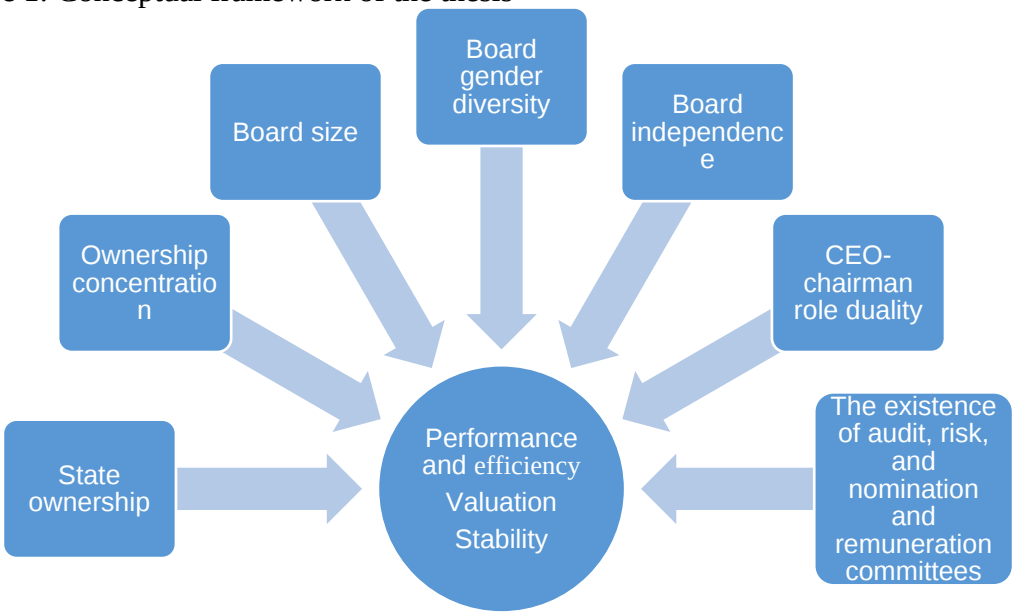
In parallel, another very interesting factor – related to the type of bank activity – exists in large scale in the MENA region: Islamic banking. It is true that the MENA region does not monopolise this type of banking activity, which exists in many Eastern and Western Asian countries, but the MENA region possesses the largest Islamic banks worldwide, and the size

of Islamic banking in the GCC region in particular is by far larger than other regions. The influence of the interaction between bank activity type and corporate governance factors has not been sufficiently studied in the MENA region where Islamic banks exist in every and each of its countries. While among the most important bank-specific factors is the type of bank activities, i.e. if the bank is conventional (i.e. interest-based) or Sharia-compliant (i.e. profit sharing-based), it is still unclear if corporate governance variables (e.g. ownership and board of directors' structures) may affect conventional banks and Sharia-compliant banks differently in terms of efficiency, valuation, and risk. This fact motivates conducting additional research that considers comparing corporate governance in conventional and Islamic banks.

V. Research conceptual framework

This thesis aims at testing the impact of the adopted corporate governance frameworks in the MENA region on bank performance and efficiency, value, and risk and stability. The relationship between the adopted corporate governance variables (the explanatory variables) and the performance and efficiency, value, and risk and stability variables (the explained variables) can be expressed by the following figure:

Figure 1: Conceptual framework of the thesis



VI. Research hypotheses

This study will propose the following hypotheses, which will be tested empirically:

In chapter two

Hypothesis 1: state ownership has a negative impact on bank performance.

Hypothesis 2: ownership concentration has a negative impact on bank performance.

Hypothesis 3: board size has a negative impact on bank performance.

Hypothesis 4: CEO-chairman role duality has a negative impact on bank performance.

Hypothesis 5: the percentage of independent board members has a negative impact on bank performance.

Hypothesis 6: board gender diversity has a positive impact on bank performance.

Hypothesis 7: the existence of audit, risk, and nomination and remuneration committees has a positive impact on bank performance.

In chapter three

Hypothesis 1: state ownership has a negative impact on bank value.

Hypothesis 2: ownership concentration has a negative impact on bank value.

Hypothesis 3: board size has a positive impact on bank value.

Hypothesis 4: CEO-chairman role duality has a negative impact on bank value.

Hypothesis 5: the percentage of independent board members has a negative impact on bank value.

Hypothesis 6: board gender diversity has a positive impact on bank value.

Hypothesis 7: the existence of audit, risk, and nomination and remuneration committees has a positive impact on bank value.

In chapter four

Hypothesis 1: state ownership has a negative impact on bank credit risk and a positive impact on bank stability.

Hypothesis 2: ownership concentration has a positive impact on bank credit risk and a negative impact on bank stability.

Hypothesis 3: board size has a negative impact on bank credit risk and a positive impact on bank stability.

Hypothesis 4: role duality has a positive impact on bank credit risk and a negative impact on bank stability.

Hypothesis 5: percentage of independent directors has a negative impact on bank credit risk and a positive impact on bank stability.

Hypothesis 6: board gender diversity has a negative impact on bank credit risk and a positive impact on bank stability.

Hypothesis 7: the existence of audit, risk, and nomination and remuneration committees has a negative impact on bank credit risk and a positive impact on bank stability.

VII. Thesis structure

This thesis is divided into a general introduction, four chapters, and a general conclusion as follows:

The General Introduction includes a brief background about corporate governance, the relevant international standards, in addition to the thesis' objectives, problem statement, significance, hypotheses, and structure.

The first chapter "Corporate Governance in the MENA Countries, Regulatory Framework and Adopted Structures", highlights the emergence of corporate governance in the MENA region, the corporate governance legal and regulatory framework in the MENA countries with specific focus on the laws and regulations, corporate governance codes, the main public regulators of corporate governance policies and governing agencies in the MENA countries, and the governance requirements for listed and Islamic banks. Moreover, the chapter discusses the regulatory standards concerning board of directors' compositions and structures in the MENA banks. Finally, chapter one presents the adopted corporate governance structures in the largest 100 MENA banks.

The second chapter "The Impact of Corporate Governance on MENA Banks Performance" detects empirically the impact of the nine variables shown in Figure 1 on the operational performance and efficiency of a sample of largest 100 MENA banks. The operational performance and efficiency are proxied by Technical Efficiency, ROA, ROE, and Cash Flows per share.

The third chapter "The Impact of Corporate Governance on MENA Banks Value" detects empirically the impact of the nine variables shown in Figure 1 on the value of a sample of

largest 77 publicly traded MENA banks. The bank value is proxied by Tobin Q, Market-to-Book ratio, Price-Earnings ratio, and Stock Returns.

The fourth chapter “The Impact of Corporate Governance on MENA Banks Stability” detects empirically the impact of the nine variables shown in Figure 1 on the stability of a sample of largest 106 MENA banks. The stability is proxied by LLP ratio, Z-Score, and Modified Z-Score.

The general conclusion summarises the findings of the thesis, presents the policy recommendations, in addition to highlighting the limitations of the study.

Chapter One: Corporate Governance in the MENA Countries, Regulatory Framework and Adopted Structures

1.1 Introduction

The corporate governance requirements put in place in MENA banks have evolved considerably over the past thirty years. Initially, these requirements had addressed corporate and banking laws, but today, regulators in the MENA region impose additional and more precise corporate governance requirements.

In order to provide a comprehensive overview of the development of, and the currently adopted, corporate governance frameworks in the MENA region, this chapter presents firstly the emergence and development of corporate governance in the MENA countries. Secondly, the chapter sheds light on the legal and regulatory frameworks governing corporate governance in every MENA country, with review of laws, codes and principles, in addition to listing the main corporate governance regulatory and governing agencies in these countries. The chapter also illustrates the corporate governance structures required for the MENA banks, concerning particularly board structure and composition in every MENA country. Finally, this chapter presents the actually adopted corporate governance in the largest 100 MENA banks, in order to (1) reveal the actual corporate governance practices in the MENA banks, and (2) allow making a comparison between requirements and implementations. One additional value added of this chapter is that it allows comparing the corporate governance legislative and regulatory frameworks in each MENA countries with the international standards and frameworks.

1.2 Emergence of corporate governance in the MENA region

The scope of banking laws in the MENA has generally been limited to regulating the boards' composition and focusing on disclosure requirements, where corporate laws generally addressed specifically shareholders rights and disclosures that must be provided to them. Over the past three decades, MENA central banks imposed additional regulations concerning the exact composition of bank boards, such as board committees, the number (or proportion) of non-executive and independent directors and many other relevant parameters.

Egypt was an "early bird" in corporate governance in the MENA region, when it launched economic reform programs in mid-1980s in order to attract foreign investments and liberalise trade. In this regard, Egypt announced its first corporate governance code for state owned enterprises in July 2006, shortly after the relevant OECD guidelines were issued in September

2005, and the codes for the Egyptian private sector were introduced in October 2005 (Braendle, 2012).

The "first wave" of corporate governance awareness in the MENA region occurred in early 2000 (Kolderstova, 2010). This wave was triggered by several motives, such as the aim to attract foreign investments and the development of the financial sectors in the region. Starting early 2000, the importance of sound corporate governance practices became a priority for both the regional regulators and the private sector. This first wave started with the issuance of corporate governance rules by the national regulators, and was coupled with the establishment of national corporate governance institutes. Particularly, Oman and Egypt were the pioneers in the region, and developed domestic governance codes in 2002 and 2005, respectively, based on the OECD Principles of Corporate Governance. These early initiatives motivated indeed a regional trend that gained momentum, when the majority of regulatory authorities in the region started introducing more advanced corporate governance standards. Between 2005 and 2009, eleven other codes of corporate governance were introduced by MENA regulators, alongside specialised guidance for banks, state-owned enterprises, as well as family-owned firms. The Lebanese Transparency Association and the Moroccan Corporate Governance Taskforce introduced specific guidelines for family-owned, small and medium-size enterprises. Similarly, the Jordanian, Palestinian and the UAE regulators introduced codes for banks. Over the years, voluntary recommendations have been incorporated into the regulatory and legislative frameworks of these countries. For instance, in Egypt, the board independence requirements were firstly postulated in the governance code, but was subsequently incorporated into the listing standards of the Egyptian Stock Exchange.

In parallel with the fast growth of banking and finance in the MENA region, the regulatory authorities undertook steps to develop the corporate governance practices adopted mainly by banks. Specifically, regulators have dedicated more focus on the following six major dimensions (Ghosh, 2018):

1. Board membership, including nomination, independence, qualifications, and conflicts of interest.
2. Executives' remuneration, including linking compensation to performance, and the mix of "fixed" and "variable" compensations.

3. The roles and responsibilities of shareholders, their participation in the general meetings and assemblies, voting rights, equitable treatment, and the responsibilities of institutional shareholders.
4. Board committees, including issues such as compensation, nomination, and internal audit.
5. The role of external audit, with focus on appointment, independence, and qualifications, in addition to possible sources of conflicts of interest.
6. Disclosures.

(Ghosh, 2018) adds that the reforms in each of these governance areas have not been uniform across MENA countries, with certain initiatives being statutory while others are either recommended, voluntary or even advisory.

Disclosure and transparency have captured explicit focus by MENA regulators in establishing national corporate governance frameworks. Its importance have been empirically found to be significant by (Abdallah, Hassan, & McClellanda, 2015) who recorded that GCC firms operating in the context of a better quality corporate governance environment disclose more risk than do their counterparts. These authors argued that this finding is consistent with theoretic arguments of agency, which state that information asymmetry diminishes with shareholders' tendency to monitor firm's top managers and getting higher quality of information. Nevertheless, there is still space for improvement in their corporate governance practices (Al-Tamimi, 2012).

The regulatory and supervisory authorities in the region have also actively incorporated corporate governance requirements in their prudential supervision approaches. According to (GOVERN-IFG/ESA, 2018), approximately half of the central banks in the MENA region have set up specialised corporate governance units that are responsible for the supervision of bank governance practices. For instance, in Bahrain, this unit oversights corporate governance in listed companies as well as banks. In Lebanon, the responsibility for bank governance is assigned to the Banking Control Commission.[5] Other MENA central banks also exercise governance oversight as part of its overall supervisory activities but without a dedicated staff or a department unit.

[5] The Banking Control Commission in Lebanon is an entity separate from the central bank.

It is worth to mention here that the corporate governance system in the MENA region is different from the Anglo-American and shows some similarities to the European model. It reflects some characteristics of organisation and control that apparent in developing countries (Piesse, Strange, & Toonsi, 2012). Specifically, compared to other jurisdictions, MENA banking regulators do not adopt approaches based on the proportionality and flexibility in corporate governance, such as depending on the size of the institution, or imposing additional requirements for systemically important financial institutions.

After shedding light on the emergence, development and spread of corporate governance in the MENA countries over the past thirty years, the following section highlights the MENA legal and regulatory frameworks concerning corporate governance, where the relevant laws, codes, and principles will be highlighted, in additional to explaining the role of the main public regulatory agencies that set corporate governance policies and monitor their proper implementation. Additionally, the following section will illustrate the additional corporate governance requirements for listed banks and Islamic banks.

1.3 Corporate governance legal and regulatory framework in the MENA countries

1.3.1 Laws and regulations

The MENA national supervisors of corporate governance use different mechanisms to oversee the adopted corporate governance frameworks. In this regard, the national authorities serve as regulators and custodians in the majority of countries, namely: Bahrain, Egypt, Jordan, Kuwait, Oman, Palestinian Authority, Qatar, and the UAE.[6] In the other countries, either private associations or a mix of custodian bodies exist (OECD, 2019).

Moreover, the adopted mechanism to implement the corporate governance frameworks varies among MENA countries. For instance, a complete "comply-or-explain" system[7] is

[6] Note that in the UAE, there are two different set of regulatory frameworks. One is the Federal regulatory framework and the other is specific to the Dubai International Financial Centre (DIFC).

[7] Under the "comply-or-explain" system, regulators specify a set of codes and principles that act as guidelines or standards for all firms. In the case when a firm decides not to apply any of these code or principle, it should provide an explanation about that to the regulator. If this explanation is considered sufficient, the firm is granted

implemented in Bahrain and Egypt. On the other hand, a mixed comply-or-explain/binding system is adopted in Kuwait, Palestine, Saudi Arabia, and the UAE-DIFC. Conversely, a binding system supported by laws and regulations is applied in Jordan, Oman, Qatar, and the UAE Federal. While Morocco, Tunisia and Yemen have adopted voluntary systems (GOVERN-IFG/ESA, 2018). Appendix A presents overview of company laws and securities laws, in addition to other relevant regulations in each MENA country.

1.3.2 Corporate governance codes, principles and frameworks in the MENA countries

1.3.2.1 General corporate codes and principles

Corporate governance codes in the MENA region provide a framework for the implementation of voluntary recommendations for sound corporate governance to firms, and a mechanism to disclose their compliance via comply-or-explain reporting mechanisms, required generally in company's annual reports. Nevertheless, some MENA countries do not have corporate governance codes, but adopt company laws or stock exchange listing requirements with a mix of binding and voluntary measures.

Table 1.1 presents the main corporate governance codes and principles adopted in each MENA country and their implementation mechanisms and Table 1.2 presents the additional corporate governance codes, guidelines and principles adopted in the MENA countries, with the last updating date.

Several important remarks can be obtained from Table 1.1. Firstly, it is obvious that MENA "Francophone" countries (Algeria, Egypt, Lebanon, Morocco, and Tunisia) adopt the same corporate governance implementation basis (Voluntary). Secondly, the GCC countries adopts similar implementation approaches (comply or explain). Thirdly, corporate governance codes in Algeria, Lebanon, Tunisia, and Yemen do not require disclosure in the annual reports regarding the implemented governance structures and practices. This may considered as weakness regarding transparency and disclosure standards. Finally, three countries mandate

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an approval, otherwise it becomes liable to penalties. This approach is adopted to give some flexibility to firms to adopt the most appropriate governance structures for their operations, which in turn would lead to better governance outcomes (Sarkar, 2015).

the surveillance to private sector entities (Algeria, Lebanon and Yemen – see Appendix B), while in the majority of other countries the surveillance is executed by two public sector regulators (central bank and securities regulator) such as Bahrain, Egypt, Morocco, Oman, Palestine and Qatar. Moreover, Table 1.2 reveals that corporate governance codes, guidelines and principles are not updated frequently in most of the MENA countries, where legislation have not been updated for more than ten years, which may call for the necessity of updating and modernising the adopted codes, standards and principles concerning corporate governance.

Table 1.1: MENA countries regulatory framework: Corporate governance codes and principles

Country	Corporate governance codes and principles	Implementation mechanism			
		Basis for framework	Approach	Disclosure requirement (in annual report)	Surveillance
Algeria	Algerian Corporate Governance Code	V	-	No	P
Bahrain	Corporate Governance Code	-	C/E	Yes	R & CB
	CBB Rulebook-High-Level Controls Module	-			
Egypt	The Egyptian Code of Corporate Governance 2016	V	C/E	Yes	R/SE/CB
Iraq	None	N/A	N/A	N/A	N/A
Jordan	Corporate Governance Directives for listed companies 2017	-	B	Yes	R
Kuwait	Issuance rules of Corporate Governance Regulated by Capital Markets Authority	-	B & C/E	Yes	R
Lebanon	The Lebanese Code of Corporate Governance	V [a]	-	No	P
Morocco	Moroccan Code of Good Corporate Governance Practices	V [b]	-	Yes	SE, R if listed & CB
Oman	Code of Corporate Governance for Public Listed Companies	-	B	Yes	SE & R
Palestine	Code of Corporate Governance in Palestine	-	B & C/E	Yes	SE & R
Qatar	Governance Code for companies and Legal Entities listed on the Main Market.	-	C/E	Yes [c]	R & SE
	Corporate Governance Code in the Venture Market	-		Yes [c]	
Saudi Arabia	Corporate Governance Regulations	-	B & C/E	Yes	R/SE
Tunisia	Code of Best Practice of Corporate Governance	V	-	No	SE
UAE DIFC	DIFC Market Law, General Module of the DFSA Rulebook	-	B & C/E	Yes	R
UAE Federal	UAE Corporate Governance Code	-	B	Yes	R
Yemen	Yemen Corporate Governance Guidelines	V	-	No	P

Source: (EBRD, 2013) , (OECD, 2014), (GOVERN-IFG/ESA, 2018) & (OECD, 2019). Abbreviations: Voluntary (V); Comply-or-explain (C/E); Binding (B); Securities regulator (R); Stock exchange (SE); Private institution (P); Central bank (CB). Notes: No = absence of a specific requirement or recommendation. N/A = not applicable. "-" = information not provided by the relevant country. [a] All banks operating in Lebanon MUST have a Corporate Governance Code, but it is not necessarily they adopt the Lebanese Code of Corporate Governance. [b] The implementation of the Moroccan Code of Corporate Governance is voluntary under the comply-or-explain basis, nevertheless, this Code is obligatory for banks. [c] Disclosure is required in the Shareholders Annual General Assembly and should be posted on the company's website.

Table 1.2: Other corporate governance codes, guidelines and principles

Country	Codes or Guidelines	Latest update
Algeria	Code for family owned enterprises and small and medium enterprises	N/Av.
	Guidelines for State-owned Enterprises	Under development
Bahrain	Corporate Governance for Financial Institutions by the Central Bank	2018
Egypt	Code of Corporate Governance for State-owned Enterprises	2006
	Capital Market Companies' Governance Directive	2007
	Code for Banks	2011
	Rules for Governance of Securities Companies	2007
	Guidelines for family owned enterprises	N/Av.
Iraq	Corporate governance banking code	2017
Jordan	Corporate Governance Instructions for Banks	2016
	Corporate Governance Directives for listed companies for the year 2017	2017
	Corporate Governance Code for Insurance Companies	2006
	Code for private shareholding companies, limited liability companies, non-listed public shareholding companies	N/Av.
Kuwait	Guidelines for Banks	2016 [a]
Lebanon	Code of Corporate Governance for Small and Medium-sized Enterprises b	2009
	Reference guidebook on corporate governance of family- owned enterprises	2009
	Code of ethics and whistle blower procedures for small and medium enterprises	2009
	Guidelines for family owned enterprises	N/Av.
Libya	No	N/Av.
Morocco	Code for family owned enterprises and small and medium enterprises	2010
	Code for State-owned Enterprises	2012
	Central bank circulars on governance of banks and credit institutions	2016
Oman	Code for Insurance Companies	2005
	Guidelines for Banks	2014
Palestine	Corporate Governance Code for Banks	2014
Qatar	Corporate Governance Rules for Banks	2015
Saudi Arabia	Regulatory Rules and Procedures issued pursuant to the Companies Law relating to Listed Joint Stock Companies	2017

	Guidance Note to the Regulatory Rules and Procedures issued pursuant to the Companies Law relating to Listed Joint Stock Companies	2017
	Principles of Corporate Governance for Banks Operating in Saudi Arabia	2014
	Insurance Corporate Governance Regulation	2015
	Code of Conduct for Insurance Companies	2008
Syria	Code for financial intermediaries	2008
Tunisia	Guidelines on Corporate Governance for the Banking Sector	2011
	Guidelines for State-owned Enterprises	2014
UAE DIFC	Code of Market Conduct	2015
UAE Federal	Code for Banks	2006
	Code for Real Estate Companies	2011
	Code for SMEs	2011
Yemen	Yemeni Governance Guide for Banks	2013
	Guidelines on corporate governance for family owned enterprises	2010

Source: (OECD, 2009)**,** (Kolderstova, 2010), (OECD, 2014) & (OECD, 2019). Notes: N/Av. = not available. [a] The latest update for the guidelines relevant to conventional banks was in 2012, whereas the latest update for Islamic banks was in 2016. [b] A voluntary code was launched by the Lebanese Transparency Association (LTA) and the Lebanese Corporate Governance Task Force (LCGTF) in the year 2006. [c] Dubai SME is a part of the Government of Dubai.

1.3.2.2 The main public regulators of corporate governance policies and governing agencies in the MENA countries

In most of the MENA countries, there is typically one main regulatory body for corporate governance. In this regard, securities or financial markets authority play the key regulator role in the majority of MENA countries (GOVERN-IFG/ESA, 2018), while in Bahrain, the central bank is the main regulator. (GOVERN-IFG/ESA, 2018) showed that in some MENA countries, it is not straightforward to identify the national public regulator of corporate governance policies, and in many cases there is a mix of regulators interacting (e.g. Egypt and Iraq). Appendix B presents the key national regulatory body concerning corporate governance in each MENA country. Moreover, the majority of MENA regulators have chosen a single set of banking corporate governance regulations, typically in the form of a corporate governance code. However, the Saudi Arabian central bank and the Moroccan central bank have issued, in addition to the corporate governance code, several additional regulations focusing mainly on compensations and risk management. Similarly, the central bank of Lebanon has taken a distinctive approach and issued several binding circulars focusing on governance, without issuing a single governance code.

The degree of difference of corporate governance recommendations varies indeed considerably among MENA countries. For instance, in Morocco and Lebanon the regulator left more flexibility to the board of directors. Conversely, in other countries (e.g. Saudi Arabia and Oman) the regulatory authorities are much stricter. More specifically, the central bank of Morocco delegated substantial responsibilities to the boards of directors in deciding their structure and operations, while the Saudi Arabian central bank specified in details the board requirements. Moreover, while some MENA regulators base their corporate governance general principles on the international standards proposed by Basel and/or OECD, others leave it to banks to decide their governance frameworks (OECD, 2019). In the first group of countries (e.g. Lebanon, Bahrain and the UAE), the regulatory authorities require banks to develop their own governance codes based on national corporate governance requirements. Those countries allow the board to determine the bank’s own governance structure and framework. Contrariwise, countries like Saudi Arabia, Kuwait and Oman adopt more rigid approaches and set specific governance requirements regarding board composition and its responsibilities.

A final note in this regard. In addition to the issued laws and regulations, a number of banking associations in the MENA region have issued additional governance recommendations and guidelines, such as in Jordan, Lebanon and the UAE. Additionally, the Moroccan Corporate Governance Commission has issued guidelines particularly for credit and financial institutions. However, these recommendations/guidelines are voluntary and intend to adopt a culture change in the national banking sectors.

1.3.2.3 Governance of listed banks

The implementation of corporate governance codes for listed companies in the MENA region has grown rapidly in recent years in parallel with the development of local financial markets and the considerable improvements in corporate governance frameworks for listed companies, mainly in the leading markets such as Saudi Arabia and UAE DIFC. This stresses the necessity of the consistency of securities regulator and banking governance requirements. In this regard, the Capital Market Authority in Saudi Arabia is an important regulator as its corporate governance guidelines are in most cases more detailed than the Saudi Arabian central bank recommendations (GOVERN-IFG/ESA, 2018). Despite the fact that all listed companies in Saudi Arabia follow the corporate governance guidelines, they still have a long way to go in the corporate governance and disclosure practices (Almoneef & Samontaray, 2019).

As stated by (OECD, 2014), a substantial number of corporate governance codes in the MENA region have been developed by the securities regulators, except in few counties such as Libya, where the code has been developed by the stock exchange. Alternatively, in Algeria, Lebanon, Morocco and Tunisia, corporate governance codes have developed as the result of multi-stakeholder consultation process, where for instance, in the three North-African countries, it was private sector or NGO-driven process. In general, in the MENA countries where corporate governance codes have not been developed by securities regulators or stock exchanges, they have a voluntary nature in contrary to the comply-or-explain approach. Therefore, bank guidelines, which have been developed by central banks often, apply in addition to the corporate governance code requirements, except in the UAE where corporate governance code excludes listed banks and State Owned Enterprises from its mandate.

In most MENA countries, listed banks are subject to the corporate governance regulations that apply to other listed firms. Nonetheless, in some counties, banking regulations apply alone, such as in Lebanon where the central bank is the sole regulatory authority over bank governance and in the UAE and Kuwait where banks are exempted from the adoption of corporate governance regulations related to listed firms. In many countries in the MENA, the majority of banks are publicly listed. This makes the corporate governance requirements applicable to listed companies equally applicable to banks. Similarly, the central bank of Lebanon remains the sole authority supervising bank corporate governance, while the recently developed requirements for listed companies do not apply to listed banks. A similar situation is also found in Morocco and Tunisia (GOVERN-IFG/ESA, 2018).

The main differences between corporate governance guidelines for listed banks and for other companies is due to the specific risks predominant in the banking sector. For instance, there has been a greater focus on the formation of board-level risk or credit committees in banks, which are generally not required by securities regulators for non-bank listed firms. Besides, regulatory authorities emphasise on “fit-and-proper” requirements for bank board members, and in many instances requiring their explicit approval by the central bank. It is worth noting that a number of securities regulators in the MENA region are very young institutions, where some of them, e.g. the Kuwaiti, the Syrian and the Lebanese capital market authorities, were established only in the past twenty years. Nevertheless, most capital market supervisors, mainly in the GCC, Morocco, and Egypt have extensive regulatory responsibilities and powers (OECD, 2014).

1.3.2.4 Governance of Islamic banks

Islamic banking and finance is basically underpinned by the Profit and Loss sharing (PLS) concepts, which bases on the adoption of Shariah legislations and the abolishment of interest based transactions. The PLS concept refers to “participatory transactions” mostly through the Mudharabah (profit sharing) and Musharakah (joint venture). In addition to the abolishment of interest, PLS is the main differentiating element between Islamic and conventional banking. In addition to the PLS products, Islamic banks also provided non-PLS products, consisting of debt-based contracts such as Murabahah (cost plus or mark-up concept), Bai Bithaman Ajil (deferred payment sale where the bank buys an asset and then resell it to the customer with a profit), and

leased-based contracts such as Ijarah (leasing contract between the bank and the customer), Bai Salam (forward-based contract) and Istisna (a contract based on commissioned, whereby one party promises to produce certain goods at a price determined now and the delivery will occur in the future) (Siddiqi, 2006).

Consequently, and due to the legal, operational, and structure particularities of Islamic banks, most regulatory authorities regulate them separately, through particular laws, regulations and circulars. On the other hand, other regulators see that Islamic banks' compliance with general corporate governance principles dedicated to conventional banks, is indeed sufficient. Regulatory authorities in Jordan, Lebanon, Kuwait, and Oman introduced in the recent years additional corporate governance guidelines dedicated for Islamic banks, where particular emphasis has been devoted to the board of directors and regarding the composition of the Sharia Supervisory Board (GOVERN-IFG/ESA, 2018). Therefore, in those countries, the Islamic banking regulations are required in parallel with the corporate governance code applied by conventional banks. Note that in the MENA countries the additional requirements for Islamic banks do not apply to foreign Islamic banks, with the exception of Oman where additional requirements apply also to the branches of foreign banks and Islamic windows of domestic conventional banks operating in the country.

The main difference in corporate governance requirements between conventional and Islamic banks is regarding the establishment of the Sharia Supervisory Board, as they represent a significant feature of Islamic banks and are considered as the "Supra Authority" and an additional "layer of governance" (Mollah & Zaman, 2015). Together with the boards of directors and the other operational committees, the Sharia Supervisory Board changes the Islamic banks governance into a ''multi-layer'' governance in contrasts with the ''single-layer'' governance structure of conventional banks. According to (Ajili & Bouri, 2018), the most distinctive corporate governance mechanism of Islamic banks from conventional banks is the Sharia Supervisory Board, which has three main roles: (1) consulting, for instance, the certification of permissible financial instruments and the calculation of due Zakah (the Islamic tax), (2) controlling, reviewing and supervising the bank's activities, and (3) ensuring the compliance of products and services offered to customers and investors with the rules and principles of the Islamic financial law. The size of this Supervisory Board has been proven to influence the performance of Islamic banks. For instance, (Farag, Mallin,

& Ow-Yong, 2018) showed that the larger the size of the Sharia Board, the better the financial performance of the Islamic bank and the lower the agency costs.

As shown in Table 1.3, the main features that regulatory authorities focus on in the governance structures of Islamic banks include mainly the formation of a Sharia Supervisory Board and the compliance with the Sharia Accounting and Auditing Standards. (GOVERN-IFG/ESA, 2018) surveyed the governance regulations by central banks in the MENA region and highlighted that all central banks – except the central bank of Kuwait – require the establishment of a separate Sharia Board. The central bank of Kuwait requires the existence of board expertise (which is equivalent to a board committee) with the capacity to oversee the Islamic banking activities. In Oman, the regulatory authority requires the establishment of a Sharia Supervisory Board, but it allows financial institutions of smaller size and less complexity to outsource this function, subject to the central bank's approval.

Regarding the oversight of the Sharia Supervisory Board, (AAOIFI, 2010) sates that the bank's board of directors is responsible for monitoring the Sharia risk and having a precise and comprehensive understanding of it and its impact on the bank and its objectives, and stakeholders. Moreover, the board of directors is accountable for establishing an efficient and effective organisational Sharia governance framework that adequately assesses and manages the Islamic bank's exposure to Sharia risk, and ensures the total compliance of activities with the Sharia. Additionally, (AAOIFI, 2010) recommends that the audit and governance committees assist the board of directors in overseeing and monitoring the Sharia compliance of the Islamic financial institution.

(Ginena, 2014) argues that The board of directors must ensure that a competent Sharia Supervisory Board is appointed, and recognise its independence in making its decisions and should not influence its resolutions, thereby compromising the Sharia Supervisory Board's independence and objectivity. The author adds that the board of directors should assess – on annual basis – the performance of Sharia Board members and resolve any issues involving possible conflicts of interest. Nonetheless, the board of directors may not dismiss any Sharia Board member without the approval of shareholders and possibly the regulator. (Almutairi & Quttainah, 2017) adds that to ensure their independence, the International Association of Islamic Banks prohibits members of

Sharia Supervisory Board from working in the banks they serve or being influenced by the bank's board of directors.

It is worth noting here, that the supervisory framework of Islamic banks in the MENA region has resulted in corporate governance structure that differ from those in other regions (Grassa & Matoussi, 2014).

Table 1.3: Governance guidelines for Islamic banks

Country	Separate Governance Guidelines for Islamic Banks	Scope of Guidelines	Key Differences with Framework for Conventional Banks
Bahrain	Yes	Applicable for all Islamic banks	Establishment of an independent Sharia Supervisory Board
Egypt	No	-	-
Jordan	Yes	Applicable for all Islamic banks except for foreign banks	Establishment of an independent Sharia Supervisory Board
Kuwait	Yes	Imposing additional requirements to those applicable by conventional banks	Establishment of a management level unit for Sharia Supervision. Board is required to develop knowledge about Islamic banking. Periodical Sharia internal and external auditioning
Lebanon	Yes	Imposing the additional requirements than those that apply to conventional banks	Establishment of a Sharia Auditing Unit and publishing a summary of the Consultative Body Implementation of a Sharia Auditing Unit
Morocco	No	-	-
Oman	Yes	Applies to full-fledged domestic Islamic banks, Islamic banking branches of foreign banks and Islamic windows of domestic conventional banks	Formation of Sharia Supervisory Board. Licensees have to maintain systems and controls which ensure Sharia compliance of their operations and business activities
Qatar	Yes	All Islamic banks	Establishment of an independent Sharia Supervisory Board. Reporting channels between the Sharia Supervisory Board, the Sharia Auditor and the Audit Committee
Saudi Arabia	No	-	-
Tunisia	No	-	-
UAE Federal	No	Islamic banks	Establishment of Sharia' Supervisory Board with minimum 3 members

Source: (GOVERN-IFG/ESA, 2018). Notes: "-" = information not provided by the relevant country.

The specific requirements imposed by MENA regulators on Islamic banks vary considerably among countries. For instance, while in Lebanon Oman, and Qatar there are requirements regarding the establishment of the Sharia Board, there are no requirements regarding the qualifications of its members. Conversely, in Jordan there are requirements for the two issues. In Kuwait, there are no requirements at all for these two points.

Finally, regarding the development of corporate governance practices in the MENA region, it seems that MENA Islamic banks lag behind other regions, despite their dominance in terms of assets and operations. (CIBAFI-World Bank, 2017) surveyed the corporate governance practices in Islamic banks worldwide, and created a Corporate Governance Index for those banks by focusing on six themes: (1) the Board of Directors; (2) Board Committees; (3) Internal Control and External Audit; (4) Risk Governance; (5) Sharia Governance; and (6) Transparency and Disclosure. The results of the Survey show that the East Asia and Pacific region had the highest score, with a score of 28.8, followed by South Asian region with a score of 24.4, and followed by MENA-GCC region with a score of 22.9, slightly above the global average (21.9). By contrast, the Sub-Saharan Africa recorded a score of 17.4 and the MENA-Non-GCC a score of 16.0, way below the global average.

Next, we highlight the regulatory standards concerning the structures and compositions of bank boards in each MENA country, with focus on the size, independence, committees, and gender diversity. A comprehensive comparison between the different standards adopted in the MENA countries will be performed.

1.4 The regulatory standards concerning board of directors compositions and structures in the MENA banks

1.4.1 International standards of board of directors composition and structure

The G20/OECD Principles on Corporate Governance (OECD, 2015) dedicated considerable focus to the responsibilities and roles of company board of directors (along with other five topics). In the Chapter titled “The responsibilities of the board”, (OECD, 2015) stated that:

"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."

The Responsibilities of the Board chapter presents seven standards regarding illustrating how board of directors should fulfil their duties.

Additionally, Basel Committee on Banking Supervision in its 2010 Document "Principles for Enhancing Corporate Governance" (BCBS, 2010), presented many Principles dedicated for the responsibilities of the board of directors. In the "Board Overall Responsibilities" Section, Principle 1 stated that:

"The board has overall responsibility for the bank, including approving and overseeing the implementation of the bank's strategic objectives, risk strategy, corporate governance and corporate values. The board is also responsible for providing oversight of senior management."

In Board Qualifications Section, Principle 2, "Composition", Basel Document stated that:

"The bank should have an adequate number and appropriate composition of board members… Independence can be enhanced by including a large enough number of qualified non-executive members on the board who are capable of exercising sound objective judgment…"

In Board's Own Practices and Structure, Principle 3, "Role of the Chair", Basel Document stated that:

"To achieve appropriate checks and balances, an increasing number of banks require the chair of the board to be a non-executive, except where otherwise required by law. Where a bank does not have this separation and particularly where the roles of the chair of the board and chief executive officer (CEO) are vested in the same person, it is important for the bank to have measures in place to minimise the impact on the bank's checks and balances of such a situation..."

In Board's Own Practices and Structure, Principle 3, "Board Committees", Basel Document stated that:

"To increase efficiency and allow deeper focus in specific areas, boards in many jurisdictions establish certain specialised board committees. The number and nature of committees depends on many factors, including the size of the bank and its board, the nature of the business areas of the bank, and its risk profile."

Then, the Document listed the following committees: Audit, Risk, Compensation, Nominations, Human Resources, Governance, Ethics and Compliance committees.

(BCBS, 2010) was updated by another Document issued by Basel Committee, titled "Corporate Governance Principles for Banks" (BCBS, 2015). This Document stressed the important role of the board of directors in its Principle 1 "Board's Overall Responsibilities" that:
"The board has overall responsibility for the bank, including approving and overseeing management's implementation of the bank's strategic objectives, governance framework and corporate culture."

In Principle 2, "Board Qualifications and Composition – Board Composition", the Document stated that:
"…the board should be comprised of a sufficient number of independent directors."

In Principle 2, "Board Qualifications and Composition – Board Member Selection and Qualifications", the Document stated that:
"The bank should have in place a nomination committee or similar body, composed of a sufficient number of independent board members…"

In Principle 3, "Board's Own Structure and Practices – Organisation and Assessment of the Board", the Document stated that:
"The board should structure itself in terms of leadership, size and the use of committees so as to effectively carry out its oversight role and other responsibilities…"

In Principle 3, "Board's Own Structure and Practices – Role of the Chair", the Document stated that:

"To promote checks and balances, the chair of the board should be an independent or non-executive board member. In jurisdictions where the chair is permitted to assume executive duties, the bank should have measures in place to mitigate any adverse impact on the bank's checks and balances…"

In Principle 3, "Board's Own Structure and Practices – Board Committees", the Document stated that:

"To increase efficiency and allow deeper focus in specific areas, a board may establish certain specialised board committees…The number and nature of committees depend on many factors, including the size of the bank and its board, the nature of the business areas of the bank, and its risk profile."

Then, the Document listed the following committees: Audit, Risk, Compensation, Nominations, Human Resources, Governance, Ethics and Compliance committees.

Based on the above, and due to the absolute importance of these parameters, we shall shed light on the structure, size, tenure, mandate, and appointment of board of directors in the MENA countries.

1.4.2 Board size and structure/composition in the MENA banks

Board-level criteria in the MENA region has been the centre of the corporate governance regulatory standards established by the regulatory authorities. Bank board composition requirements set by the MENA central banks highlight a substantial variety in the adopted approaches, more than in the standards set by the securities. While MENA securities regulators tend to require that a third of companies' boards be independent and that the majority be non-executives, the requirements for banks tend to vary more broadly. Some MENA central banks (e.g. in Lebanon and Morocco) refer to international guidelines of corporate governance (i.e. Basel Committee Guidelines) and embrace approaches allowing banks to select the appropriate number

of non-executive and independent directors. In other countries (e.g. Egypt and Tunisia) the central banks are less prescriptive generally and to board composition specifically regulators (GOVERN-IFG/ESA, 2018).

The nomination of board members in MENA banks is subject to "fit-and-proper" standards. Several central banks (e.g. Saudi Arabia central bank) require to be notified immediately of any dismissal or resignation of board members. Note that the "fit-and-proper" requirements are defined loosely in most MENA countries and are generally limited to board members having good reputation.

Different types of board structures are found in the MENA region. Despite the fact that one-tier boards are the most common, an increasing number of countries give the choice of adopting two-tier boards. Regarding the required board of directors' size, it is noticed that it varies considerably across the MENA region. For instance, the minimum size ranges from 3 to 5 members (e.g. Algeria), whereas the maximum size varies between 9 (e.g. Iraq) and 15 (e.g. Morocco and Bahrain). Regarding the maximum term, board members can sit from 3 to 6 years in many countries, while no particular requirements about that are set in Egypt, Kuwait and the UAE DIFC. The mandate of board members is renewable in several MENA countries, but in some of those countries board size and mandate requirements differ for specific companies (such as banks and non-listed firms) and some legislations might require board members to be also shareholders (e.g. Morocco). In the following, we present details about the structure, size, and mandate of MENA banks' board of directors. The information are extracted mainly from (Braendle, 2012) & (OECD, 2019):

- **Algeria:** the board structure is one tier. The board of listed companies consists of 3 to 12 members.[8] Besides, the board should own at least 20% of the equity.
- **Bahrain**: the board structure is one tier. The composition and term of boards in listed companies are stated by the company's articles of association. The number of members of the board should be at least 5 and the length of membership should not exceed 3 years (renewable though).

[8] Unless in the cases of mergers and acquisitions, the number can be raised to 24 members for a period not exceeding six months.

- **Egypt**: the board structure is one tier. Boards in Egyptian companies are generally large (normally comprised of 9 members). There are no legal requirements for having independent board members.[9]
- **Iraq**:[10] the board structure is one tier. The board should be formed of 5 to 9 members. There are no requirements on the separation of chairperson and CEO roles, or the participation of non-executive or independent board members.
- **Jordan**: the board of listed companies is one-tier, while the board for banks is a two-tier system. All board members are required to be shareholders. At least one third of the board members in listed companies should be independent. Moreover, the roles of chairperson and chief executive officer should be split.
- **Kuwait**: the board structure is one and two tier. Board of directors for listed companies are one tier. The Corporate Governance regulations (issued by capital markets authorities) include recommendations on board composition and responsibilities and its committees.[11]
- **Lebanon**: the board structure is one tier. Boards of listed companies are one tier with a size between 3 and 12 members. The Board appoints one of its members as Chairperson-General Manager and may include executive directors. Banks regulated by the central bank are subject to tighter provisions, e.g. the obligation to appoint independent board members.
- **Morocco**: the board structure is one and two tier. In the one tier system, the role of chairperson and chief executive officer can be combined. Board members are required to be shareholders and there is no legal requirement to have independent board members, except for banks. The Code of Corporate Governance recommends that boards in listed companies should comprise a majority of non-executive members.
- **Oman**: the board structure is one tier. The Corporate Governance Code requires boards to comprise non-executive and independent members. The board size should be between 5 and 12. Moreover, the Code requires a one-third of board members to be independent.

[9] However, it is recommended by the code of corporate governance the existence of a majority of independent non-executive members on the boards.

[10] There is still no corporate governance code in Iraq.

[11] The Companies Law increased the minimum number of board members to 5 and included specific provisions regarding – among other issues – board nomination and mandates.

- **Palestine:** the board structure is one tier. The total number of board members is between 5 and 11.
- **Qatar:** the board structure is one tier. The boards should include executive, non-executive and independent members. Board size of listed companies should be between 5 and 11 members. Besides, at least one third of the board members should be independent and the majority should be non-executives.
- **Saudi Arabia:** the board structure is one tier. Boards of listed companies must comprise between 3 and 11 members, and the majority must be non-executive. Moreover, 2 or 1/3 of the members, whichever is greater, must be independent.
- **Syria**: the regulations do not provide particular guidelines for the structure of the board. Nevertheless, the board size may not be less than 3, and the tenure is left to the articles of association. It is also required that at least a third of the board members should be independent.
- **Tunisia:** the board structure is one and two tier. In general, listed companies have one tier boards and their size is between 3 and 12 members. An increasing number of companies adopt a one tier system with separation between the role of chief executive officer and chairperson, especially banks and credit institutions. Companies are recommended to have independent directors, while bank boards are required to include at least 2 independent members.
- **UAE DIFC:** the board structure is one tier. Under the corporate governance principles in Markets Rules, listed companies on NASDAQ Dubai must have at least one third of their board as non-executive directors, of which 2 members must be independent.
- **UAE Federal**: the board structure is one tier. The formation of the board should take into consideration an appropriate balance between executive, non-executive and independent members, given that at least one-third of members should be independent and a majority of members should be non-executives.
- **Yemen:** the board structure is one tier. Joint-stock companies typically have between 3 and 7 members. The roles of the chairperson and the General Manager are often combined.

As shown in Table 1.4, the common board size is characterised by a minimum of 3 and a maximum of 11 members, with a maximum of 15 allowed in Bahrain and the Morocco. Large boards might result in considerable conflicts, weak coordination and communication, and delay in decision-

making. The duration of board mandates in most MENA countries is 3-year renewable, except for 6 years in both Algeria and Morocco, which may be considered too long.

MENA central banks and other regulatory authorities focus on increasing the legal responsibility of board members by describing their fiduciary duties and holding directors accountable. Indeed, many regulators (e.g. in Saudi Arabia and UAE) have also developed guidelines addressing board members, and more specifically the independent board members (such as Morocco). Additionally, a number of central banks have the authority to directly intervene in the operations of the board if they see any flaws. For instance, the Banking Control Law in Saudi Arabia authorises the central bank to suspend or remove any bank directors or officers.

Finally, note that the rates of turnover in MENA bank boards are low and most boards remain dominated by family and state members (or their representatives). Consequently, boards of MENA banks and other companies remain rather homogenous in terms of age and gender diversity.

Table 1.4: Board size and appointment

Country	Board structure (one or two tier)	Board of directors (in one-tier system)			Management board (in two-tier system only)				Source of regulation
		Size		Appointment	Size		Appointment		
		Min.	Max.	Max. term year (years)	Min.	Max.	Max. term year (years)	By	
Algeria	One tier	3	12	6	N/A	N/A	N/A	N/A	-
Bahrain	One tier	5	15	3 (renewable)	N/A	N/A	N/A	N/A	Commercial Companies Law and central bank Rulebook
Egypt	One tier	3	No	3	N/A	N/A	N/A	N/A	Corporate Law
Iraq	One tier	5	9	3	N/A	N/A	N/A	N/A	-
Jordan	One tier	5 [a]	13	4	N/A	N/A	N/A	N/A	Corporate Law
Kuwait	One tier	5 [b]	No	3	N/A	N/A	N/A	N/A	Corporate Governance Code
Lebanon	One tier	3	12	3 (renewable)	N/A	N/A	N/A	N/A	Code of Commerce
Morocco	One & two tier	3	15	6 (renewable)	1	2 [c]	6 (renewable)	Supervisory board	Corporate Law
Oman	One tier	5	12	3	N/A	N/A	N/A	N/A	Commercial Companies Law and Corporate Governance Codes for Banks and Listed Companies
Palestine	One tier	5	11	4	N/A	N/A	N/A	N/A	-
Qatar	One tier	5	11	3	N/A	N/A	N/A	N/A	Corporate Governance Code for Banks and Commercial Companies Law
Saudi Arabia	One tier	3	11	3 (renewable [d])	N/A	N/A	N/A	N/A	Bank Corporate Governance Code, additional specifications in the Companies Law
Tunisia	One & two tier	3	12	3	No	No	3	Supervisory board	Corporate Governance Code
UAE DIFC	One or two tier	No	No	No	No	No	No	No	-

UAE Federal	One tier	3	11	3 (renewable)	N/A	N/A	N/A	N/A	Commercial Companies Law
Yemen [e]	One tier	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-

Source: (Braendle, 2012), (Piesse, Strange, & Toonsi, 2012) & (OECD, 2019). Notes: Min. = Minimum. Max. = Maximum. N/A = not applicable. No = absence of a specific requirement or recommendation. "-": information not provided by the country. [a] Minimum number for board of directors in banks is 11 members. [b] For non-listed closed companies, the minimum size of board of directors is 3 (no maximum size cap) and the maximum term is 3 years. [c] 7 members maximum in case of companies that benefit public savings. If share capital less than 1.5 million dirham the minimum is 1 person. [d] Unless otherwise provided by the bylaws of a specific company. [e] Yemen does not have a capital market law. Joint-stock companies typically have 3 to 7 members. In limited liability companies, 7 members is the maximum allowed by law.

1.4.3 Duality and board independence requirements

The separation of Chief Executive Officer/General Manager-Chairperson roles is becoming increasingly required and implemented in the MENA region. Nevertheless, this is still not a binding requirement in many countries. This is the case of Lebanon where the roles of Chair and CEO are generally consolidated in the hands of one individual (Chahine & Safieddine, 2008). In Egypt, the corporate governance rules recommend the two roles to be separated on a voluntary basis, and if the roles are combined, the reasons should be justified in the annual statement. Furthermore, in this case, the deputy chair should be a non-executive board member. In Saudi Arabia, the Code of Corporate Governance prohibits the combination of the two roles. In Syria, the separation of the roles of board chair and chief executive officer is recommended on the "comply-or-explain" basis (Braendle, 2012).

(Piesse, Strange, & Toonsi, 2012) survey corporate governance practices in a sample of Egyptian and Saudi Arabian companies and found that the roles of the chairman and CEO are combined in 41.6% and 44.6% of the sample companies in Egypt and Saudi Arabia respectively. They also found that the chair holds an executive position in 75% and 78% of the sample companies. Most interesting, the authors found that in many of the cases where the CEO and chair positions are separated, the two were from the same family.

Despite differences in board structure among MENA countries, almost all of them have introduced requirements or recommendations stating the minimum number or ratio of independent directors in the board. For instance, in Oman and Jordan, the entire board members should be non-executives, while regulatory authorities in Kuwait, Lebanon and Morocco does not specify it and leave the decision to the board itself. Bahrain, Jordan and Qatar require a specific minimum number of independent directors (between 2 and 4), other countries set limits relative to the board size (usually 1/3 of members should be independent). Other regulatory authorities use a mixed approach (e.g. at least 2 independent members, with a minimum of 1/3 of board members), and this is common for listed companies in the MENA region. Egypt has adopted a more strict approach stating that the majority of non-executive directors (which actually form the majority of the board of directors) should be independent (Table 1.5).

Basel Committee on Banking Supervision defines and independent director as: *"A non-executive member of the board who does not have any management responsibilities within the bank and is*

not under any other undue influence, internal or external, political or ownership, that would impede the board member's exercise of objective judgment." (BCBS, 2015). Most MENA regulators have already established a set of particular "negative criteria" which prevent a director from being considered as independent, but the comprehensiveness of these criteria differs across countries. In addition for being non-executive, other criteria for independent directors generally include limits on – or even prohibition – of owning shares, borrowing from the bank, limits on remunerations and on the period an independent director may serve as board member. For instance, in Bahrain, there is a 10% limit on share ownership (and 5% for relatives) and limits on remuneration. Additionally, there should be no relationship with other directors and should not be engaged as auditor or advisor. In Lebanon, there is a 5% limit on share ownership and an independent director should be independent from shareholders (up to fourth degree of relationship) and from senior management. In Saudi Arabia, there is also a 5% limit on share ownership, limit on borrowing,[12] and there should not be any first-degree relationship with other directors or executives. An independent director should not also be a board member of a company who received credit from the bank. Additionally, regulations for listed Saudi companies consider a director as not independent if they have sat on the board for more than 9 years, consecutive or not. In the UAE, an independent director should not be a controlling shareholder, was not employed by the bank or its related parties for 5 years, and does not act as advisor or consultant, not affiliated with an NGO that receives funding, was not affiliated to customer or suppliers, and was not employed as an auditor. In Morocco, board members are considered as not being independent after 6 years and the independence of board members should be reviewed on an annual basis by the Board or its Nomination Committee. Nonetheless, regardless of the existing number or proportion of independent and non-executive board members in the MENA banks, it is noticed that they play a limited and non-active role in monitoring bank management activities, suggesting that the appointment of such board members is done to meet regulatory requirements rather than for obtaining more subjective and independent participation in supervision and decision-making.[13]

[12] In Saudi Arabia, a director is no longer considered as independent if he/she has borrowing from the bank exceeding SAR 300,000 either in his/her name or in the name of a family member. Moreover, joint stock companies are prohibited from granting cash loans to directors or to guarantee the loans they conclude with third parties.

[13] This will be subject to empirical investigation in the following chapters.

Table 1.5: Board independence requirements and the separation of the chairperson and the chief executive officer

Country	Separation of CEO/Chair	Independent or Non-Executive Chair	Minimum number or ratio of non-executive directors	Minimum number or ratio of independent directors
Algeria	R	N/Av.	N/Av.	-
Bahrain	L	C/E	At least 3	1/3 or 3 independent
Egypt	C	V	The majority should be non-executive	At least 2 independent directors for listed companies
Iraq	No	N/Av.	N/Av.	No
Jordan	R [a]	L	All members must be non-executive	1/3
Kuwait	R [b]	C/E	Proportional to risk and size, 3 non-executives	1 independent and not more than 50% of board members
Lebanon	C	Not required	Proportional to risk and size	Majority should be independent, non-executive
Morocco	R	Not required	Not required	Majority should be non-executives. At least 1 independent in banks and financial institutions regulated by the central bank
Oman	L & C	L	All members should be non-executive	1/3 with a minimum of 2 independent
Palestine	C	N/Av.	N/Av.	2
Qatar	R	Not required [c]	50% of the board	1/3 of the board
Saudi Arabia	L	L	Maximum 2 executives	1/3 or 2 independent whichever is greater
Tunisia	C	Not required	Proportionate to size and risk	Not required
UAE DIFC	C	N/Av.	N/Av.	2 independent members
UAE Federal	L	L	At least 51% (Mandatory)	1/3
Yemen	C	N/Av.	N/Av.	-

Source: (FSB, 2017), (GOVERN-IFG/ESA, 2018) & (OECD, 2019). Notes: Abbreviations: L = requirement by law or regulations; R = Listing rule: C = recommended by the codes or principles. C/E = comply-or-explain. No = absence of a specific requirement or recommendation. N/Av. = not available. "-" = information not provided by the country. [a] As required by the Corporate Governance Directive, which became obligatory. [b] For non-listed closed companies separation of the CEO and chair of the board is not required. [c] Required for listed companies.

While requirements regarding the participation of non-executive and independent directors are relatively straightforward to create and oversee, the real influence of such directors depends on their independence of mind vis-à-vis shareholders and management. Therefore, the definition of "independence" is represented in the regulatory requirements in critical in ensuring real independence of spirit (GOVERN-IFG/ESA, 2018).

1.4.4 Board of directors committees

The structure, role and responsibilities of board committees vary considerably among MENA countries. The adopted regulatory frameworks do explain the diversity of board composition as a whole and its different committees. Additionally, there are many differences in the regulatory approaches towards independence requirement for board committees and for their chairs. Most central banks in the region adopt prescriptive approaches to board committees in terms of composition and leadership (GOVERN-IFG/ESA, 2018) and the most frequently mandated committee in MENA banks is the Audit Committee, Nomination, Remuneration and Risk Committees. The establishment of a Nomination Committee is required in all MENA countries except in Lebanon and Tunisia. The Remuneration Committee is also required in all countries except Tunisia.[14]

Almost all MENA countries require the existence of an independent Audit Committee. In this regard, they require the Audit Committee's Chair to be independent, whereas the independence of the Committee ranges from requiring the existence of 3 non-executives to majority independence (see Table 1.6). Egypt places less emphasis on the independence of the Audit Committee, and there are no requirements on the independence of its chairperson and no specific requirements regarding the presence of independent directors, but there is a requirement regarding the existence of non-executive directors (Braendle, 2012). Note that several regulators introduced requirements preventing an overlap in membership between the Audit and other board committees. For instance,

[14] In Tunisia, 2 board members are responsible for the nomination of the board and the executives, in addition to deciding their remuneration. Instead of the Audit Committee, the regulatory authorities require the formation of an Internal Audit Committee at the board level. This Committee has a combination of functions which are typically performed by the internal audit department and other functions performed by the board Audit Committee. The Committee is headed by an independent board member.

Saudi Arabia regulatory authorities prevent the Chairperson from serving as the Audit or the Nomination/Compensation Committees. Also in Lebanon, the Audit Committee's Chair cannot chair at the same time other committees. In the UAE, the Chair of the Audit Committee cannot be the Board Chairperson and should be rotated at least once every 4 years.[15]

All MENA regulators (except in Bahrain) require the establishment of a board level Risk Committee. About half of these countries require the Chair of this committee to be independent (GOVERN-IFG/ESA, 2018). Regulatory approaches regarding the independence of this Committee are different. For instance, Lebanon requires 3 independent directors, while Egypt requires the majority to be non-executives, and in Morocco all members must be non-executives and a one third independent. The UAE requires all Risk Committee members to be independent. Other countries, namely Bahrain, Jordan and Kuwait require the presence of a majority of non-executive directors, and only in Bahrain it is required that the Risk Committee to be formed of a majority of independent directors. Regarding the Chair of the Risk Committee, regulators seems to be divided: it must be non-executive in Egypt and Saudi Arabia, independent in Lebanon and Bahrain, while most of other countries do not have specific requirements in this regard.

Nomination and remuneration committees are not compulsory in most MENA countries, although many of them do recommend the establishment of such committees, which should be formed – totally or a majority – of independent directors. In most of those countries, requirements for board member election exist either by law or regulation or through listing standards. In several countries (e.g. Kuwait and Lebanon), Remuneration and Nomination responsibilities are combined within one committee. According to (GOVERN-IFG/ESA, 2018), in Lebanon, independence requirements for these committees are rooted in the regulations regarding minimum independence requirements of board committees. Similarly, the central bank of Morocco requires that a third of these committee members to be independent. Qatar regulatory authorities require that the entire nomination committee to be formed of either non-executive or independent members; nonetheless, the committee chair does not need to be independent. Bahrain requires the Remuneration

[15] Some other regulator have even taken stricter provisions. For instance, the central bank of Jordan restricts board members to serve on more than 2 committees simultaneously. In Tunisia, each board committee must include at least 3 members, who cannot overlap with other committees. In Qatar, the members of Risk, Compliance and Audit committees cannot serve on any other committee.

Committee to be formed of majority of independent directors and the rest to be non-executives. In Egypt, the Committee must contain at least 3 non-executive members. In Saudi Arabia, the Remuneration Committee has wide range of responsibilities: the nominating of board members, determining the required qualifications for membership on the board, reviewing the board structure, verifying the independence of the independent board members, and laying out the terms of compensation to board members and top executives (Braendle, 2012).

Establishing a Governance Committee is required or recommended in a few MENA countries, e.g. Bahrain, Egypt and Jordan. Banks in Bahrain are recommended to establish a Corporate Governance committee comprising at least 3 board members and to be chaired by an independent director. While in Jordan, the Corporate Governance Committee should include a majority of independent directors and should also include the chair of the board.

Several regulatory authorities in the MENA region require or recommend establishing other types of board committees (e.g. investment, credit, compliance, etc.). For instance, Egypt requires the establishment of an Executive Committee, Lebanon a Compliance/Anti-Money Laundering Committee, and the UAE a Credit Committee.

Table 1.6: Board-level committees

Country	Audit committee			Nomination committee			Remuneration committee		
	Establishment	Chair independence	Minimum number or ratio of independent members	Establishment	Chair independence	Minimum number or ratio of independent members	Establishment	Chair independence	Minimum number or ratio of independent members
Algeria	No	No	No	No	No	No	No	No	No
Bahrain	L	C	Majority	C	C	Majority	C	C	All independent or non-executives with majority independent
Egypt	R	No	R	C	C	C	C	C	C
Iraq	No	N/A	N/A	No	N/A	N/A	No	N/A	N/A
Jordan [a]	R	C	Majority	R	C	At least 2	R	Yes	Majority
Kuwait	R	R	1	R [b]	R	1	R	R	1
Lebanon [c]	C	No	No	C	No	No	No	No	No
Morocco	L	No	All	C	No	C	C	No	C
Oman	R	R	1/3 or minimum of 2	C	No	Majority	C	No	Majority
Palestine	C	No	No	C	C	2	C	No	At least 1
Qatar	R	RC	Majority	R	C	No	R	C	No
Saudi Arabia	L	C	At least 1	L	No	At least 1	l	No	At least 1
Tunisia	R	C	No	C	No	No	C	No	C
UAE DIFC	C	C	At least 2	C	C	Majority	C	C	Majority
UAE Federal	L	L	At least 2	L [d]	L	At least 2	L	L	At least 2
Yemen	C	C	50%	C	C	50%	C	C	50%

Source: (FSB, 2017) & (OECD, 2019). Notes: Abbreviations: L = requirement by law or regulations. R = Listing rule. C = recommended by the codes or principles. [a] The regulations require that Nomination and Remuneration Committees are merged into one single committee. Governance and Risk Committees are required by the Corporate Governance Directives, which is obligatory. [b] The regulations require that Nomination and Remuneration Committee are merged into one single committee. [c] Separate and stricter requirements exist for banks. [d] Corporate Governance Code requires that the Nomination and Remuneration Committee is established as a single committee. No: absence of a specific requirement or recommendation. N/A: not applicable. "-" = information not provided by the country.

1.4.5 Board gender diversity

Following the international financial crisis, bank regulators and policymakers raised questions about the effectiveness of boards of banks and financial institutions and several shortcomings have been identified, where the most common was the *composition* of these board (Arnaboldi, Casu, Kalotychou, & Sarkisyan, 2020). In this regard, the (European Commission , 2010) noted *a lack of diversity and balance in terms of gender, social, cultural and educational background* and called for stronger and more legally binding acts from the European member states and the European Union institutions to guarantee more diversity in bank boards.[16]

Nonetheless, women still represent less than 20% of bank boards worldwide and gender gap persists in the financial industry, providing a growing evidence of the "glass ceiling" hypothesis (IMF, 2018). The "glass ceiling" theory defines the gender discrimination in a firm, and according to it, a misperception prevails that women have inferior skills and hence, they face additional hurdles to enter the market and hold a directorship (Baxter & Wright, 2000).The phenomenon of "glass ceiling" has its effects at all levels and women are forced to invest more effort into their work and gain more skills in order to reach higher positions (Manta, Tarulli, Morrone, & Toma, 2020). (Eagly & Carli, 2003) also claims that the "glass ceiling" effect motivates female employees to be more proficient in order to reach higher positions in a firm, which eventually contribute in a better corporate performance. Another relevant theory is the "resource dependence theory", which states that a firm is an open system, conditional on contingencies in the external environment (Pfeffer & Salancik, 1978). Therefore, from resource dependence perspective, gender diversity is a resource that enhances the quality of decision-making (Adeabah, Gyeke-Dako, & Andoh, 2019). Accordingly, the board provides resources that includes gender diversity to support management in grey areas and to control the uncertainties resulting from external dependencies (Hillman, Withers, & Collins, 2009). Finally, the "value in diversity" theory states that the presence of women on boards has a positive effect in representing shareholders interests, enhancing discussion (Upadhyay & Zeng, 2014) and transparency (Eagly & Carli, 2003).

[16] The authors noted that despite the policy agreement on the necessity for encouraging diversity, the approaches taken at the national levels varied considerably, where some countries introduced mandatory quotas for gender and employee representatives, while others promoted diversity as encouraged best practices.

Most MENA regulators have yet to address the issue of board diversity, particularly from the perspective of gender. In fact, women participation on bank and non-bank board of directors in the MENA region lags considerably compared to other regions, especially in the GCC countries. (GOVERN-IFG/ESA, 2018) stated that over 60% of GCC board members and executives has no female representation and 28% has 1 female director, while only 4% has 3 or more female board members.

Regarding the requirement to disclose statistics on board gender composition, OECD (2019) stated that there is no such requirement in all MENA countries apart from UAE Federal and for State Owned Enterprises only. According to the UAE Corporate Governance Code, candidates for board membership should be represented by female board members (a minimum of 20%), and companies must disclose the reasons in case no female is nominated. Besides, companies must also disclose the rate of female representation in the board in its annual governance report. On the other hand, there is no requirement to disclose statistics on gender composition of the senior management in all MENA countries. There is also a lack of a quota/target for companies to achieve gender balance on boards in all MENA countries.

Finally, in addition to the very limited number of women on bank boards, Islamic banks' sharia supervisory boards lack totally the existence of female members (Grassa & Matoussi, 2014).

After discussing the regulatory standards and principles governing bank board structures and compositions in each MENA country, the following section presents the actual/adopted board structures, i.e. board size, independence, and gender diversity, the CEO-chair role duality, in addition to the existing board committees. The section also reveals the ownership structure of these 100 banks in terms of type and concentration.

1.5 The adopted corporate governance structures in the largest 100 MENA banks

After presenting a detailed overview and discussion of the corporate governance regulatory frameworks and requirements in the MENA countries in the above sections, we present in the following the EXISTING ownership types and concentrations, the board sizes and structures, and the existence board committees of the largest 100 banks operating in the MENA region by the end of year 2018. This is to identify the ownership and board structures and composition of the MENA

banking sectors, since these 100 banks represent indeed an overwhelming share of the entire MENA banking sector.[17] The data have been collected through a comprehensive and extensive review of EXACTLY 695 bank annual reports and 100 websites. Before providing a preliminary analysis of the data obtained from the bank annual reports and websites, we note that the studied 100 banks are distributed geographically as follows: 3 banks from Algeria, 8 from Bahrain, 7 from Egypt, 4 from Jordan, 10 from Kuwait, 14 from Lebanon, 3 from Libya, 4 from Morocco, 5 from Oman, 1 from Palestine, 10 from Qatar, 12 from Saudi Arabia, 1 from Tunisia, and 18 from the United Arab Emirates.

1.5.1 Board compositions and structures

Regarding the board sizes (Appendix D), we notice considerable differences among the included banks. This size ranges from a minimum of 5 in the Libyan Foreign bank to a maximum of 14 in the Arab International Bank (Egypt). Additionally, there are 4 banks with a board of 13 members, 7 banks with 12 members, 15 banks with 11 members, 16 banks with 10 members, 39 banks with 9 members, 6 banks with 8 members, 10 banks with 7 members, and 1 bank with 6 members. As for the chairperson-CEO role duality, 35 banks have such situation, versus 65 banks that separate these 2 functions. It is clear that the majority of banks from Algeria, Egypt, Lebanon, Morocco, and Qatar merge the duties of the chairperson and CEO. Conversely, banks from the other countries tend to separate them. Regarding the number (and percentage) of independent board members, we firstly note that only 65 banks in our sample disclosed the number of such information. The percentage of independent directors ranges from a 100% of board members in Commercial Bank of Dubai and Abu Dhabi Commercial Bank versus 0% in Qatar Islamic Banks. Finally, regarding the board gender diversity, 67 of the included banks do not have women as board members, while in the remaining 33, women represent a maximum of one-third in 2 banks, namely QNB Al Ahli Bank (Egypt) and MED Bank (Lebanon), while representing a minimum of 8% in the Housing Bank of Trade and Finance (Jordan) and the Banque Marocaine du Commerce

[17] Note that due to considerable lack of data regarding board size and committees, we had to skip seven banks and replace them with the following banks in terms of assets. The skipped banks are the following: Banque Exterieur d'Algerie, Banque de l'Agriculture et du Development Rural (Algeria), Rafidain Bank (Iraq), Rasheed Bank (Iraq), Trade Bank of Iraq, Wahda Bank (Libya), and National Commercial Bank (Libya).

Extérieur. The percentage of women equals or exceed 30% in 3 banks, equals or exceeds 20% in 12 banks, and equals or exceeds 10% in 25 banks.

The second category of corporate governance variables highlighted in this section is the board of directors committees (Appendix E). In 2018, only 7 out of the 100 banks do not have Risk Committee at the board level. Nonetheless, there has been a gradual spread of this committee among MENA banks. For instance, in 2010, 24 banks did not have this committee, and 15 in 2013 and so on. Regarding the Audit Committee, only one bank did not have it in 2018. But again, the adoption of this committee was gradual in the MENA banks over the past few years were 17 out of the 100 banks did not have it in 2010. The existence of a board-level Compliance Committee is still somehow limited in the MENA banks, where in 2018, 31 out of the 100 banks reported having this committee, mainly Lebanese, Qatari and UAE banks. The Corporate Governance Committee is becoming very common among MENA banks, where 57 out the 100 banks reported the existence of this committee in 2018. Finally, 87 out of the 100 banks reported the existence of a Nomination & Remuneration Committees (versus only 70 in 2010).

1.5.2 Ownership structures

As for the type of ownership (public/private), the sample includes 74 private banks and 26 public banks (Appendix F). Is it noticed that all Algerian and Libyan banks are publicly owned, while the majority of Egyptian and UAE banks are public. Conversely, all included Lebanese and Omani banks (in addition to the Palestinian bank and the Tunisian bank) are private, while the majority of banks from the remaining countries are private. The ownership type is indeed reflected in the ownership concentration, where governments own 100% of the included banks from Algeria and Libya, in addition to the public banks from Bahrain, Egypt, and UAE. In contrast, privately owned banks have of course wider base of shareholders and thus, lower ownership concentration ratio. Nevertheless, MENA private banks seem to have – in general – high concentration of ownership. For instance, the largest 3 shareholders own more than 80% in 9 banks, more than 70% in 15 banks, more than 60% in 24 banks, and more than 50% in 32 banks.

1.6 Conclusion

In this chapter, a review of the legislative and regulatory frameworks concerning corporate governance in every MENA country has been performed, in addition to the additional requirements for listed and Islamic banks. This was followed by highlighting the standards and requirements governing board of directors structures and compositions of the MENA banks (also for each country). Finally, the implemented board and ownership structures in the largest 100 MENA banks have been presented.

The corporate governance standards and practices in the MENA countries have witnessed considerable development over the past three decades, however, more improvement might be required, especially since many codes and regulations have not been updated and modernised for more than ten years in many countries. Nonetheless, it should be noted that the MENA countries do adopt the international corporate governance standards to a large extent.

As for the board of director compositions, they differ considerably between the MENA countries, in terms of standards, requirements and practices. Particularly, it has been noted that the standards governing board size, independence and gender diversity, in addition to chair-CEO role duality are different among MENA countries, and that result in different implemented frameworks by MENA banks. The impact of these different practices on MENA bank performance, valuation and stability will be the subject of empirical investigation in the following three chapters.

Chapter Two: The Impact of Corporate Governance on MENA Banks Performance

2.1 Introduction

The nature of banks and their high importance to the national economy make corporate governance problems highly specific (Andrie□, Căpraru, & Nistor, 2018). It is argued that corporate governance is an important determinant of bank performance (Diamond & Rajan, 2009), and banks with more developed corporate governance structures and mechanisms are more efficient in allocating their resources (Caprio, Laeven, & Levine, 2007). (Macey & O'Hara, 2003) argue in addition that good implementation of corporate governance measures impacts not only bank performance, but also the cost of financial intermediation. Moreover, a successful corporate governance structure enhances public accountability, creates value, minimises risk exposure, and boosts efficiency (Fu, Lin, & Molyneux, 2014), and ensures returns to investors by minimising associated investment risks and contributes to companies' performance (Sleifer & Vishny, 1997). According to (Love & Rachinsky, 2015), the good corporate governance practices influence bank performance and efficiency through three main channels. First, it reduces both the probability and the amounts of related-party transactions and self-dealing practices; second, better-governed banks have lower cost of funding; and third, enhanced governance is translated into more-efficient operations.

A large literature has aimed at studying the association between the adoption of sound corporate governance mechanisms and the performance of banks, in both the developed and the developing countries. Until now, there is still no consensus on the definite impact of corporate governance variables, particularly regarding bank board composition and ownership structure. Studies on different markets, using different samples, and covering different period, reveal a wide divergence in the relationship between board size, board independence, board diversity, role duality, the existence and the size of board committees, ownership type, and ownership concentration (blockholding) on one hand, and bank financial performance on the other hand. This fact remains a motive that is even triggering more studies trying to participate in this continuous argument.

Despite the fact that several studies within the flow of literature have looked specifically at the impact of corporate governance on bank performance and efficiency in the MENA region, those studies suffer several weaknesses, which can be summarised as follows. First, the overwhelming majority of those studies focus solely on the GCC countries, which may prevent generalising their result to the entire MENA region. Second, the focus on the GCC countries

renders the studied samples. Third, the existing studies adopt highlight board characteristics, while few or no focus on ownership. In particular, and to the best of the researcher's knowledge, no previous studies have looked at the effect of ownership structure on the performance of Islamic banks. Fourth, no previous research on the MENA region has studied if/how corporate governance mechanisms affect differently the Islamic and the conventional banks, and thus, there is still no clear empirical evidence whether corporate governance variables shape conventional and Islamic bank performance differently.

This chapter aims at filling the above gaps by analysing the effect of the adopted corporate governance mechanisms and structures on the performance and efficiency of MENA banks. To do so, it adopts the Panel data econometrics on a sample formed of the largest 100 MENA banks, over the period 2011-2018. Regarding the corporate governance structure, the chapter exploits nine variables that represent mainly two aspects: ownership structure and board composition. Moreover, to obtain more homogenous samples, the sample is split into two sub-samples according to their type: conventional and Islamic. Additionally, this allows testing the impact of the adopted corporate governance factors on performance, taking into consideration bank structure, activities, and businesses. This is due to the fact that conventional banks main activities are interest-based, while those of Islamic banks are profit-sharing-based.

An initial review of the studied banks show that the most efficient and profitable banks are concentrated – in general – in the GCC region, with public ownership, large boards, and low proportions of independent and female directors. This is the case of Al Rajhi Bank (Saudi Arabia – Islamic), Qatar National Bank (Qatar – conventional), National Commercial Bank[18] (Saudi Arabia – conventional), Al-Masraf (UAE – conventional), Union National Bank (UAE – conventional), Abu Dhabi Commercial Bank (UAE – conventional), Masraf Al Rayan (Qatar – conventional), and Alinma Bank (Saudi Arabia – Islamic). Conversely, banks with lower efficiency and profitability are located – in general – in Lebanon, Jordan, and Egypt, are conventional banks, and characterised with medium to large board of directors, medium independence, and mixed ownership. This is the case of Banque du Caire (Egypt – private), Housing Bank for Trade & Finance (Jordan – private), Bank al Etihad (Jordan – private), Banque Misr (Egypt – public), National Bank of Egypt (Egypt – public), Crédit Libanais (Lebanon – private), Arab Bank (Jordan – private), Audi Bank (Lebanon – private), Bank of

[18] Currently the Saudi National Bank.

Beirut (Lebanon – private), MED Bank (Lebanon – private), Byblos Bank (Lebanon – private), BBAC Bank (Lebanon – private), and Banque Libano-Francaise (Lebanon – private). Similar situation can be found at some GCC bank, e.g. Ithmar Bank (Bahrain – Islamic – private), Al Baraka Banking Group (Bahrain – Islamic – private), Gulf Bank (Kuwait – conventional – private), and Emirates Islamic Bank (UAE – Islamic – public). To link these banks' corporate governance frameworks and efficiency and profitability, see Table 2.1.

On the other hand, the empirical results show some interesting findings, mainly that the exploited variables do affect differently conventional and Islamic banks. For instance, government ownership could improve MENA Islamic banks performance and efficiency, while high ownership concentration may deteriorate it. In contrast, ownership type and concentration seem not to be an important determinant of MENA conventional banks. Board size and independence are inversely related to all banks performance, which is consistent with the majority of previous studies, and suggests that smaller boards with less proportion of outside directors run banks more efficiently. Gender diversity adds value only to conventional banks, which was also revealed by the literature. Role duality was found to be a major impediment for all banks performance, revealing the negative impact of power concentration. The existence of audit and risk committees are important only for MENA Islamic banks, while the existence of a nomination and remuneration committee boosts conventional banks technical efficiency.

This chapter precedes as follows. Section 2.2 sheds light on the relevant literature. In Section 2.3, the empirical methodology and the exploited variables are illustrated. The data set is presented in Section 2.4. The empirical results and their interpretations are included in Section 2.5. The conclusion of the chapter is in Section 2.6.

Table 2.1: Efficiency and profitability indicators and governance structures of some MENA banks – 2011-2018 averages

Bank	Country	TE	ROA	ROE	Type	Ownership type	Ownership concentration	Board size	% of Independent board members	% of women board members
Masraf Al Rayan	Qatar	0.96	2.46	16.63	Islamic	Public	28.00	9.00	0.53	0.00
Qatar National Bank	Qatar	1.00	2.15	18.21	Conventional	Public	51.56	10.00	0.46	0.00
Al Rajhi Bank	Saudi Arabia	1.00	2.62	18.26	Islamic	Public	29.19	11.00	0.41	0.00
Alinma Bank	Saudi Arabia	0.94	1.71	7.36	Islamic	Public	28.30	9.00	0.56	0.00
National Commercial Bank	Saudi Arabia	1.00	2.16	17.61	Conventional	Public	71.14	9.00	0.29	0.00
Abu Dhabi Commercial Bank	UAE	0.99	1.85	14.65	Conventional	Public	62.97	10.75	0.52	0.07
Al Masraf	UAE	1.00	2.42	10.52	Conventional	Public	100.00	7.25	0.14	0.00
Union National Bank	UAE	1.00	1.76	10.25	Conventional	Public	60.01	8.50	0.63	0.00
Albaraka Banking Group	Bahrain	0.53	1.14	11.99	Islamic	Private	74.82	12.88	0.48	0.00
Ithmaar Bank	Bahrain	0.48	0.28	4.94	Islamic	Private	58.03	10.00	0.50	0.11
Banque du Caire	Egypt	0.51	1.48	22.78	Conventional	Private	100.00	9.00	0.67	0.11
National Bank of Egypt	Egypt	0.70	1.06	20.25	Conventional	Public	100.00	9.00	0.67	0.22
Arab Bank	Jordan	0.71	1.18	7.00	Conventional	Private	34.54	11.00	0.60	0.09
Bank al Etihad	Jordan	0.66	1.10	8.52	Conventional	Private	48.77	11.00	0.36	0.09
Housing Bank for Trade & Finance	Jordan	0.63	1.51	10.77	Conventional	Public	68.55	12.75	0.25	0.03
Gulf Bank	Kuwait	0.66	0.74	7.59	Conventional	Private	42.99	9.00	0.33	0.00
Audi Bank	Lebanon	0.71	1.10	13.24	Conventional	Private	44.84	11.00	0.34	0.18
Bank of Beirut	Lebanon	0.72	1.17	9.74	Conventional	Private	40.78	10.25	0.47	0.00
Banque Libano-Francaise	Lebanon	0.77	0.86	9.87	Conventional	Private	57.82	9.25	0.29	0.11
BBAC	Lebanon	0.76	0.82	10.53	Conventional	Private	91.52	9.00	0.45	0.00
Byblos Bank	Lebanon	0.74	0.88	9.73	Conventional	Private	48.85	10.75	0.56	0.00
Crédit Libanais	Lebanon	0.71	0.76	10.35	Conventional	Private	79.12	11.88	0.33	0.01
MED Bank	Lebanon	0.73	0.81	8.59	Conventional	Private	100.00	9.00	0.50	0.25
Emirates Islamic Bank	UAE	0.78	0.47	4.44	Islamic	Public	100.00	7.00	0.57	0.00

Source: bank annual reports and BankFocuse database.

2.2 Literature review

This section will present a review of the related literature, which detected the effect of corporate governance on bank performance and efficiency. The literature review will be divided into two parts: in the first part, the findings of previous studies done on the developed countries are presented and discussed, while those done on the emerging markets (including the MENA region) will be presented and discussed in the second part. This is done because the corporate governance frameworks between the two groups of countries are indeed different, and consequently, the impact of corporate governance variables on bank performance and efficiency may be different.

2.2.1 Studies on the developed countries

To analyse the relationship between corporate governance and the technical efficiency of 11 Australian banks between 1999 and 2013, (Salim, Arjomandi, & Heinz, 2016) exploit a two-stage double-bootstrap data envelopment analysis, and use board size, ratio of non-executive independent directors, number of board meetings, number of committee meetings, and concentrated shareholders as explanatory variables. The authors find that board size affects negatively and significantly bank technical efficiency, while the percentage of independent directors has positive but insignificant effect. They also show that the number of board meetings has a positive but insignificant effect, while the number of committee meetings has negative and significant effect on efficiency. On the other hand, the authors reveal that the impact of large shareholders' ownership (i.e. ownership concentration) is statistically insignificant.

(Mamatzakis & Bermpei, 2015) analyse the impact of corporate governance mechanisms on the performance of 23 main listed U.S. investment banks, over the period 2000-2012. The authors use a dynamic panel, to detect the impact of several corporate governance indicators, particularly board size, board composition, gender diversity, CEO-chairman duality, internally hired CEO, the number of shares holds by the CEO, and CEO age, on bank performance represented by technical efficiency, ROA and ROE. Their empirical results show a positive but insignificant effect of board size on ROE, and a negative and significant effect on both ROA and technical efficiency, suggesting that banks with larger boards suffer lower performance. Additionally, they find that the percentage of independent directors affects

positively (but insignificantly) ROE, and negatively (also insignificantly) ROA and efficiency. Similarly, the percentage of women board members shows to have a positive but insignificant effect on ROE, ROA and technical efficiency. Finally, they find that the CEO power has a positive impact on bank performance in general.

The examination of how corporate governance explains U.S. bank performance before the international financial crisis was done by (Grove, Patelli, Victoravich, & Xu, 2011) using a sample of 236 commercial banks between 2005 and 2008. These authors reveal that CEO duality is negatively and significantly associated with financial performance, proxied by ROA. They also find that board size has negative but insignificant impact on performance, nevertheless, a concave relationship between financial performance and board size was found. On the other hand, they reveal that the proportion of inside directors has a negative but insignificant effect on ROA.

The impact of corporate governance on European bank performance between 2002 and 2011 was investigated by (Belhaj & Mateus, 2016), who exploit a sample of 73 banks from 11 European countries. The authors examine particularly the relationship between board size and composition, gender diversity and CEO duality on bank performance (proxied by ROE and ROA). Their empirical results show that board size and gender diversity have a positive and significant impact on bank performance, suggesting that larger board of directors with more female members lead to better bank performance. Conversely, they find that board composition and CEO duality do not have a significant effect in determining European bank performance. Finally, they reveal that the CEO-chairman duality improves bank performance, whether ROA or ROE.

(Wang, Lu, & Lin, 2012) explore the relationship between the operating performance and corporate governance of 68 bank holding companies (BHCs) in the U.S. in 2007. The authors use a modified data envelopment analysis to integrate the five rating indicators of CAMEL to estimate the BHCs' performance, summarised by technical efficiency. Overall, their empirical results show a negative and significant impact of board size, outside directors (i.e. non-executive directors), and the CEO-chairman duality on BHCs technical efficiency.

The association between board diversity and bank performance captured the attention of (Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015). In this regard, they analyse the effect of board gender and nationality diversity on the profitability of banks, in addition to

several board characteristics, by exploiting a sample of 159 banks in 9 developed countries (Canada, France, Germany, Italy, the Netherlands, Spain, Sweden, the UK and the US) over the period 2004-2010. Their empirical results show that gender diversity boosts bank performance, and a higher percentage of woman on the board is positively and significantly associated with ROA, while conversely, national diversity hinders bank performance. They argue that in contexts of weaker regulatory and lower investor protection environment, board diversity would have lower influence on bank performance. As for board size and the percentage of independent directors, they have been found to boost significantly bank financial performance, while duality has a depressing effect.

While most of studies focused on traditional profitability ratios, (Cornett, McNutt, & Tehranian, 2009) examine earnings management in the largest 100 publicly traded commercial bank holding companies (BHCs) in the U.S. between 1994 and 2002, and in particular how the adopted corporate governance mechanisms affect bank performance, represented by earnings before extraordinary items and after taxes to total assets (EBEIAT) and earnings management (EM) as percentage of total assets. The authors reveal that board independence affects positively EBEITA, and negatively EM, and both statistically significant. As for duality, they find it to lower EBEITA but increases EM, while the number of board meetings does not affect both measures. Finally, they test the impact of the audit committee size on EM, and find it negative and significant.

The combined effect of internal and external governance mechanisms on European banks before and after the 2008 international financial crisis was analysed by (Ayadi, Ayadi, & Trabelsi, 2019). Specifically, they exploit a sample of 30 banks operating in France, Belgium, Germany and Finland, during the 2004-2009 period. The authors reveal that board size has a negative impact of both bank ROE and ROA (but significant only for ROA) suggesting that an increase of the board size leads to a decline of financial performance. Secondly, they show that the proportion of outside independent directors is negatively and significantly associated with ROE and ROA, proving that a higher percentage of outside directors results in a decline in bank performance. Regarding the existence of a remuneration committee, the authors find it to have a positive but insignificant effect on performance. Finally, the authors show that a role duality leads to a significant improvement in financial performance of banks.

Using a sample of 115 UK banks between 2003 and 2012, (Harkin, Mare, & Crook, 2020) investigate how different governance structures affect risk and return in banks. Firstly, they show that combining the roles of CEO and Chairman lowers risk without affecting return. They argue that this result is consistent with the hypothesis of conflictual overlap in roles, or it is because joint CEO-Chairmen are remunerated differently from CEOs who are not Chairmen at the same time. Secondly, they find that the presence of a remuneration committee is associated with higher ROA. Thirdly, a higher percentage of independent directors was found to boost bank performance, suggesting that independence is important driver of bank performance. Thirdly, they find that larger board boosts significantly bank ROA, while board diversity shows to lack a significant effect. Finally, the authors reported that state ownership deteriorates banks performance and this variable is negatively associated with bank ROA.
Finally, (Saghi-Zedek & Tarazi, 2015) study the impact of several ownership variables on bank ROA, using a sample of 750 banks from 17 Western European countries between 2002 and 2010, and find particularly that state and private banks have the same profitability, suggesting no impact of government ownership on bank performance.

2.2.2 Studies on the emerging and developing countries

After shedding light on studies done on the developed markets, the other studies that focused on the contribution of corporate governance to bank performance in the developing countries will be discussed, including the MENA countries. In fact, research on corporate governance is still limited in emerging markets and even more limited in developing countries (Claessens & Yurtoglu, 2013). These authors argue that corporate governance challenges are mainly determined by a country' overall development and institutional environment, and more importantly by the prevailing ownership structures. They add that while the general importance of corporate governance has been established in emerging and developing countries, the knowledge on several specific issues is still weak, manly related to (1) ownership structures and the relationship with performance and governance mechanisms, (2) corporate governance and stakeholders' roles, and (3) enforcement and related changes in the corporate governance environment. (Agénor & Pereira da Silva, 2012) state that the less developed countries are characterised by many imperfections such as: (1) underdeveloped capital markets, (2) limited competition between banks, (3) more sever information asymmetry problems, (iv) direct or

indirect role of government in banking inadequate transparency and disclosures, and (v) weak property rights and inefficient legal systems. All that may result in weaker governance frameworks and practices.

2.2.2.1 Conventional banks

Using a sample of 15 Chinese and 21 Indian listed banks (commercial, cooperative, and bank holdings companies) over the period 2007-2011, (Battaglia & Gallo, 2015) investigate how boards of directors and risk management-related corporate governance mechanisms are associated with bank performance (ROE and ROA). In general, they find no significant association between board size and both ROE and ROA (though it is positive for ROE and negative for ROA). Moreover, their empirical results show that a higher percentage of outside directors results in worsening both ROE and ROA. Finally, they show that the size of the risk committee has a positive and significant effect on both performance measures, suggesting that banks with larger risk committee perform better in terms of profitability.

Also within the Indian perspective, (Bezawada & Adavelli, 2020) examine the impact of board characteristics on bank profitability (represented by ROA) using a sample of 34 commercial banks between 2009 and 2018, and find that board size and independence have positive and significant impact on ROA. The percentage of executive directors is having significantly negative relationship with the ROA. The authors argue that these results provide support to the presence of a trade-off between the monitoring and advisory functions of Indian bank boards.

The effects of corporate governance on bank performance in China was examined by (Jiang, Feng, & Zhang, 2012), who exploited a sample of 47 banks operating between 1995 and 2008 to detect the impact of ownership type and concentration on bank profit efficiency. They find that banks with majority foreign ownership are most profitable, while those with majority government ownership are most unprofitable. Regarding ownership concentration, they show that banks with more dispersed ownership (i.e. lower ownership concentration) have higher profit efficiency.

The association between Indonesian bank ownership and profitability between 1995 and 2006 was examined by (Agustin, Indrastuti, Tanjung, & Said, 2018) who exploited a sample containing 56 private banks, 15 community development banks, and 3 federal banks. Using different regression techniques, they found that government banks had higher ROE,

community development banks had higher ROA and ROE, while foreign banks did not have superior profitability.

In order to analyse the determinants of technical efficiency of Turkish banks, (De Jonghe, Disli, & Schoors, 2012) study a sample of 63 Turkish banks, and exploit particularly the internal governance mechanisms (e.g. CEO duality, board experience, political connections, and education profile) in addition to other external governance mechanisms (e.g. discipline exerted by shareholders, depositors, or skilled employees), between 1988 and 2009. The authors show that that a more experienced CEO increases bank technical efficiency, while chairmen with a political background lower this efficiency. Moreover, they find that CEO-chairman duality depresses significantly bank efficiency, and argue that a non-duality CEO helps banks to achieve a higher risk/return efficiency. Finally, they show that government ownership in Turkish banks improves significantly their technical efficiency.

Using a sample of 50 largest Chinese banks over the period of 2003-2010, (Liang, Xu, & Jiraporn, 2013) analyse the impact of a set of board characteristics on bank performance in China in order to assess board structures in the context of the ongoing Chinese banking reforms. The authors show that board-level governance mechanisms, such as size, number of meetings, the percentage of independent directors and directors who are politically connected, are important determinants of bank performance in China. Specifically, they find that board size and duality have a negative and significant effect on Chinese banks' ROE. Secondly, they find that the number of board meetings and the proportion of independent directors have significant positive impact on bank ROE. Thirdly, the degree of bank boards' political connection was found to be negatively associated with bank performance. Finally, regarding bank ownership, their empirical results reveal a negative correlation between government ownership and bank performance.

(Orazalin, Mahmood, & Lee, 2016) investigate the impact of different dimensions of corporate governance practices (e.g. board characteristics, ownership structure, corporate disclosure and CEO education) on the operating performance of the largest publicly traded Russian banks, before, during and after the international financial crises. The authors reveal a positive impact of corporate governance on bank performance during all the studied periods. Particularly, they find that better corporate disclosure and increased transparency lead to better operating performance. Regarding the characteristics of board of directors, they find a negative

association with operating performance, and conclude that banks with a greater number of board members, independent directors and monitoring committees seem to have lower ROE and ROA, particularly after the crisis.

In the Romanian context, (Dedu & Chitan, 2013) investigate the influence of internal corporate governance on Romanian bank performance for the period 2004-2011. They test the impact of management characteristics and ownership structure on ROE and ROA and find that a higher percentage of independent board members boosts both performance measures. In contrast, they do not find any significant impact of gender diversity on banks' ROE and ROA.

The effects of changes in governance practices on bank performance in South East Asia was examined by (Williams & Nguyen, 2005). These authors use a sample of 231 commercial banks operating in Indonesia, South Korea, Malaysia, Philippines, and Thailand between 1990 and 2003. They employ a stochastic frontier and Fourier flexible functional form to compute bank profit efficiency, technical change, and productivity, which were used as dependent variables, whereas governance was proxied by bank ownership. The authors find that government ownership had a negative impact on bank performance, suggesting that state-owned banks underperformed their private-owned ones.

Studies on governance in developing nations often focus on the role of ownership in reducing agency problems because of the prevailing weak legal infrastructures (Berger A. N., Clarke, Cull, Klapper, & Udel, 2005). In this regard, these authors analyse the static, selection, and dynamic effects of bank ownership type (i.e. domestic, foreign, and state ownership) on bank performance, proxied by profit and cost efficiencies and ROE. They study particularly the Argentinian banking sector between 1993:Q2 and 1999:Q4. Their results show that state ownership affects negatively bank profit efficiency and ROE, suggesting that state-owned banks tend to have poorer long-term performance on average than domestically-owned banks or foreign-owned banks.

To test the effect of corporate governance practices on Kazakhstani banks on their financial performance, (Orazalin & Mahmood, 2018) exploit of a set of different corporate governance variables of 38 listed Kazakhstani banks, over the period 2004-2012, i.e. before and during the international financial crisis. Through constructing a Corporate Governance Index, their empirical results propose that banks with stronger corporate governance structures were able to mitigate the negative repercussions of the financial crisis. The authors argue that when

targeting to enhance corporate governance practices in the banking sector, policymakers and regulators should take into consideration the importance of board characteristics, board-level committees, the role of multiple shareholders, disclosure practices, and executives' qualifications.

(Polona, Bratina, & Festic, 2016) analyse the characteristics of corporate governance in banks in Poland and Slovenia between 2005 and 2013, to detect the association between adopted corporate governance mechanisms (combined to form a corporate governance index) in the largest 10 banks in each country, and their financial performance (represented by net interest income). The authors' empirical findings show that corporate governance index is positively associated with net interest income in both countries, but statistically significant only for Slovenia.

Using a sample of 21 banks operating in Ghana between 2009 and 2017, (Adeabah, Gyeke-Dako, & Andoh, 2019) study the effect of board gender diversity on bank efficiency. The authors exploit a data envelopment analysis to compute bank efficiency and reveal that gender diversity does promote bank efficiency. Secondly, they find a positive and significant association between board size and efficiency up to a maximum of 9 members, suggesting a threshold effect of board size on bank efficiency. Thirdly, they reveal that a higher percentage of independent directors leads to lower bank efficiency.

Also on Ghana, (Bokpin, 2013) detects the effect of corporate governance and ownership structure on bank cost and profit efficiencies in the banking industry, over the period 1999-2007. The author finds that board size is positively associated with both profit and cost efficiency, though statistically significant only for profit efficiency. Regarding board independence, he shows an insignificant impact on bank efficiency, while managerial ownership may lead to cost inefficiency of banks.

In the context of Central and Eastern European countries, (Andrie□, Căpraru, & Nistor, 2018) investigate the impact of corporate governance on bank technical efficiency using a sample of 139 commercial banks operating in Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine. Surprisingly, they find that adopting tighter corporate governance practices results in a lower level of efficiency, while banks having weak governance mechanisms enjoy higher technical efficiency.

In a similar context, (Love & Rachinsky, 2015) aim to present evidence on the relationship between a constructed corporate governance index and bank financial performance using a sample of 107 banks operating in Russia and 50 banks operating in Ukraine between 2003 and 2006. The authors find a positive association between governance and performance in both countries, but stronger in Ukraine. Specifically, they find that better corporate governance structures in Ukraine improves ROA, ROE, and net interest income. While for Russia, their results reveal a positive and significant association only with ROA. The authors argue that these results are in line with the consensus that better governance systems allow banks to control costs and gain from higher returns on loans. The authors extend their analysis to test the effect of government ownership on bank performance in Russia, and show that it has a negative but insignificant impact on ROE and ROA.

As for the Lebanese context, (Azoury, Azouri, Bouri, & Khalife, 2018) examine the impact of ownership concentration and type in addition to board characteristics on the financial performance of Lebanese banks, by studying the largest 35 banks operating between 2009 and 2014. Their empirical results reveal that ownership concentration, the percentage of outside directors, and duality all have a positive and significant effect on bank Lebanese banks' ROA. The author argue that ownership concentration, directors' ownership, institutional, and foreign investors are successful governance mechanisms that can be utilised to minimise agency costs. Similarly, (Chahine & Safieddine, 2011) investigate the effect of board size and composition on bank performance in Lebanon over the period 1992-2006. By studying the entire banking sector, the authors show that bank's ROE and ROA are positively and significantly related to the size of the board. Furthermore, they identify a quadratic relationship between performance and board independence, where performance first decreases and then increases with the proportion of independent directors. They argue that this result suggests that in addition to their monitoring role, outside directors may be used by banks (mainly foreign) as a means to have access to local investment opportunities.

2.2.2.1 Islamic banks

Several studies have tested the association between corporate governance and bank performance in countries that adopt the Islamic Sharia law in their banking systems. For instance, (Mollah & Zaman, 2015) test the impact of corporate governance mechanisms on

Islamic and conventional banks, using a sample of 86 conventional and 86 Islamic banks operating in 25 countries between 2005 and 2011. Particularly, they examine the effect of Sharia supervisory boards, board structure and CEO-power on bank performance. They reveal that board structure (whether board size or board independence) has a negative and significant influence of Islamic banks' ROA, while CEO-Chair duality is negatively but insignificant associated with their performances. On the other hand, the authors find that for conventional bank ROA, board size and board independence have a positive but insignificant impact, while duality has a negative and also insignificant effect. The authors concluded that large boards are often considered ineffective, and that the negative association between independent directors and performance could be because these directors are often chosen to meeting regulatory requirements rather than based on their qualifications.

In the context of Malaysian banking sector, (James & Joseph, 2015) examine the effects of ownership monitoring mechanism and internal control monitoring mechanism represented by board independence and board size on bank performance using a sample of 18 banks over the period 2009-2013. They show that board size and board independence have a negative but insignificant effect on ROA.

(Abdel-Baki & Sciabolazza, 2014) structured a corporate governance index for Islamic banks based on six themes extracted via a survey conducted on 72 Islamic banks operating in 14 Asian and Middle Eastern countries. The authors linked the survey's results to the performance of their sample of banks between 2001 and 2011. They find a positive association between corporate governance index and the exploited financial performance variables (ROE and ROA). The authors also argue that the intermediation role of Islamic banks and their exploitation of deposits are improved by better corporate governance practices.

A review of the literature on the impact of corporate governance mechanisms on Islamic banks performance was performed by (Li, Armstrong, & Clarke, 2014) and found that Islamic banks tends to have better financial performance if: (i) they have a high percentage of independent directors; (ii) their Sharia supervisory board is large; (iii) they have large board of directors; (iv) a duality exists in the CEO-chairman role; (v) there is an enforcement of internal and external auditing; and (vi) the ownership structure is more spread.

As for the MENA region, fewer studies have looked at the relationship between corporate governance frameworks and bank performance. In general, those studies focus solely on cross-

country Islamic banks or exploit single market, which result in studying small samples, thus preventing a generalisation of their result. For instance, (Awadh & Abdul Rahman, 2015) examine the relationship between board structure and Islamic banks performance (proxied by ROA and ROE), using a sample of 40 GCC Islamic banks between 2008 and 2011. The authors find that board size has a negative and significant effect on ROE, and negative but insignificant for ROA, suggesting that smaller boards are able to make quicker decisions in addition to playing an effective role in monitoring the performance of GCC Islamic banks and improving their value. They also reveal that the proportion of non-executive directors has a significant negative effect on both ROA and ROE, which – according to the authors – is due to their lack of banking and Sharia knowledge, thus reducing the monitoring efficiency and resulting in poorer performance. On the other hand, they find that chairman independence is positively associated with performance, while the separation of CEO and chairman roles was found to be negatively associated with ROE and ROA (statistically insignificant though).

Similarly, to measure the bank governance quality adopted in the GCC Islamic banks, (Ajili & Bouri, 2018) exploited a sample of 44 Islamic banks operating in the 6 GCC countries. The author constructed a corporate governance index based on the characteristics of board of directors, the audit committees, and the Sharia supervisory board indices. The authors find no significant association between corporate governance quality of and Islamic bank's ROE and ROA. They argue that this result implies that good governance of Islamic banks in the GCC countries is not oriented to maximise performance, or this lack of relationship could be a function of the development phase of the GCC banking systems.

A test on the impact of board size, CEO-duality, and ownership structure on Islamic bank technical efficiency has been performed by (Ben Zeineb & Mensi, 2018) who study the effect of corporate governance of GCC Islamic banks on efficiency and risk, using a sample of 56 banks during the period 2004-2013. Firstly, they conclude that implementing sound corporate governance structures results in higher efficiency levels. Secondly, regarding board size, they reveal a negative and a significant impact on Islamic bank efficiency, suggesting that larger boards are less effective than smaller ones. This could be because lager boards are less able to control management, leading to a separation of control and management, which in turn leads to agency problems. Thirdly, they find a negative impact of duality on technical efficiency. As

for ownership structure, they find that private ownership in Islamic GCC banks does not add value to their performance.

A final note is that the literature that compared the corporate governance structures and mechanisms of conventional and Islamic banks suggests that Islamic banks considerably differ from conventional banks in terms of adopted corporate governance frameworks. For instance (Wasiuzzaman & Gunasegavan, 2013) compare the corporate governance structures of Islamic and conventional banks in Malaysia and find that conventional banks have significantly larger boards with less independent directors. Similarly, (Bukhari, Awan, & Ahmed, 2013) compared the corporate governance structures and dimensions of Islamic banks and conventional banks with Islamic bank window in Pakistan, and find that the most significant factors affecting the corporate governance in Islamic banks are board of directors and Sharia supervisory board, while for other banks, almost all dimensions of corporate governance are important.

2.2.3 The main themes emerging from the literature on corporate governance and bank performance and efficiency

After the thorough and comprehensive coverage and discussion of the relevant literature presented in the previous sub-sections, the exploited corporate governance variables and performance measures used by the previous studies are summarised in Appendix G. This is done in order to list and compare the most used corporate governance and explanatory variables in the literature and their interactions and associations, in order to (1) develop this chapter's hypotheses and (2) select the variables that will be subsequently used in the econometric model construction.

Overall, the review of literature on corporate governance and bank performance and efficiency revealed the following:

- **The Impact of state ownership**: the majority of listed studies, e.g. (Williams & Nguyen, 2005), (Berger, Clarke, Cull, Klapper, & Udel, 2005), (Liang, Xu, & Jirapon, 2013), and (Harkine, Mare, & Crook, 2020), found a negative association between state ownership and bank performance.
- **The Impact of ownership concentration**: the majority of listed studies, e.g. (Azoury, Azouri, Bouri, & Khalife, 2018), (Mardnly, Mouselli, & Abdulraouf, 2018) and (Abobakr, 2017) have found a positive association between ownership concentration and bank performance and efficiency.

- **The Impact of board of directors' size**: the majority of listed studies, e.g. (Salim, Arjomandi, & Heinz, 2016), (Mamatzakis & Bermpei, 2015), (Ben Zeinab & Mensi, 2018) and (Orazalin, Mahmood, & Lee, 2016) have found a negative association between board size and bank performance and efficiency.
- **The Impact of role duality**: the majority of listed studies, e.g. (De Jonghe, Disli, & Schoors, 2012), (Ben Zeinab & Mensi, 2018), (Grove, Patelli, Victoravich, & Xu, 2011) and (Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015) have found a negative association between role duality and bank performance and efficiency.
- **The Impact of percentage of independent directors**: the majority of listed studies, e.g. (Adeabah, Gyeke-Dako, & Andoh, 2019), (Ayadi, Ayadi, & Trabelsi, 2019), (Battaglia & Gallo, 2015), and (Awadh & Abdul Rahman, 2015) have found a negative association between the percentage of independent directors and bank performance and efficiency.
- **The Impact of board gender diversity**: the majority of listed studies, e.g. (Adeabah, Gyeke-Dako, & Andoh, 2019), (Belhaj & Mateus, 2016) and (Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015) have found a positive association between board gender diversity and bank performance and efficiency.
- In addition, **the impact of the existence of audit, risk, and nomination and remuneration committees** on bank performance will be tested.

2.2.4 Hypotheses development

Despite the fact that there are some discrepancies in the findings of the above listed literature, it is possible to develop several hypotheses based on the findings of the majority of the covered studies. Consequently, the following hypotheses have been developed.

- **Hypothesis 1** (H1): state ownership has a negative impact on bank performance and efficiency.
- **Hypothesis 2** (H2): ownership concentration has a positive impact on bank performance and efficiency.
- **Hypothesis 3** (H3): board size has a negative impact on bank performance and efficiency.
- **Hypothesis 4** (H4): CEO-chairman role duality has a negative impact on bank performance and efficiency.

- **Hypothesis 5** (H5): the percentage of independent board members has a negative impact on bank performance and efficiency.
- **Hypothesis 6** (H6): board gender diversity has a positive impact on bank performance and efficiency.
- **Hypothesis 7** (H7): the existence of audit, risk, and nomination and remuneration committees has a positive impact on bank performance and efficiency.

2.3 Methodology and variables specifications

2.3.1 Bank performance measures

Bank performance can be measured using several techniques and variables. The most common measures are accounting ratios such as the return on assets and return on equity. On the other hand, many studies resort to using different measures reflecting the "efficiency" of the bank in managing its assets, liabilities, and resources. Following the literature summarised in Appendix G, profitability and efficiency measures will be used to proxy for bank performance: bank return-on-average assets (ROA), bank return-on-average equity (ROE), bank cash flows per share (CF), in addition to bank Technical Efficiency. Regarding the last measure, the computation methodology and assumptions are highlighted in the following.

2.3.1.1 Stochastic Frontier Approach to measure bank efficiency

The efficiency frontiers allows modelling the behaviour of a banks taking into account both risk and return. The stochastic frontier was proposed firstly by (Aigner, Lovell, & Schmidt, 2018) and (Meeusen & van Den Broeck, 1977) who adopted a model with compound errors, in which the inefficiency is assumed to follow an asymmetric distribution, whereas the random errors are assumed to follow a standard normal symmetric distribution. (Greene, 1990) suggests that the relevant basic model for efficiency can be written as:

$$C_{it} = C(y_{it}, w_{it}, \beta).\exp(v_{it} + u_{it})$$

where C_i is the observed production cost of bank *i*, y_i is a vector of output quantities, w_{it} is a vector of input prices, β is a vector of parameters to be estimated, v_i is a random error term,

and u_i measures the bank inefficiency that increases production costs. Note that the inefficiency in the cost function must follow an asymmetric distribution.

The estimation of the parameters of the stochastic frontier is done by the choice of the probability distribution of terms v_i and u_i (Stevenson, 1980). Among others, (Greene, 1990) suggests adopting a gamma distribution for the inefficiency term and a normal distribution for the error term. This distribution assumption is based on the fact that the inefficiency term cannot reduce costs, and therefore, must have an asymmetric distribution. Conversely, the error term may increase or decrease costs, justifying the symmetric distribution.

A system of equations is estimated, consisting of cost function and its equations from associated cost, which are derived from the Lemma Shepard. The estimation of this system of equations adds degrees of freedom and allows for more efficient estimators than the estimation of a single equation cost function. Here, the standard constraints of symmetry are imposed. Similarly, the homogeneity conditions are imposed by normalising the total cost and the prices of production factors. A Translog model is then estimated in order to determine the efficiency scores of MENA banks, which is written as follows:

$$Ln\left(\frac{CT}{p_3}\right)=\alpha_0+\sum_{i=1}^{3}\alpha_i Lny_{it}+\frac{1}{2}\sum_{i=1}^{3}\sum_{k=1}^{3}\alpha_{ik}Lny_{it}Lny_{kt}+\sum_{j=1}^{3}\beta_j Ln\left(\frac{p_j}{p_3}\right)$$
$$+\frac{1}{2}\sum_{j=1}^{3}\sum_{m=1}^{3}\psi_{jm}Ln\left(\frac{p_{jt}}{p_3}\right)Ln\left(\frac{p_{mt}}{p_3}\right)+\sum_{i=1}^{3}\sum_{j=1}^{3}\eta_{ij}Lny_{it}Ln\left(\frac{p_{jt}}{p_3}\right)+v_{it}+u_{it}$$

where *TC* is total cost, y_i, y_k are the quantities produced of each output, p_i, p_j are the prices of production factors, v_i is a random error term, and u_i is an error term that captures the inefficiencies.

For equation (2) to be a cost function, it must be concave, homogeneous of degree 1 and $\psi_{jm}=\psi_{mj}$. The degree 1 homogeneity with respect to prices is induced by the conditions $\beta_j=1, \sum_j \psi_{jm}=\sum_i \eta_{ij}=0$.

2.3.1.2 Constructing the Efficiency Frontier using the Data Envelopment Analysis (DEA) Method

(Charnes, Cooper, & William, 1978) (CCR) construct an optimisation mathematical program whose solution provides a measure of the *relative* efficiency of a Decision Making Unit (DMU). The word "relative" means that the DMU is compared to all other DMUs operating in a similar industry, where their inputs and outputs are homogeneous. The DEA method measures the efficiency of a DMU by calculating the relative variation, which separates the point representing the observed values of inputs and outputs, compared to a hypothetical point on the production frontier. In this manner, we can measure the level of efficiency of each DMU compared to this frontier, which in fact represents the "best practice". This frontier has a role of enveloping the productive activities in a way that the set of production alternatives is convex. Consequently, the DEA uses the available data to construct an efficiency frontier, which joins the best practice. The inefficiency of other DMUs is measured by their distance from this frontier. The (CCR) model used in this study is based on the maximisation of the weighted sum of outputs divided by the weighted sum of inputs (alternatively, the minimisation of the weighted sum of inputs divided by the weighted sum of outputs). This model shows that the efficiency of a DMU is obtained as a ratio between outputs and inputs under the constraint that this ratio is equal to, or lower than 1 for all DMUs. With the resolution of the program, the DMU is compared with a linear combination of efficient DMUs that constitute a reference. Note that the CCR program measures the total technical efficiency while assuming constant returns-to-scale. (Banker, Charnes, & Cooper, 1984) extend the efficiency measure and developed a model with variable returns-to-scale through introducing additional constraint: a convexity that guarantees that the studied DMU is compared only to DMUs of similar size. By solving for all DMUs, the DEA determines a production frontier, which permits evaluating the efficiency of each DMU by providing it with efficiency score ranging between 0 and 1. This study is based on the assumption of variable returns-to-scale and input-orientation. This is because the assumption of variable returns-to-scale is the most suitable assumption in the case of banks, and because the input-orientation has the advantage of insisting on the reduction of quantity of inputs used in the production process in order to increase efficiency, which in fact corresponds to the behaviour of most of banks.

2.3.1.3 Defining bank inputs and outputs

Two approaches can be implemented in order to define bank inputs and outputs: (i) the production approach, and (ii) the intermediation approach. In the production approach, the bank is considered as firm that uses different inputs to produce saving and credit services. In this regard, interest expenses are not considered as inputs, while only operating costs (staff expenses, overheads, etc.) are. On the other hand, according to the intermediation approach, bank deposits are considered as production factor like other factors used to produce loans. Therefore, total cost is given as the sum of operating costs and interest expenses. Note that this definition does not consider bank deposits as output because they involve expenses more than income. Moreover, the management cost of deposits does not cover necessarily the administrative costs, suggesting that deposit collection is not an objective per se, but used to finance credit.

The decision between these two approaches is not straightforward. This dilemma has stimulated researchers (e.g. Nathan and Neave, 1992), to adopt a hybrid approach that considers deposits and loans as outputs, but without excluding financial costs from production costs (i.e. financial costs are considered as input), where the bank is considered as producer of financial services. In this regard, the bank uses labour and physical capital and consumes goods or services. Thus means that banks produce some of their own financial resources. Despite that deposits involve cost (i.e. interest), they save the cost of funding a bank would otherwise pay on collecting funds on financial markets. When the cost of alternative sources is higher than that of deposits, a bank realises savings through collecting these deposits. This approach is adopted and Total Earning Asset, Total Customer Deposit, and Off-balance sheet items are considered as bank outputs. On the other hand, Total Interest Expense, Staff Expenses, and Administrative Expenses are considered as inputs. For the computation of input prices, the following variables are exploited:

- Price of deposits = Total interest expense/Total customer deposits.
- Price of labour = Staff expenses/Total asset.
- Price of fixed capital = Administrative expenses/Fixed asset.

2.3.2 Model specification

The exploited data set is a panel data that includes banks, which differ in terms of performance and in the adopted corporate governance frameworks. The Panel Fixed Effects method allows considering bank-idiosyncratic effects in the estimations through including individual intercept for each bank in the regression equation. Alternatively, the Panel Random Effects allows taking into consideration two types of unobserved effects influencing the dependent variable: (i) a bank-specific, time-constant effect, assumed random; and (ii) an idiosyncratic time-varying random error. The choice between Random Effects and Fixed Effects methods is based on the (Hausman, 1978) test.

For the empirical estimations, the study will exploit the following model:

$$Y_{it} = \alpha_i + \beta X_{it} + \gamma Z_{it} + \varepsilon_{it}$$

where, Y_{it} is the dependent variables (bank performance indicators) observed for individual *i* at time *t*, X_{it} is the time-variant $1 \times k$ vector of independent variables (the set of corporate governance measures), Z_{it} is a $1 \times k$ vector of control variables, β and γ are $k \times 1$ matrices of parameters, α_i is the unobserved time-variant individual effect, and ε_{it} is the error term. Subscripts *i* and *t* represent bank and year, successively.

2.3.3 Independent and control variables specifications

2.3.3.1 Independent variables

Based on the summary of the literature presented in Appendix G, and in order to test the proposed hypotheses, the four following categories of governance-explanatory variables will be adopted:

a. Ownership structure variables: this category contains two variables: (i) the type of ownership (government/private), and (ii) ownership concentration (the percentage of ownership of the top 3 shareholders).
b. Board characteristics variables: this category contains four variables: (i) board size, (ii) Chairperson/CEO role duality, (iii) the percentage of independent board members, and (vi) the percentage of women in the board.

c. Board committees' variables: this category contains four variables. (i) Audit Committee, (ii) Risk Committee, and (iii) Nomination and Remuneration Committee.
d. External governance variable: in additional to the above ten "internal" governance indicators, one "external" governance variable is added, namely bank's equity-to-asset ratio.

In fact, the adoption of these four categories of corporate governance variables can reveal the impact of several dimensions/perspectives of the implemented corporate governance frameworks in the MENA banks on their performance. Regarding the first category of variables (ownership), and as the MENA banking sectors are characterised with considerable state ownership and high levels of ownership concentrations (blockholdings), we exploit variables representing these two variables in order to capture the existence of any potential conflict of interest, and if exists, how it affects MENA banks performance. Regarding the second category of variables (board structure), and as the MENA banks are mostly run by large boards of directors, many of them adopt (Chairman-CEO) role duality, their independent board members play mostly non-active role, and have low ratios of women on the board, we aim at testing if and how these "weaknesses" may put pressures on banks performance. As for the third category of variables (board committees), and as regulations enforce the division of board duties and responsibilities among several committees in order to maximise board oversight ability and control efficiency, we aim to test whether these committees do result in a better guidance of the boards, resulting eventually in a better performance. Finally, as banks use their solvency and capitalisation ratios as – confidence – signals to stakeholders and markets, capitalisation ratio will be used as an "external" corporate governance variable in order to test its disciplinary impact on MENA banks performance.

2.3.3.2 Control variables

Finally, to complete the models, the following control variables are considered, which are mainly extracted from (Adams & Mehran, 2012), (Wang, Lu, & Lin, 2012), (Saghi-Zedek & Tarazi, 2015), (James & Joseph, 2015), (Salim, Arjomandi, & Heinz, 2016), (Felício, Rodrigues, Grove, & Greiner, 2018), (Grassa, 2018), (Orazalin & Mahmood, 2018), (Ajili & Bouri, 2018) and (Trinh, Elnahass, Salama, & Izzeldin, 2020). To control for the impact of

bank size on efficiency, the natural log of bank total assets is included. The impact of bank age is controlled for by adding the natural log of years since inception. To detect the impact of bank market power, the bank net interest margin is exploited. To test the effect of bank managerial efficiency, the cost-to-income ratio is used. To control for the impact of credit risk, loan-loss-reserves as percentage of gross loans is adopted. The effect of market structure on bank performance is tested by using the banking sector's concentration ratio. Finally, to control for the impact of macroeconomic developments, the real GDP growth rate is exploited.

Table 2.2: Explanation of the exploited independent and control variables

Variable	Explanation
Dependent variables	
Technical efficiency (TE)	Overall efficiency
Return on equity ratio (ROE)	Net income divided by average equity
Return on assets ratio (ROA)	Net income divided by average assets
Cash flows per share (CF)	Net cash flows divided by the number of shares outstanding
Independent variables: internal governance variables	
Ownership type (OWN_TYP)	Dummy variable: 1 for majority government ownership (more than 50%), 0 otherwise
Ownership concentration (OWN_CONC)	The % of ownership of the top 3 shareholders
Board size (BOARD_SIZE)	Number of board members
Duality (DUAL)	Dummy variable: 1 if the chairman is at the same time the CEO/GM, 0 otherwise
Independent members (INDEP_MEM)	The % of independent board members
Board diversity (DIVERS)	The % of women board members
Audit committee (AUD_COMM)	Dummy variable: 1 if the board includes an audit committee, 0 otherwise
Risk committee (RISK_COMM)	Dummy variable: 1 if the board includes a risk committee, 0 otherwise
Nomination and remuneration committee (NOM_REM_COMM)	Dummy variable: 1 if the board includes a nomination and remuneration committee, 0 otherwise
Independent variables: external governance variable	
Bank capital (CAPITAL)	Equity-to-asset ratio

Control variables	
Bank size (SIZE)	Natural log of bank assets
Bank age (AGE)	Natural log of bank age (i.e. the number of years since establishment)
Net interest margin (NIM)	(Interest received – interest paid) divided by average assets
Cost to income ratio (CI)	Total cost divided by total revenue
Loan-loss-provisions (LLP)	Loan-loss-provisions divided by gross loans
Market concentration (CONC)	The top 5 banks' assets as percentage of total sector's assets
GDP growth rate (GDPG)	Real growth rate of gross domestic product

Based on the above, the following equations linking the dependent, independent, and control variables are proposed:

$$TE_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} NIM_{it} + \beta_{14} CI_{it} + \beta_{15} LLP_{it} + \beta_{16} CONC_{it} + \beta_{17} GDPG_{it} + \varepsilon_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} NIM_{it} + \beta_{14} CI_{it} + \beta_{15} LLP_{it} + \beta_{16} CONC_{it} + \beta_{17} GDPG_{it} + \varepsilon_{it}$$

$$ROA_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} NIM_{it} + \beta_{14} CI_{it} + \beta_{15} LLP_{it} + \beta_{16} CONC_{it} + \beta_{17} GDPG_{it} + \varepsilon_{it}$$

$$CF_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} NIM_{it} + \beta_{14} CI_{it} + \beta_{15} LLP_{it} + \beta_{16} CONC_{it} + \beta_{17} GDPG_{it} + \varepsilon_{it}$$

2.4 Data and summary statistics

The empirical estimations in this chapter exploits a dataset formed of the largest 100 banks operating in the following set of MENA countries: Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia, and the United Arab Emirates (UAE). The covered period is 2011-2018 (i.e. 8 years).

Regarding the sources of data, note that the corporate governance data have been collected from bank annual reports and websites. On the other hand, bank assets, liabilities and financial ratios have been extracted from BankFocus database. [19] Finally, GDP growth rates and banking sector's concentration ratios have been extracted from the World Bank database.

As a preliminary analysis of the results, Table 2.2 presents some summary statistics of the variables and Table 2.5 includes the variables correlation matrix, both for the entire sample of banks. On the other hand, Table 2.3 presents some summary statistics for conventional banks only and Table 2.4 presents some summary statistics for Islamic banks only.

From Table 2.2, it is observe that the average technical efficiency for the sample of banks under study is 0.827, which shows that banks still have a room to improve their efficiency. While the most efficient bank has an efficiency score of 1.000, the lowest efficient one has a score of 0.448. The average ROE is 11.746%, with a wide dispersion among the included banks: the maximum ROE is 37.250% and the minimum is -22.450%. ROA, which averaged 1.447%, is also widely dispersed with a maximum of 9.533% and a minimum of -2.580%.

[19] The period under study for this chapter and the following two chapters includes only 2011 onwards because the BankFocus database changed its reporting of bank financial statements according to the international financial reporting standard IFRS9 after the year 2011, while the previous years' financial statements are not. This makes the pre-2011 statements not comparable with the following ones. On the other hand, the last included year is 2018 because while finalising this thesis, even the 2019 financial statements for a considerable number of banks included in the study were still not available.

As for governance variables, the average ownership concentration is 62.561% and ranges from a maximum of 100% to a minimum of 8.580%. The average board size in our sample is 9.409 members, and ranges between and maximum of 14 members and a minimum of 4 members.

Table 2 3: Variables descriptive statistics – all banks

Variable (unit)	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
TE (score)	0.827	0.827	1.000	0.448	0.144	746
ROE (%)	11.746	11.535	37.250	-22.450	5.598	752
ROA (%)	1.447	1.380	9.533	-2.580	0.820	752
CF ($)	0.943	0.894	5.095	-3.556	0.886	752
OWN_CONC (%)	62.561	59.770	100.000	8.580	26.624	757
BOARD_SIZE (members)	9.409	9.000	14.000	4.000	1.626	800
INDEP_MEM (%)	0.522	0.462	1.000	0.000	0.260	775
DIVERS (%)	0.040	0.000	0.333	0.000	0.065	800
DUAL (binary variable)			1	0		800
OWN_TYPE (binary variable)			1	0		800
AUD_COMM (binary variable)			1	0		800
RISK_COMM (binary variable)			1	0		800
NOM_REM_COMM (binary variable)			1	0		800
CAPITAL (%)	12.722	12.332	56.670	3.909	4.816	754
SIZE ($)	16.574	16.532	19.283	13.624	0.946	754
AGE (years)	3.515	3.664	4.787	0.000	0.700	800
NIM (%)	2.939	2.815	10.340	-0.010	1.080	752
CI (%)	42.558	41.115	173.587	9.050	12.711	752
LLP (%)	4.507	3.960	17.740	0.070	2.883	714
CONC (%)	70.308	66.280	100.000	53.460	10.585	800
GDPG (%)	3.217	2.871	13.375	-3.482	2.526	776

The percentage of independent board members averages 52.2% of total board members, with a maximum of 100% to a minimum of 0% showing the large difference among banks included in the sample in terms of independence. The average proportion of women board members in our sample is 4% and ranges from a maximum of 33.3% to a minimum of 0%. As for the other five binary governance variables (DUAL, OWN_TYPE, AUD_COMM, RISK_COMM, and

NOM_REM_COMM), I do not report summary statistics for them. The external governance variable (CAPITAL) shows that capitalisation of banks ranges between a maximum of 56.670% and a minimum of 3.909%, with an average of 12.722%.

As for the control variables, the average assets of banks is $24.83 billion, with a maximum of $236.87 billion and a minimum of $825.8 million. The average bank age is 40.5 years with a maximum of 120 years and a minimum of one year.

Table 2.4: Variables descriptive statistics – conventional banks

Variable (unit)	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
TE (score)	0.821	0.812	1.000	0.477	0.140	578
ROE (%)	12.084	11.825	37.250	-22.450	5.607	584
ROA (%)	1.439	1.370	9.530	-2.580	0.794	584
CF ($)	1.394	1.470	5.576	-4.227	1.388	584
OWN_CONC (%)	65.008	61.330	100.000	8.580	25.985	595
BOARD_SIZE (members)	9.539	9.000	14.000	5.000	1.603	616
INDEP_MEM (%)	0.526	0.444	1.000	0.100	0.271	604
DIVERS (%)	0.045	0.000	0.333	0.000	0.069	616
DUAL (binary variable)			1	0		616
OWN_TYPE (binary variable)			1	0		616
AUD_COMM (binary variable)			1	0		616
RISK_COMM (binary variable)			1	0		616
NOM_REM_COMM (binary variable)			1	0		616
CAPITAL (%)	12.141	12.053	25.559	3.909	3.819	586
SIZE ($)	16.613	16.593	19.283	14.319	0.963	586
AGE (years)	3.689	3.738	4.787	1.386	0.553	616
NIM (%)	2.943	2.785	10.340	-0.010	1.130	584
CI (%)	41.378	39.570	93.780	9.050	11.324	584
LLP (%)	4.366	3.980	17.740	0.560	2.452	549
CONC (%)	70.056	66.280	100.000	53.460	11.243	616
GDPG (%)	3.120	2.800	13.375	-3.482	2.393	592

Table 2.5: Variables descriptive statistics – Islamic banks

Variable (unit)	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
TE (score)	0.848	0.883	1.000	0.448	0.156	168

ROE (%)	10.570	10.670	24.190	-18.100	5.420	168
ROA (%)	1.477	1.425	7.832	-1.970	0.907	168
CF ($)	0.883	0.796	4.003	-2.449	0.683	168
OWN_CONC (%)	53.258	41.900	100.000	14.470	26.540	173
BOARD_SIZE (members)	8.962	9.000	13.000	4.000	1.641	184
INDEP_MEM (%)	0.506	0.556	1.000	0.000	0.216	171
DIVERS (%)	0.022	0.000	0.200	0.000	0.046	184
DUAL (binary variable)			1	0		184
OWN_TYPE (binary variable)			1	0		184
AUD_COMM (binary variable)			1	0		184
RISK_COMM (binary variable)			1	0		184
NOM_REM_COMM (binary variable)			1	0		184
CAPITAL (%)	14.749	13.373	56.670	4.951	6.941	168
SIZE ($)	16.439	16.359	18.394	13.624	0.877	168
AGE (years)	2.935	3.296	3.850	0.000	0.821	184
NIM (%)	2.924	2.865	4.910	0.019	0.886	168
CI (%)	46.662	45.365	173.587	17.400	16.037	168
LLP (%)	4.978	3.880	16.820	0.070	3.969	165
CONC (%)	71.153	68.910	84.860	60.090	7.968	184
GDPG (%)	3.527	3.043	13.375	-3.482	2.898	184

Table 2.6: Variables correlation matrix – all banks

	TE	ROE	ROA	CF	OWN_ TYPE	OWN_ CONC	BOARD_ SIZE	DUAL	INDEP_ MEM	DIVERS	AUD_ COMM	RISK_ COMM	NOM_ REM_ COMM	CAPITAL	SIZE	AGE	NIM	CI	LLP	CONC	GDPG
TE	1																				
ROE	-0.21	1																			
ROA	0.12	0.65	1																		
CF	-015	0.72	0.43	1																	
OWN_ TYPE	0.07	0.02	0.00	0.00	1																
OWN_ CONC	-0.23	-0.02	-0.21	-0.03	0.51	1															
BOARD_ SIZE	-0.19	0.01	-0.06	0.00	-0.20	-0.09	1														
DUAL	-0.21	0.18	-0.10	0.15	-0.12	0.09	0.09	1													
INDEP_ MEM	-0.07	-0.02	-0.05	-0.01	0.27	0.21	-0.03	-0.13	1												
DIVERS	-0.34	0.09	-0.15	0.12	0.13	0.27	0.08	0.23	0.13	1											
AUD_ COMM	0.05	0.03	0.06	0.04	-0.09	-0.13	0.09	0.00	-0.15	-0.03	1										
RISK_ COMM	-0.11	-0.02	-0.07	-0.05	0.04	0.02	0.09	0.16	-0.16	0.11	0.32	1									
NOM_ REM_ COMM	0.03	0.10	0.08	0.15	-0.01	-0.04	0.06	0.02	-0.03	-0.12	0.23	0.09	1								
CAPITAL	0.46	-0.15	0.41	-0.10	0.01	-0.33	-0.15	-0.43	-0.06	-0.32	0.04	-0.12	0.04	1							
SIZE	0.17	0.16	0.11	0.14	0.13	-0.19	-0.01	0.01	-0.01	-0.11	0.12	-0.03	0.31	-0.05	1						
AGE	-0.28	0.11	-0.10	0.08	-0.04	0.17	0.29	0.25	-0.11	0.23	0.07	0.13	-0.02	-0.36	0.15	1					
NIM	-0.29	0.45	0.39	0.33	0.12	-0.02	-0.03	-0.07	-0.04	0.15	0.04	0.07	-0.09	0.08	-0.10	0.10	1				
CI	-0.15	-0.43	-0.46	-0.50	-0.02	0.23	0.11	0.12	0.03	0.22	-0.02	0.16	-0.19	-0.23	-0.27	0.05	-0.16	1			
LLP	-0.26	-0.19	-0.27	-0.22	0.18	0.21	0.06	-0.06	0.13	0.20	-0.08	0.05	-0.01	-0.15	-0.15	0.17	0.08	0.16	1		
CONC	0.18	-0.06	0.01	-0.07	-0.15	-0.36	-0.09	-0.07	-0.15	-0.08	0.02	0.06	0.05	0.14	0.00	-0.21	-0.03	-0.11	-0.15	1	
GDPG	0.02	0.14	0.19	0.18	0.06	-0.02	-0.14	-0.07	0.05	-0.03	-0.21	-0.28	-0.09	0.21	-0.08	-0.24	0.12	-0.12	-0.09	0.19	1

The net interest margin ratio averages 2.939% and ranges between a maximum of 10.340% and a minimum of -0.010%. The cost-to-income ratio in our sample recorded an average of 42.558% with a maximum of 173.587% and a minimum of 9.050%. The average credit risk (LLP) is 4.507%, and ranges between a maximum of 17.740% and a minimum of 0.070%. The concentration of banking sectors recorded an average of 70.308%, and ranges between 100% and 53.460%. Finally, the average economic growth in the included countries is 3.217% with a maximum of 13.375% and a minimum of -3.482%.

On the other hand, the figures reported in Table 2.5 present a preliminary idea about the associations between bank performance measures and the set of corporate governance and control variables. The state ownership is positively correlated with all performance measures, which contradicts the expectations stated above. Conversely, ownership concentration is negatively correlated with the three performance measures, which is indeed consistent with the expectations. Board size and role duality are negatively correlated with both technical efficiency and ROA (as expected) but positively correlated with ROE. The percentage of independent directors is negatively correlated with all performance measures, which is consistent with the expectations. In contrast, the percentage of women board members is only positively correlated with ROE (as expected), but negatively correlated with both TE and ROA. The presence of audit committee and nomination and remuneration committee is positively correlated with all performance measures, which is consistent with the expectations. Conversely, the presence of risk committee is negatively correlated with all performance measures, which contradicts the expectations.

2.5 Empirical results

As mentioned previously, the business models, activities, products, and balance sheet structures of Islamic banks differ significantly from those of conventional banks, which may result in different performance between the two categories of banks. In addition, as explained in Chapter One, the corporate governance structures of Islamic banks differ from those of conventional banks, as well as many aspects of regulations and requirements related to corporate governance. Consequently, the impact of corporate governance on bank performance may depend on the type of a bank, which makes it necessary and logical to split the dataset under study into two sub-sets (conventional and Islamic) in order to better capture the impact

of corporate governance on bank performance. In the next section, the impact of the adopted independent and control variables on conventional bank performance is detected, and then in the following section the impact on Islamic banks is tested.

2.5.1 Estimations for conventional banks

Table 2.6 includes the regression estimated parameters with their corresponding t-Statistics. The table presents the results of the impact of corporate governance on efficiency and profitability measures of MENA conventional banks. Column 2 presents the parameters describing the influence on Technical Efficiency, Column 4 on Return on Equity, Column 6 on Return on Assets, and finally Column 8 on CF.

The estimated models for conventional banks' TE and ROE and CF are done using Fixed Effects panel data models. The Fixed Effect specification is chosen based on the Hausman Test, which rejected the null hypothesis of randomness in the effect as can be seen from the Chi-squared Statistics in the last three rows of Table 2.5. Conversely, the model for ROA is performed with Random Effect panel data model since the probability of Chi-squared Statistics for this model is more than the conventional 5% level, and hence the null hypothesis of random effect cannot be rejected. The F-statistics in Table 2.6 show that all models are appropriate, as the null of poor specification has been rejected at the 1% significance level. The Durbin-Watson statistics suggest the lack of autocorrelation among the models' errors. Finally, the explanatory variables included explain 87.4% of the variation in the TE of banks, 74.9% of banks' ROE model, 37.5% of banks' ROA and 64.9% for CF. Hence, these specifications are adequate and appropriate in assessing the influence of corporate governance on conventional bank efficiency and performance.

Now after assessing the conventional bank models overall, the effect of individual independent and control variables on the efficiency and performance measures will be analysed.

Table 2.7: The impact of corporate governance variables on conventional banks' efficiency and performance

	TE		ROE		ROA		CF	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
OWN_TYPE	0.042	0.838	0.617	0.209	0.045	0.455	0.520	1.453
OWN_CONC	-5.71E-06	-0.647	0.0001	0.349	4.00E-05	0.464	0.0003	0.593
BOARD_SIZE	-0.008*	-1.787	0.388	1.547	0.013	0.547	-0.994	-1.544
DUAL	-0.056**	-2.413	-3.045**	-2.229	0.103	1.137	-2.923***	-2.391
INDEP_MEM	0.004	0.137	-1.620	-0.919	-0.041	-0.267	-1.004	-1.057
DIVERS	0.212**	2.311	3.328	0.621	-0.109	-0.194	1.740**	2.135
AUD_COMM	-0.002	-0.203	-0.331	-0.477	-0.095	-0.949	-0.460	-0.952
RISK_COMM	-0.006	-0.460	0.313	0.413	-0.006	-0.063	1.451	0.992
NOM_REM_COMM	0.031**	2.413	0.473	0.624	-0.015	-0.164	0.671	1.042
CAPITAL	0.005**	2.365	-0.475***	-3.892	0.060***	5.102	-0.549**	-2.293
SIZE	0.002	0.077	-2.857***	-2.342	0.057	1.248	-1.790**	-2.099
AGE	0.047	1.122	-1.283	-0.525	-0.011	-0.139	-2.395	-0.109
NIM	-0.011*	-1.844	3.573***	9.840	0.321***	9.266	4.563***	6.439
CI	-0.001**	-2.092	-0.196***	-6.236	-0.017***	-4.595	-0.366***	-5.369
LLP	-0.001	-0.585	-0.425***	-4.164	-0.065***	-4.924	-1.653**	-2.222
CONC	0.002**	2.286	0.046	0.797	-0.008*	-1.913	0.458	0.709
GDPG	-0.003**	-2.399	0.081	0.960	0.035***	2.856	0.204	0.229
C	0.553	1.601	63.807***	3.162	0.239	0.259	20.009***	2.446
R-squared	0.874		0.749		0.375		0.649	
F-statistic	33.778		14.568		17.488		15.629	
Prob(F-statistic)	0.000		0.000		0.000		0.000	
DW statistic	1.801		1.864		1.669		1.991	
Number of banks	77		77		77		77	
Number of obs.	513		513		513		513	
Hausman test								
Chi-Sq. Statistic	36.885		44.191		23.500		39.349	
Prob.	0.003		0.000		0.134		0.000	
Model	FE		FE		RE		FE	

Notes:
For a sample of 77 conventional MENA banks, I estimate the impact of corporate governance on bank performance using panel data econometrics, over the period 2011-2018. Bank performance is proxied by three variables: technical efficiency (TE), return on equity (ROE), return on assets (ROA) and cash flows per share. Corporate governance variables are: the type of ownership (OWN_TYPE), ownership concentration (OWN_CONC), board size (BOARD_SIZE), role duality (DUAL), the percentage of independent board members (INDEP_MEM), the percentage of women board members (DIVERS), the existence of an Audit Committee (AUD_COMM), the existence of a Risk Committee (RISK_COMM), and the existence of a Nomination and Remuneration Committee (NOM_REM_COMM). Bank equity-to-asset ratio is added as an "external" governance variable. As control variables, I add the natural log of bank total assets (SIZE), the natural log of years since bank establishment (AGE), bank net interest margin (NIM), cost-to-income ratio (CI), loan-loss-reserves as percentage of gross loans (LLP), the banking sector concentration ratio (CONC), and the real GDP growth rate (GDPG).
*** Significantly different from zero at the 1% level.
** Significantly different from zero at the 5% level.
* Significantly different from zero at the 10% level.

First, it seems that ownership has little influence on bank efficiency and performance as the parameters associated with OWN_TYPE are insignificant. This result, which is in line with (Ben Zeineb & Mensi, 2018) on GCC banks, (Love & Rachinsky, 2015) on Russian banks, and (Saghi-Zedek & Tarazi, 2015) on European banks, does not support hypothesis H1, which hypothesised the existence of a negative impact of state ownership on bank performance. Therefore, state ownership in banks does not show to result in conflict of interest or lower managerial ability to allocate recourses and manage assets, or that state banks have inflated salaries and other benefits. The data show a considerable proportion of large banks that are owned by the governments in the MENA region. Particularly, this is the case of the majority of Algerian, Egyptians, and Libyan banks, in addition to many large banks in Qatar, Saudi Arabia, and UAE. More specifically, six out of the largest 10 conventional banks are government-owned, and out of the largest 15 conventional banks, there are eight government-owned ones. Therefore, our empirical these results also suggest that large government-owned banks benefit from scale and scope economies similarly to privately owned banks.

Secondly, and consistent with (Salim, Arjomandi, & Heinz, 2016) on Australian banks, the parameter associated with ownership concentration is insignificant. This shows that with ownership concentration, conventional bank performance is not deteriorating. As OWN_CONC does not capture any significant impact on any performance and efficiency measure, there is sufficient evidence that leads to rejecting hypothesis H2, which hypothesised the existence of a positive effect of ownership concentration on bank performance. This result is somehow related to the impact of the ownership type, since state ownership in the largest MENA banks is either total (e.g. for Algerian, Egyptian, and Libyan banks) or with considerable majority (e.g. for Kuwaiti, Qatari, Saudi, and UAE banks). Therefore, a large concentration in ownership in MENA conventional banks does not affect – on average – management lending or investment decisions.

Table 2.6 shows that the size of the board matters for efficiency but not for profitability. The table shows that board size have a negative and significant impact on the technical efficiency of banks in the MENA region, a result which was also found by (Salim, Arjomandi, & Heinz, 2016) on Australian banks and (Mamatzakis & Bermpei, 2015) on U.S. banks. This suggests that banks with larger boards are relatively less efficient. Note that the largest boards are concentrated mainly in conventional Bahraini, Jordanian, Lebanese, Moroccan and Saudi

banks, where the majority of them have boards of 10 or more members. Conversely, the majority of Algerian, Egyptian, Kuwaiti, Libyan, Omani, Qatari, and UAE banks have boards of 9 members or less. Overall, this result supports hypothesis H3, which hypothesised a negative association between larger boards and bank performance. Therefore, a larger number of board members may result in a loss of coordination and communication, increased disagreements, and blocking or delaying decision-making, in addition to weakening the monitoring and advising function of board of directors. An interesting remark here is that despite the negative effect of board size on bank efficiency, similar impact on profitability (ROE and ROA) is not observed. A similar finding was recorded by (Ayadi, Ayadi, & Trabelsi, 2019) on Eurozone banks, (Battaglia & Gallo, 2015) on Indian and Chinese banks, and (Grove, Patelli, Victoravich, & Xu, 2011) and (Mamatzakis & Bermpei, 2015) on U.S banks. This may suggest that in poorly managed banks, management might be able to boost profitability, but not in a sustainable manner.

Duality, or the combination of chairperson and chief executive officer roles is shown to be a depressing factor for both efficiency (TE) and profitability (ROE and CF) in MENA conventional banks, which is shown by the negative and significant effect (at the 5% level) of DUAL on TE as well as on ROE. These estimates consist with (De Jonghe, Disli, & Schoors, 2012) on Turkish banks and (Liang, Xu, & Jiraporn, 2013) on Chinese banks, and support hypothesis H4, which hypothesised a negative effect of duality on bank performance.[20] This concentration of power may result in a conflict of interest, weakens the oversight of management decisions and activities, and may call for the separation of the chairperson and CEO roles. This is crucial as in many MENA banks the CEO and the Chairman of the Board is the same person. This applies to the majority of conventional banks Algeria, Egypt, Lebanon and Morocco. Therefore, this result – which is consistent with the agency theory – may suggest that duality is a weakness in MENA bank corporate governance structure.

The percentage of independent board members is not an important determinant of MENA conventional bank performance, and a higher proportion of outside directors does not seem to improve these banks efficiency of profitability, as the associated parameters are all insignificant in the estimated models. Note that the largest percentages of independent board

[20] On the other hand, the lack of impact of duality on ROA found is in line with (Harkin, Mare, & Crook, 2020) on UK banks.

members are found in the state-owned conventional Algerian, Egyptian and Libyan banks, which is the case of similar Qatari, Saudi and UAE banks. In fact, many previous studies have found no impact of this variable on bank efficiency and profitability, e.g. (Mamatzakis & Bermpei, 2015) and (Grove, Patelli, Victoravich, & Xu, 2011) on U.S. banks, (Bokpin G. A., 2013) on Ghana banks, and (Belhaj & Mateus, 2016) on European banks. Therefore, this may lead to the rejections of hypothesis H5, which suggests that independent board members in MENA banks do actively engage in monitoring bank activities, participating in board activities, or over-sighting of management decisions. Another explanation for this result is that independent directors maybe appointed only to meet regulatory requirements, without any consideration for their qualifications and experiences. Overall, this result does not add support the hypothesis that outside directors participate in alleviating conflicts of interests between insider directors and shareholders and increase the effectiveness of board supervision.

Conversely, the percentage of women on MENA conventional bank board of directors shows to add value to efficiency and profitability of these banks, as DIVERS captures a positive and significant effect on TE and CF (both at the 5% level), thus supporting hypothesis H6, which suggests that a higher percentage of women board is associated with better performance. Therefore, despite the overall low proportion of women board members in the sample of conventional MENA bank under study,[21] gender diversity does add value to their performance in terms of efficiency. Note here that while the effect of board gender diversity on efficiency is consistent with (Adeabah, Gyeke-Dako, & Andoh, 2019) on Ghana banks, its lack of effect on ROE and ROA is also consistent with (Dedu & Chitan, 2013) on Romanian banks and (Mamatzakis & Bermpei, 2015) on U.S. banks.

Regarding the impact of board committees on bank performance, it is noticed that the presence of audit and risk committees does not add value to the efficiency and profitability of MENA conventional banks, since these two variables capture negative but insignificant effect on the adopted performance measures, leading to the rejection of hypothesis H7, which hypothesised a positive impact of these committees on bank performance. In fact, as the role of these two committees is more concentrated towards monitoring and over-sighting bank risks, thus their

[21] In 2018, this proportion of women in bank board ranges between 0 and 33.3% in our sample of conventional banks, with an overall average of 6%.

benefit (or their positive effect) may materialise in other areas such as the riskiness and stability of banks, which will be tackled and tested in a following chapter.

An opposite result is found regarding the effect of the nomination and remuneration committee: the existence of this committee that plays an active role in the employees' selection, nomination, promotion, and rewarding decisions and processes, results in developing and preserving bank's human capital, which in turn results in a better efficiency. This is translated by the positive and significant effect (at the 5% level) of NOM_REM_COMM on TE, which in fact represents a support to hypothesis H7, which hypothesised a positive association between the presence of this committee and bank performance.[22] The important role of this committee is highlighted by Basel Committee recommendations that banks should have a compensation committee to supervise the design and the functioning of a compensation system. Besides, this committee is required to evaluate the practices by which compensations are paid for potential future income, where it should work closely with the risk committee to assess the incentives created by the compensation system.

Regarding the effect of the "external" corporate governance measure, i.e. bank capitalisation ratio, it is noticed that this factor does have a constructive effect on bank performance, shown by the positive and significant effect of CAPITAL on both TE (at the 5% level) and ROA (at the 1% level). This suggests that higher capitalisation allows banks to engage in more lucrative lending and investment businesses and activities (as per Basel rules), which allow it to enjoy higher performance. Nevertheless, the negative association between CAPITAL and both ROE and CF could be explained by the fact that the extra profits generated by the additional lending and investment may not compensate the added held equity, resulting in a lower ROE and CF.

As for the effect of the exploited control variables, the following is observed. Larger MENA conventional banks do not seem to have better performance than their smaller counterparties, since SIZE has an insignificant effect on TE and ROA. Nevertheless, the negative impact of SIZE on ROE (significant at the 1% level) and CF (at the 5% level) may suggest that profits generated by large banks are not enough to compensate for the additional buffer they are required to hold.

[22] Nonetheless, no significant impact of this committee on both ROE and ROA is observed, a result that was previously found by (Ayadi, Ayadi, & Trabelsi, 2019) on Eurozone banks.

The age of conventional banks operating in the MENA region does not add value to their performance and thus, this variable is found to be unable to differentiate between banks in terms of performance. Therefore, despite the fact that longer age is supposed to result in more experience, and thus better performance, this is not the case of the banks under study.

NIM shows to have contrasting effects on efficiency (negative and significant) and profitability (positive and significant), suggesting that this variables boosts profitability but depresses efficiency. An explanation for this result could be that higher interest margins do result in higher profits for banks. However, it seems that banks with higher market and pricing powers (i.e. higher interest margins) do not make efforts to operate efficiently or adopt an optimal allocation of resources, as they enjoy "easy returns".

The negative and significant effect of CI on all performance and efficiency measures shows that MENA conventional banks that are unable to control their costs suffer a deterioration in their efficiency and profitability. Similarly, higher credit risk worsens bank performance, shown by the negative impact of LLP on all performance measures, with particular significance on ROE and ROA (both at the 1% level) and CF (at the 5% level). Therefore, higher credit risk is not compensated with higher profits at MENA conventional banks, but is companied with more write-offs.

Higher market concentration may result in elevated competition among banks, which pushes banks to operate more efficiently in order to withstand this competition, and this fact is shown by the positive and significant impact (at the 5% level) of CONC on TE. Nevertheless, the results show that MENA conventional banks are unable to translate this efficiency into higher profitability since the competition forces them to lower their prices considerably.

Finally, the results show that economic growth improves significantly bank ROA as better economic conditions encourage banks to expand lending and supply more credit, resulting in higher revenues. Thus suggests that the profitability of MENA conventional banks is pro-cyclical. In parallel, the negative and significant impact of GDPG on TE may be resulted from paying higher interest on deposits by banks (to boost their lending capacity) and on labour (to hire more staff) during good economic conditions, and vice versa.

2.5.2 Estimations for Islamic banks

This section tests the impact of the adopted corporate governance variables and the additional control variables on MENA Islamic banks efficiency and performance, and the results are included in Table 2.7.

Note that the models for Islamic banks' TE, ROA and CF have been performed according to Random Effects, since their probability of Chi-square exceed 5%, while the models for ROE is performed according to Fixed Effects since the probability of Chi-square of the estimation is below 5%. The F-statistics in Table 2.7 show that all models are appropriate, as the null of poor specification has been rejected at the 1% significance level. The Durbin-Watson statistics suggest the lack of autocorrelation among the models' errors. Finally, the explanatory variables included explain 40.6% of the variation of Islamic banks' TE, 79.8% of ROE, 40.9% of ROA, and 70.3% of CF. Hence, these specifications can be considered as adequate and appropriate in assessing the influence of corporate governance on Islamic bank efficiency and performance.

After assessing the Islamic bank models overall, the effect of individual independent and control variables on the performance measures is analysed in the following.

Table 2.8: The impact of corporate governance variables on Islamic banks' efficiency and performance

	TE		ROE		ROA		CF	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
OWN_TYPE	0.082*	1.925	2.898	0.889	-0.072	-0.255	1.336*	1.769
OWN_CONC	-0.003***	-3.459	0.071	1.410	-0.009*	-1.846	0.335	1.558
BOARD_SIZE	0.004	0.403	-1.829***	-2.924	-0.024	-0.367	-0.992**	-2.099
DUAL	-0.054**	-2.176	2.093	1.597	0.166	0.867	3.967	1.223
INDEP_MEM	-0.123***	-2.923	-3.271	-1.455	-0.268	-0.817	-2.550*	-1.701
DIVERS	-0.162	-0.883	1.426	0.147	-0.635	-0.451	1.920	0.619
AUD_COMM	0.019	0.802	2.756**	2.026	0.086	0.479	4.394**	1.992
RISK_COMM	-0.009	-0.392	2.172*	1.749	0.193	1.157	1.931**	2.001
NOM_REM_COMM	-0.182***	-3.469	-0.370	-0.104	-0.187	-0.527	-0.220	-0.209
CAPITAL	0.008***	3.535	-0.233*	-1.675	0.034**	2.079	-0.102*	-1.821
SIZE	-0.027	-0.975	-1.839	-0.781	-0.129	-0.725	-1.110	-0.021
AGE	-0.019	-0.753	0.110	0.055	-0.073	-0.443	0.410	0.100
NIM	-0.024*	-1.801	1.544**	2.013	0.118	1.189	0.997***	3.339
CI	-0.002**	-2.394	-0.231***	-4.900	-0.049***	-7.558	-0.030***	-5.559
LLP	0.0002	0.053	-0.229	-1.143	-0.001	-0.056	-0.664	-0.159
CONC	0.005***	3.277	-0.011	-0.115	-0.018	-1.591	-0.009	-1.045
GDPG	-0.005***	-2.197	-0.002	-0.013	0.011	0.659	-0.010	-0.039
C	1.311***	2.733	55.707*	1.713	7.316**	2.256	18.448**	1.992
R-squared	0.406		0.798		0.409		0.703	
F-statistic	5.302		11.115		5.371		12.640	
Prob(F-statistic)	0.000		0.000		0.000		0.000	
DW statistic	1.931		1.938		1.687		1.901	
Number of banks	23		23		23		23	
Number of obs.	150		150		150		150	
Hausman test								
Chi-Sq. Statistic	24.263		28.279		25.836		22.339	
Prob.	0.113		0.042		0.078		0.104	
Model	RE		FE		RE		RE	

Notes:
For a sample of 23 conventional MENA banks, I estimate the impact of corporate governance on bank performance using panel data econometrics, over the period 2011-2018. Bank performance is proxied by three variables: technical efficiency (TE), return on equity (ROE), return on assets (ROA), and cash flows per share. Corporate governance variables are: the type of ownership (OWN_TYPE), ownership concentration (OWN_CONC), board size (BOARD_SIZE), role duality (DUAL), the percentage of independent board members (INDEP_MEM), the percentage of women board members (DIVERS), the existence of an Audit Committee (AUD_COMM), the existence of a Risk Committee (RISK_COMM), and the existence of a Nomination and Remuneration Committee (NOM_REM_COMM). Bank equity-to-asset ratio is added as an "external" governance variable. As control variables, I add the natural log of bank total assets (SIZE), the natural log of years since bank establishment (AGE), bank net interest margin (NIM), cost-to-income ratio (CI), loan-loss-reserves as percentage of gross loans (LLP), the banking sector concentration ratio (CONC), and the real GDP growth rate (GDPG).
*** Significantly different from zero at the 1% level.
** Significantly different from zero at the 5% level.
* Significantly different from zero at the 10% level.

In contrast to the case of conventional banks, state ownership in Islamic banks boosts their efficiency, since OWN_TYPE affects positively TE and CF (both significant at the 10% level). This result leads to rejecting hypothesis H1 for the case of Islamic banks. This superiority in efficiency of state-owned Islamic banks in our sample could be the result of their access to cheaper – government – deposits (thus lower cost of borrowing), noting that government-owned banks count 11 out of the studied 23 Islamic banks. A similar impact/advantage for conventional banks is not observed, maybe because the proportion of state-owned banks in the sample of conventional banks is less than that of the Islamic ones. Specifically, the conventional state-owned banks in our sample are 22 out of 77 conventional banks.

Conversely, ownership concentration may create conflicts within the MENA Islamic banks, resulting in lower efficiency and performance, which is shown by the negative impact of OWN_CONC on TE (significant at the 1%) and on ROA (significant at the 10% level),[23] thus leading to rejection of hypothesis H2. One more explanation is that the multi-layer characteristic of Islamic banks (i.e. the existence of two boards) may result in diluting board of directors' power, supervision and control, while providing larger shareholders more power that may cause biases in the management of these banks. This result is different from that obtained for conventional banks, suggesting that dominant ownership harms only the performance of Islamic banks.

Regarding the impact of board size on performance, the results show that larger boards result in significantly deteriorating Islamic banks' ROE and CF, and slightly on ROA, which consist with (Awadh & Abdul Rahman, 2015) on GCC Islamic banks and (James & Joseph, 2015) on Malaysian banks. This finding supports hypothesis H3 and suggests that Islamic MENA banks do not benefit from the existence of more board members, which (maybe) are appointed to fulfil regulatory requirements and not based on their expertise and experience, or the "over-supervision" creates conflicts and hinders the decision-making process and thus performance. It is worth noting that the size of Islamic bank board of directors differs among MENA countries, where for instance, Bahraini, Kuwaiti and Saudi banks have boards of a minimum of 9 members, while Qatari and UAE banks have boards of a maximum of 9 members.

[23] Interestingly, ownership concentration in Islamic banks not only harms their financial performance, but lowers also their level of disclosures (Grassa, 2018).

The empirical results show that DUAL affects negatively and significantly (at the 5% level) TE, which reveals that CEO-chair duality,[24] i.e. power concentration, deteriorates the efficiency of MENA Islamic banks. Similar result was also found by (Ben Zeineb & Mensi, 2018). Nevertheless, the negative impact that supports hypothesis H4 seems to be less acute than that recorded for conventional banks, maybe due to the existence of an additional supervisory board (the Sharia board) that may participate in controlling the power of the CEO-chairman. No significant impact was recorded on ROE, consistently with (Awadh & Abdul Rahman, 2015); and on ROA, also consistently with (Mollah & Zaman, 2015).

Higher proportion of independent board members represents a burden for Islamic banks, shown by the negative impact of INDEP_MEM on all exploited performance efficiency measures, and significant (at the 1% level) for TE and (at the 10% level) for CF. The 2018 data show that the percentage of independent board members in the sample of Islamic banks was 51%, showing the considerable proportion of this type of board members. Again, this provides support to hypothesis H5 in the context of Islamic banks and may conclude that filling the required positions of independent directors is not based on their knowledge in banking, and mainly Islamic banking, but only to meet governance requirements, or based on connections. One last observation regarding independent board members is that they are not only unable to mitigate the conflict of interest between “inside board members” and shareholders, but they may also cause an amplification of these conflicts.

The insignificant impact of DIVERS reveals that the percentage of women board member does not affect MENA Islamic banks performance and efficiency, leading to the rejection of hypothesis H6. This could be because the proportion of women board members in Islamic banks ranges between 0 and 14.3% in 2018, with an average of 2.9% in our sample of Islamic banks.

Conversely to conventional banks, audit and risk committees do improve the profitability of Islamic banks, shown by the positive and significant impact of AUD_COMM and RISK_COMM on ROE and CF, demonstrating support to hypothesis H7. Therefore, it might be concluded that these committees play a more important role in Islamic banks whose activities are supposed to be subject to more monitoring to confine their compliance with the

[24] This practice is concentrated mainly at Qatari Islamic banks.

Sharia rules. In contrast, and surprisingly, the existence of a nomination and remuneration committee results in a lower performance and efficiency, which is shown by the negative effect of NOM_REM_COMM on all exploited measures and significant for TE (at the 1% level). This result leads rejecting hypothesis H7 in the context of Islamic banks.

The external corporate governance measures (CAPITAL) captures similar effect in Islamic banks as in conventional ones, where a higher capitalisation improves efficiency and return on assets; however, the additionally generated profits do not compensate for the added equity.

Regarding the exploited control variables, it is observed that they affect Islamic banks in a similar way to conventional banks, with few exceptions. For instance, all Islamic banks record similar performance measures regardless of their size. Secondly, LLP does not capture a significant effect on Islamic banks efficiency and profitability. Thirdly, market concentration allows Islamic banks to improve their technical efficiency, and not at the expense of their profitability. Finally, Islamic bank profitability is not pro-cycle, as GDPG does not boost ROE or ROA.

2.5.3 Comparison of the results with the literature and the differences between conventional and Islamic banks

The estimations on the impact of corporate governance variables on bank value show many difference between conventional and Islamic banks. Table 2.8 reports these differences in addition to the expected impact of the adopted variables, which are listed in the second column of the table. Note firstly that – in general – the studies summarised in Section 2.2 suggest that state ownership and a high concentration in ownership result in a lower bank value. Similarly, larger board, high proportion of independent directors, and CEO-chairman duality, deteriorate bank performance. While in contrast, higher proportion of women board members and the existence of audit, risk, and nomination and remuneration committees improve bank performance.

Overall, the results obtained on the sample of largest 100 MENA banks are different from those reported by the literature in many aspects. First, it is found that state ownership shows to have insignificant impact for conventional banks, and even improves Islamic banks' performance, which contradicts the findings of the literature. Second, the impact of ownership concentration on conventional and Islamic banks performance is not in line with the literature, and for the

latter in particular, higher concentration in ownership deteriorates bank performance. Third, the impact of board size on both types of banks is overall, in line with the literature, and board size is inversely related to performance. Fourth, the obtained results on the effect of duality are consistent with the literature, showing that a power concentration results in poorer bank performance. Fifth, the effect of the proportion of outside directors consists with the literature for Islamic banks only, while the results on the impact of board gender diversity diverge from those of the literature for both types of banks. Sixth, regarding board committees, the existence of audit and risk committees in Islamic banks results in the expected effect (improving bank performance), while only the effect of a nomination and remuneration committee in conventional banks have an impact that is in line with the finding of the literature.

Table 2.9: Comparison of the results with the literature and the differences between conventional and Islamic banks

	Expected impact	Actual impact							
		Conventional banks				Islamic banks			
		TE	ROE	ROA	CF	TE	ROE	ROA	CF
OWN_TYPE	-	+	+	+	+	+ (10%)	+	-	+ (10%)
OWN_CONC	+	-	+	+	+	- (1%)	+	- (10%)	+
BOARD_SIZE	-	- (10%)	+	+	-	+	- (1%)	-	- (5%)
DUAL	-	- (5%)	- (5%)	+	- (1%)	- (5%)	+	+	+
INDEP_MEM	-	+	-	-	-	- (1%)	-	-	- (10%)
DIVERS	+	+ (5%)	+	-	+ (5%)	-	+	-	+
AUD_COMM	+	-	-	-	-	+	+ (5%)	+	+ (5%)
RISK_COMM	+	-	+	-	+	-	+ (10%)	+	+ (5%)
NOM_REM_COMM	+	+ (5%)	+	-	+	- (1%)	-	-	-
CAPITAL		+ (5%)	- (1%)	+ (1%)	- (5%)	+ (1%)	- (10%)	+ (5%)	- (10%)
SIZE		+	- (5%)	+	- (5%)	-	-	-	-
AGE		+	-	-	-	-	+	-	+
NIM		- (10%)	+ (1%)	+ (1%)	+ (1%)	- (10%)	+ (5%)	+	+ (1%)
CI		- (5%)	- (1%)	- (1%)	- (1%)	- (5%)	- (1%)	- (1%)	- (1%)
LLP		-	- (1%)	- (1%)	- (5%)	+	-	-	-
CONC		+ (5%)	+	- (10%)	+	+ (1%)	-	-	-
GDPG		- (5%)	+	+ (1%)	+	- (1%)	-	+	-

Notes: significance level in parentheses.

Regarding the differences between the results obtained for conventional and Islamic banks, the main difference is found on the impact of ownership on bank performance. Particularly, where state ownership and ownership concentration do not have any impact on conventional banks performance, the former improves Islamic banks performance, and the latter deteriorates it. Another clear difference is observed regarding the effect of board diversity: more women on the board boosts conventional banks performance, while it does not have any impact on Islamic banks. In addition, the existence of audit and risk committees seems to be useful only for Islamic banks, while the opposite is true for the nomination and remuneration committee.

2.6 Conclusion

This chapter studied the impact of nine corporate governance variables that are extracted from the literature on four performance and efficiency measures of the largest 100 MENA banks over the period 2011-2018. As the MENA region contains a large number of Islamic banks, and in order to better capture the different impact of the adopted explanatory variables on Islamic and conventional banks, the sample under study was split into two sub-samples: 77 conventional and 23 Islamic banks.

Overall, the results for conventional banks show that larger boards of directors and CEO-chairman duality harm performance. These results suggest that smaller boards are indeed more efficient in decision-making and oversight, and power concentration leads to conflicts of interest or maybe even an abuse of power. Conversely, board gender diversity and the presence of a nomination and remuneration committee add value to bank performance and efficiency. This suggests that more women on board brings more balance and rationality to decision making, and that the presence of a board committee that oversights and monitors the selection, promotion, and rewarding processes of staff results in improving bank's human capital, which in turn enhances its performance.

For Islamic banks, it is shown that state ownership is a booster of performance, while ownership concentration, board size, role duality, and higher proportion of independent directors are all impediments for efficiency and/or profitability. Firstly, it could be argued that state ownership provides cheap funding to Islamic banks (i.e. government deposits), which help them lowering their cost of funding. Secondly, larger ownership concentration results in conflict of interest and management decision-making bias. Thirdly, and similar to conventional

banks, larger boards and power concentration worsens performance. Fourthly, a higher percentage of independent board members may represent a burden for these banks and complicates or delays the decision making process. Finally, the presence of audit and risk committees is crucial for Islamic banks to guarantee their confinement with risk limits and tolerance, which eventually support their performance.

Chapter Three: The Impact of Corporate Governance on MENA Banks Value

3.1 Introduction

Effective corporate governance practices are essential to achieving and maintaining public trust and confidence in banks, which are critical to the proper functioning of the banking sector and the economy as a whole. It has been argued that poor corporate governance can contribute to bank failures, which in turn poses significant macroeconomic consequences due to their impact on the deposit insurance system and the broader economy. Besides, poor corporate governance can lead to loss in confidence about the ability of a bank to properly manage its assets and liabilities, including deposits, which could in turn trigger bank run. Consequently, markets consider bank corporate governance news a major predictor of future performance and risk, which determine stock returns (Carlini, Cucinelli, Previtali, & Soana, 2020). Due to the important financial intermediation role of banks in an economy, the public and the market have a high degree of sensitivity to difficulties arising from corporate governance deficiencies in banks. The complexity of the banking business increases information asymmetry and weakens stakeholders' ability to monitor bank management's decisions. Despite the fact that this information asymmetry is found in all sectors, the problem arising for financial intermediaries may be amplified by the complexity of banking business, where banks have the ability to take on risk very quickly, which may not be immediately visible to outsiders.

The last global financial crisis in 2008 pointed out the importance of corporate governance practices in the banking industry and this topic have received a great attention (Grove, Patelli, Victoravich, & Xu, 2011), and the poor corporate governance in the financial sector has been blamed to be a major cause of the crisis. Hence, many studies have started to focus on the different aspects of corporate governance of banks. These aspects extend from board characteristics and ownership to other aspects such as gender and duality (Fahlenbrach & Slutz, 2011). Investors normally discount the values of weakly governed companies relative to other companies and the linkages between corporate governance and bank value is important and is seen as a stimulus to formulate efficient corporate strategies at the company level and public regulatory policies at the government level in order to promote investment and growth (Becht, Bolton, & Röell, 2011).

This chapter aims to explore how corporate governance influences market valuation of banks. The nature of bank activities and how they are managed affect valuation and hence, the governance framework is important in the valuation of companies. A large literature has aimed

at studying the association between sound corporate governance mechanisms and the market value of banks, in the developed and developing countries. However, results were inconclusive. Until now, still there is no consensus on the impact of certain corporate governance variables such as board composition and ownership structure on the market value of banks. The influence of other variables is also ambiguous.[25]

Studies on different markets, using different samples, and covering different periods, reveal a wide divergence in the nature of the relationship between corporate governance and bank value. Therefore, the influence of corporate governance on bank valuation should be investigated on a case by case basis and this has stimulated many studies in this field. Despite the fact that several studies in the literature have looked specifically at the impact of corporate governance on bank valuation in the MENA region, those studies suffer from several weaknesses. First, the overwhelming majority of those studies focus solely on the GCC countries, which may prevent generalising their result to the entire MENA region. Second, the focus on the GCC countries limits the size of studied samples and hence the reliability of the results on the whole of the MENA region. Third, the existing studies ignored some important characteristics such as ownership, which this chapter focuses on. To the best of the researcher's knowledge, no previous studies have looked at the effect of ownership structure on the value of Islamic banks. Finally, no previous research on the MENA region has studied how the influence of corporate governance mechanisms differs between Islamic and conventional banks. Thus, there is still no clear empirical evidence whether corporate governance variables shape conventional and Islamic bank's market value differently.

This chapter aims at filling the above gaps by analysing the effect of the adopted corporate governance mechanisms and structures on the market value of MENA banks. To do so, a panel dataset containing the largest 77 publicly traded MENA banks will be studied, over the period 2011-2018. Regarding the corporate governance structure, the chapter exploits nine variables that represent mainly two aspects: ownership structure and board composition. Moreover, to obtain more homogenous samples, the sample is split into two sub-samples according to their type: conventional and Islamic. This allows testing the impact of the adopted corporate

[25] Other variables considered in the literature are board size, board independence, board diversity, role duality, the existence and the size of board committees, ownership type, and ownership concentration (blockholding). Their influence on bank share price and market capitalisation is still unclear.

governance factors on value, taking into consideration the structure of bank activities and businesses. This is due to the fact that conventional banks main activities are interest-based, while those of Islamic banks are profit-sharing-based.

An initial review of the studied banks show that the highest valuation banks are characterised – in general – by high ownership concentration ratios, large boards, and low proportions of independent directors and female board members. This is the case of Al Rajhi Bank (Saudi Arabia – Islamic – public), Ahli United Bank (Kuwait – Islamic – private), Housing Bank of Trade and Investment (Jordan – conventional – private), National Bank of Bahrain (Bahrain – conventional – private), United Arab Bank (UAE – conventional – private), National Bank of Ras Al-Khaimah (UAE – conventional – public), National Bank of Fujairah (UAE – conventional – private), National Commercial Bank (Saudi Arabia – conventional – public), and Saudi British Bank (Saudi Arabia – conventional – private). On the other hand, banks with low valuation measures are characterised – in general – with private ownership and low blockholdings, medium to large boards, medium to large proportion of independent directors, and low proportion of female board members. This is the case of Faisal Islamic Bank (Egypt – Islamic), Blom Bank (Lebanon – conventional), Bank of Beirut (Lebanon – conventional), Byblos Bank (Lebanon – conventional), Bank al Etihad (Jordan – conventional), Kuwait International Bank (Kuwait – Islamic), Banque Internationale Arabe de Tunisie (Tunisia – conventional), Arab Bank (Jordan – conventional), and Sohar International Bank (Oman – conventional). To link these banks' corporate governance frameworks and valuation measures, see Table 3.1.

Table 3.1: Valuation indicators and governance structures of some MENA banks – 2011-2018 averages

Bank	Country	Price/Book value	Price earnings ratio	Share returns	Tobins' q	Type	Ownership type	Ownership concentration	Board size	% of Independent board members	% of women board members
Al Rajhi Bank	Saudi Arabia	2.42	12.95	0.03	0.35	Islamic	29.19	Public	11.00	0.41	0.00
Ahli United Bank	Kuwait	2.10	19.31	-0.04	0.32	Islamic	94.39	Private	8.75	0.23	0.00
Housing Bank for Trade & Finance	Jordan	2.19	20.62	0.03	0.30	Conventional	68.55	Public	12.75	0.25	0.03
National Bank of Bahrain	Bahrain	1.88	12.84	0.07	0.25	Conventional	57.65	Private	10.50	0.39	0.01
United Arab Bank	UAE	1.82	40.82	0.11	0.23	Conventional	54.49	Private	10.50	0.57	0.10
National Bank of Ras Al-Khaimah	UAE	1.36	8.25	0.02	0.26	Conventional	58.01	Public	7.25	0.28	0.00
National Bank of Fujairah	UAE	1.73	13.85	0.02	0.23	Conventional	70.53	Private	8.00	0.33	0.00
National Commercial Bank	Saudi Arabia	1.69	10.07	0.18	0.22	Conventional	71.14	Public	9.00	0.29	0.00
Saudi British Bank	Saudi Arabia	1.29	8.78	0.09	0.20	Conventional	66.66	Private	9.88	0.39	0.00
Faisal Islamic Bank of Egypt	Egypt	0.16	0.89	0.13	0.02	Islamic	33.81	Private	13.00	0.77	0.00
Blom Bank	Lebanon	0.27	1.73	0.00	0.02	Conventional	58.27	Private	11.00	0.55	0.00
Bank of Beirut	Lebanon	0.43	3.29	0.00	0.04	Conventional	40.78	Private	10.25	0.47	0.00
Byblos Bank	Lebanon	0.54	5.35	-0.03	0.05	Conventional	48.85	Private	10.75	0.56	0.00
Bank al Etihad	Jordan	0.66	8.48	0.02	0.08	Conventional	48.77	Private	11.00	0.36	0.09
Kuwait International Bank	Kuwait	0.75	11.75	-0.02	0.09	Islamic	39.56	Private	9.00	0.33	0.11
Banque Internationale Arabe de Tunisie - BIAT	Tunisia	0.70	6.58	0.08	0.09	Conventional	44.73	Private	9.25	0.32	0.00
Arab Bank	Jordan	0.69	10.26	-0.03	0.12	Conventional	34.54	Private	11.00	0.60	0.09
Sohar International Bank	Oman	1.02	9.40	-0.03	0.10	Conventional	42.55	Private	7.00	0.86	0.00

Source: bank annual reports and BankFocuse database.

On the other hand, the empirical results show some interesting findings. Mainly, corporate governance is observed to affect conventional and Islamic banks differently. For instance, the ownership concentration is found to improve the value of Islamic banks while it discounts the value of conventional banks. This may provide evidence that large shareholding in MENA Islamic banks may represent a controlling mechanism that guides and directs board of directors and senior management towards decisions that pour in better bank valuation. Duality of the Chairman and CEO may add some value to the market capitalisation of Islamic banks, which is not the case for conventional banks. This result suggests that power concentration in Islamic banks is offset by the oversight provided by the Sharia Supervisory Board that mitigates the controlling power of the chairman-CEO. Last but not least, the independent directors play some constructive role for conventional banks only.[26]

This chapter folds down as follows. Section 3.2 sheds light on the relevant literature. In Section 3.3, the empirical methodology and the exploited variables are illustrated. The data set is presented in Section 3.4. The empirical results and their interpretations are included in Section 3.5. The conclusion of the chapter is in Section 3.6.

3.2 Literature review

This section will present a review of the related literature that detects with how corporate governance affects the value of banks. The literature review is divided into three parts: in the first part, the findings of previous studies done on the developed countries are presented and discussed, while those done on the emerging markets (including the MENA region) will be presented and analysed in the second part. A third part will include the studies mixing between developed and developing countries. This is done because the corporate governance frameworks between the two groups of countries are indeed different, and consequently, the impact of corporate governance variables on bank value may be different.

[26] A major difference is observed regarding the existence of audit committee: it is a significant determinant of conventional bank value, unlike Islamic banks. The other variables show similar impact for both conventional and Islamic banks.

3.2.1 Studies on the developed countries

To examine the impact of corporate governance mechanisms on US bank stock performance, represented by stock Jensen's Alpha, prior to the international financial crisis, (Grove, Patelli, Victoravich, & Xu, 2011) exploit a sample of 236 public commercial banks. They find that board size is not a major determinant of stock performance, while CEO-chairman duality has a negative and significant effect on Jensen's Alpha. They argue that this result is consistent with the agency theory and indicating a weakness in corporate governance framework.

(Adams & Mehran, 2008) and (Adams & Mehran, 2012) study the relationship between board governance and banks' stock performance using a sample of 35 U.S bank holding companies (BHCs) between 1964 and 1999. The authors find firstly that the size of BHCs boards is a major determinant of its Tobin's Q, and larger boards are associated with higher value. They argue that an increase in BHCs board size resulted from additions of directors with subsidiary directorships does add value as the BHC complexity increases, where larger boards contain larger number of directors also sitting on the subsidiary boards. Conversely, they find that board independence (i.e. the proportion of independent directors) is not related to bank valuation. Similarly, they reveal that the number of board committees has no impact on bank Tobin's Q.

To determine how the size and the composition of the board of directors, and the number and mix of committees boost shareholders' value, (Handorf, 2018) examines the board structure of 20 large, systemically important US bank holding companies in 2016. The author reveals that bank holding companies with more committees, record higher price-to-book ratios and the number of independent directors and female directors and committee structure are all main triggers to bank valuation.

The impact of adopted corporate governance structures on European bank valuation was analysed by (Belhaj & Mateus, 2016) during the period 2002-2011. By using a sample of 73 banks operating in 11 European countries, the authors examine the relationship between banks' corporate governance mechanisms, specifically board size, board composition, gender diversity, and the CEO duality on these banks Tobin's Q. Their results reveal that board of directors' size and gender diversity have positive and significant impact on Tobin's Q. They concluded that larger boards with higher proportion of female members result in higher bank value. On the other hand, they show that board composition (proxied by the proportion of non-

executive directors) and the CEO-chairman duality do not discriminate between European banks.

(Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015) test the effect of 2 dimensions of board diversity – gender and nationality – on the valuation of banks, through a sample of 159 banks from 9 developed countries (Canada, France, Germany, Italy, the Netherlands, Spain, Sweden, the UK and the US) over the period 2004-2010. The authors show that a higher percentage of women on the board (i.e. gender diversity) is a major booster of bank Tobin's Q, while a higher percentage of foreigner (i.e. national diversity) hinders it. As for the other corporate governance measures, they show that board size and the percentage of independent directors affect positively and significantly Tobin's Q. In contrast, they find that role duality depresses bank Tobin's Q, as they are negatively and significantly associated.

Using data on 62 large, publicly traded U.S. commercial banks, (Peni & Vahamaa, 2012) examine the impact of corporate governance and bank value during the international financial crisis, between 2005 and 2008. Particularly, they aim at examining whether banks with stronger corporate governance mechanisms have better stock market performance in light of the crisis. Interestingly, they find that more sound corporate governance practices had negative effects on banks' stock market valuations during the crisis, where banks with stronger governance structures are found to suffer lower Tobin's Q and stock returns. Nonetheless, they show that banks with better corporate governance practices recorded significantly higher stock returns immediately after crisis, suggesting that good governance have indeed mitigated the repercussions of the crisis on the credibility of banks.

The existence of a possible relationship between the proportion of female executives on board of directors and bank valuation, has been detected by (Manta, Tarulli, Morrone, & Toma, 2020) using a sample of 61 banks from the European Union countries operating between 2015 and 2017. The authors find that a higher percentage of female board members is negatively associated with bank market capitalisation and Tobin Q, but significant only for the latter. They argue that this finding suggests that the homogeneity of boards has a positive impact on bank performance.

A sample of 69 large banks operating in Canada, France, Italy, Spain, UK, and US was exploited by (de Andres & Vallelado, 2008) between 1995 and 2005 to show how board composition and size are related to directors' ability to monitor and advise management and

create more value. The authors reveal an inverted U-shaped relation between board size and Tobin's Q. They argue that adding new directors is positively associated with bank performance and reveals better monitoring and advising, however, this non-monotonic relation proves that when the board size reaches 19, Tobin's Q starts to diminish. Moreover, the authors find an inverted U-shaped relation between board independence and bank value, which may be driving the relation between board size and Tobin's Q. The authors conclude that board characteristics (size, composition or functioning) reflect directors' motivation and their ability to effectively monitor and advise managers, and banks with more effective boards in monitoring are better governed, which in turns creates shareholder value.

To investigate the impact of risk management-related corporate governance mechanisms (such as CEO ownership, board size, and board independence) on bank stock returns, (Aebi, Sabato, & Schmid, 2012) exploit a sample of 573 U.S. banks in 2007 and 2008 and show that overall, standard corporate governance variables are mostly insignificantly or even negatively correlated with banks' performance during the international financial crisis. Specifically, they show that banks, whose credit risk officer reports directly to the board of directors, perform considerably better during the crisis than those whose credit risk officer reports to the CEO. Secondly, they find that banks with larger boards realised significantly higher stock returns, since board size had a positive and significant effect on these returns. Conversely, they reveal that a larger proportion of outside directors, CEO duality, and blocking shareholders all have negative effect on bank stock returns after the crisis. The authors argue that this result indicates that board of directors forced their banks to maximise shareholders' wealth before the crisis and undertook risks to create wealth, which turned out later poorly in the credit crisis. Finally, they test the impact of existence of risk committee within the board and find it negative and significant, suggesting that having a risk committee is not beneficial for the bank stock returns.

A sample of 84 publicly listed banks from 21 EU countries over the period 2007-2014 was studied by (Arnaboldi, Casu, Kalotychou, & Sarkisyan, 2020) to examine the effect of governance reforms regarding board diversity on the market valuation of banks. Overall, they show that board diversity reforms do improve bank market valuation, represented by Tobin's Q and stock returns, which materialise in the first 3 years after the implementation of reforms. In parallel, they reveal that board diversity reforms increase short-term stock returns' volatility. Regarding the adopted variables, the authors find that the proportion of women on the board

has a positive and significant impact on stock returns, a negative and significant effect on stock returns volatility, and a positive but insignificant impact on Tobin's Q. They argue that the effectiveness of board reforms depends on the country's institutional environment, where countries more open to diversity, a common law system, and greater economic freedom experience lower stock returns' volatility after adopting these reforms.

The relationship between corporate governance structures, level of diversification, and market value of U.S. banks was examined by (Liang, Chen, & Chen, 2016) over the period 2003-2008. They reveal that governance mechanisms are indeed associated with bank diversification in a way that as diversification increases, board independence, managerial entrenchment, and institutional ownership decrease. Secondly, their empirical results show that leadership structure and the level of managerial entrenchment play a crucial role in determining diversified banks excess value. In this regard, they reveal that CEO duality is an efficient strategy for a diversified bank to increase firm valuation. On the other hand, they find that board independence has positive but insignificant effect on bank Tobin's Q. The authors argue that these findings provide insights for policymakers in the proper design of bank governance structures and demonstrate that sound governance structures can lessen the diversification discount of financial conglomerates.

To test the effect of corporate governance framework quality on the market value of 32 listed Italian banks and financial institutions in 2010, (Bubbico, Giorgino, & Manda, 2013) firstly assess how corporate governance quality is associated with bank Tobin's Q, based on four dimensions: board of directors, compensation system, shareholders' and other stakeholders' rights, and disclosures. Consequently, they find a positive and significant association between corporate governance structure and market value, suggesting that better governance adds value, and investments in effective governance systems provides net positive benefit to banks. Additionally, they detect the relationship between ownership concentration and Tobin's Q and reveal a positive and significant correlation between the two variables, which discloses that high concentration allows large shareholders to exercise better monitoring over management.

Finally, (Nogataa, Uchidab, & Gotoc, 2011) compare the stock price reaction to M&A announcements by Japanese banks, regulated non-financial firms, and unregulated firms, between April 1998 and December 2007. They find firstly that unlike banks and unregulated firms, regulated non-financial firms did not realise significantly positive stock response after

announcing M&A as a bidder. Second, unregulated firms with stricter corporate governance structures have more favourable stock price reaction to M&A announcements. Regarding the exploited variables, board size was found to have a negative and significant effect, suggesting that firms with large boards realise small shareholders' wealth through M&A, which – according to the authors – is consistent with the outlook that large boards do not work well. On the other hand, the proportion of independent board members has a positive impact on stock returns, consistent with the concept that appointing more outsider directors results in higher shareholders' wealth through M&A.

3.2.2 Studies on the emerging and developing countries

3.2.2.1 Conventional banks

Using a sample of 21 Indian and 15 Chinese listed banks operating between 2007 and 2011, (Battaglia & Gallo, 2015) study how corporate governance structures are associated with bank stock market performance (particularly Tobin's Q and P/E ratio). The authors show board size has a positive but insignificant impact on Tobin's Q, and a negative but also insignificant impact on P/E ratio. Conversely, the percentage of independent directors was found to be negatively correlated with Tobin's Q, and positively with P/E ratio, but insignificant for both. Finally, market valuation measures were negatively and significantly associated with the risk committee size, and positively with the number of its meetings.

(Carrillo & Bathala, 2010) examine bank valuation in relation to different corporate governance metrics, e.g. ownership and board structures using a sample of 205 banks for the year 2006. The authors find that insiders, blockholding, and institutional ownership all have insignificant impact of bank market-to-book ratio. Regarding board characteristics, they reveal that board independence and the audit committee are not major determinants of bank valuation, while the existence of governance committee boosts significantly bank market-to-book multiple.

A negative but insignificant association between the number of board members and bank's Tobin's Q was revealed by (Doğan & Yildiz, 2013) who investigate the impact of board of directors' size on bank valuation in Turkey using a sample of 12 listed banks over the period 2005-2010.

Using a sample of 41 listed GCC banks operating between 2002 and 2004, (Chahine, 2007) examines the impact of corporate governance and diversification on the market valuation of GCC commercial banks. The author reveals a negative (but insignificant) correlation between diversification and market valuation (proxied by market to book ratio and price earnings ratio). Moreover, he shows that foreign banks and institutional shareholders invest in more diversified banks with high market valuation. In contrast, domestic institutional shareholders invest in less diversified banks with lower valuation multiples. Regarding the effect of the adopted corporate governance measures, the author finds that board size has a negative and significant impact on both market to book ratio and price earnings ratio. As for the impact of ownership, foreign ownership was found to be positively and significantly associated with both valuation multiples, while government ownership is negatively correlated with market valuation ratios, but significant only with market to book ratio.

The impact of board composition and ownership structure on bank market value was analysed by (Arouri, Hossain, & Badrul Muttakin, 2014) who adopted Tobin's Q and market-to-book ratio and used a dataset of 58 listed banks operating in the GCC countries in 2010. Regarding board structures, the authors find that board size and CEO duality have an insignificant (negative) effect on the adopted market value measures. As for ownership, they show that foreign and institutional ownerships have a significant positive association with Tobin's Q and market-to-book ratio. The authors conclude that foreign ownership provides stronger monitoring of managers and helps reducing agency costs, which in turn increases bank value. Additionally, institutional investors have greater expertise and financial resources that also help monitoring bank governance and reducing conflict of interests and, thus contribute to improving bank value. In contrast, the authors reveal that government ownership is not a main determinants of firm value (as government ownership has a positive but insignificant impact on Tobin's Q and negative and insignificant impact on market-to-book ratio), suggesting that this type of ownership lacks proper incentives to influence bank's management.

By studying all listed Saudi banks from 2014 to 2017, (Almoneef & Samontaray, 2019) detect the impact of a board characteristics on bank Tobin's Q. They find that board size and board independence enhance significantly bank market valuation, while the number of board meetings and foreign board membership have no significant association with it. Regarding board committees, the authors reveal that a higher number of board committees depresses

significantly bank Tobin's Q. Finally, the size and composition of audit committee (i.e. the percentage of independent directors in it), and the number of its meetings all have negative but insignificant effects on Saudi banks' market value.

The association between the internal corporate governance mechanisms and bank market value was investigated by (Basuony, Mohamed, & Al-Baidhani, 2014). The authors used a sample comprising the largest 50 banks operating in Yemen and the six GCC countries during 2011. They find that board size and board activism have a positive and significant impact on bank Tobin's Q, while board independence captured the opposite sign and statistically significant. Regarding bank ownership, they reveal that share ownership by directors improves slightly Tobin's Q, whereas ownership concentration has a negative but insignificant impact. The authors also show that role duality captured a negative but insignificant effect on bank market value. Finally, the existence of an audit committee and the number of its meetings captured positive and significant effects respectively, though both insignificant.

In a comprehensive study on Saudi Arabia, (Al-Sahafi, Rodrigs, & Barnes, 2015) Examine the relationship between corporate governance variables and Tobin's Q of all Saudi listed banks between 2009 and 2012. The authors use several corporate governance variables, e.g. board size and independence, CEO duality, the size and independence of the audit committee, and ownership concentration. They find that board size and board independence have a positive and significant impact on Saudi banks' Tobin Q, while ownership concentration has a significantly negative association with it. On the other hand, duality and the size of, and committee independence are not major determinants of Saudi bank value.

Finally, (Trabelsi, 2010) analyses the association between corporate governance mechanisms and Tunisian banks' market value, represented by Tobin's Q. Using a sample of 10 banks operating during the period 1997-2007, the author's empirical results reveal firstly a positive and significant association between external directors and Tobin's Q, concluding that higher number of directors results lower market valuation. As for the effect of ownership, the author reveals a negative and significant correlation between ownership concentration and state ownership on one hand, and market value on the other.

3.2.2.1 Islamic banks

A corporate governance index for Islamic banks was structured by (Abdel-Baki & Sciabolazza, 2014), and based on six themes extracted via a survey conducted on 72 Islamic banks operating in 14 Asian and Middle Eastern countries. The authors linked the survey's results to the performance of their sample of banks between 2001 and 2011 and found positive and significant correlation between corporate governance index and Tobin's Q, and negative and significant effect on P/E.

Using the Good Corporate Governance (GCG) composite value proposed by the Bank of Indonesia on a sample of 24 banks operating in Indonesia between 2011 and 2013, (Cahyaningtyas, Sasanti, & Husnaini, 2017) indicate that GCG scores are positively associated with bank value, represented by Tobin's Q.

To detect the effect of corporate governance mechanisms on the market value (represented by Tobin's Q), (Nawaz, 2017) used a sample of 67 Islamic banks operating between 2006 and 2009. Firstly, the size of board of directors and CEO duality are positively associated with bank market value. Conversely, the percentage of non-executive directors is not a major determinant of bank market value. Whereas the size of the Sharia supervisory board was found to be negatively associated with bank Tobin's Q. The authors argue that market does not favour larger Sharia supervisory boards in light of large boards, while dual CEOs have incentive to limit risk exposure versus the interests of short-term-oriented shareholders.

The differences between conventional banks and Islamic banks in terms of Sharia supervisory boards, board structure, and CEO-power on performance was analysed by (Mollah & Zaman, 2015) who exploited 86 Islamic banks and 86 conventional banks operating in 25 countries between 2005 and 2011. Their empirical results show that board size has negative but insignificant impact on Tobin's Q for both Islamic and conventional banks. Regarding board independence, it was found to be positively and significantly associated with conventional bank Tobin's Q, while insignificant for Islamic banks. Regarding role duality, the authors reveal a negative correlation with bank market valuation for both types of banks, but significant for conventional banks only. Additionally, the authors argue that Islamic bank boards are more independent compared with their conventional counterparts and the latter recruit more internal CEOs than the former. Further, Islamic bank boards and Sharia supervisory boards are profit

driven, and board structure and CEO power are important factors influencing their performance.

3.2.3 Studies on mixed markets

Using data for 164 large banks (with assets above $50 billion) operating in 32 countries, (Beltratti & Stulz, 2012) study the factors affecting stock returns of banks during the international financial crisis. The authors cover the period 2006-2008 and include variables representing governance and find that banks with controlling shareholders performed significantly better during the crisis, and that shareholder-friendly boards have a negative and significant on bank stock returns. They argue that this evidence poses a substantial challenge to the consensus that poor bank governance was a major cause of the crisis.

The impact of ownership structure on bank valuation (proxied by market-to-book ratio) was assessed by (Caprio, Laeven, & Levine, 2007) using a sample of 244 banks across 44 countries operating in year 2000. They find firstly that except in a few countries that have very strong shareholder protection laws, banks are not widely held where banks are controlled by families or the state. Particularly for state ownership, it was find to have negative but insignificant impact on bank valuation. The authors argue that ownership structure is an important mechanism for bank governance.

3.2.4 The main themes emerging from the literature on corporate governance and bank valuation

After the thorough and comprehensive coverage and discussion of the relevant literature presented in the previous sub-sections, the exploited corporate governance variables and performance measures used by the previous studies are summarised in Appendix H. This is done in order to list and compare the most used corporate governance and explanatory variables in the literature and their interactions and associations, in order to (1) develop this chapter's hypotheses and (2) select the variables that will be subsequently used in the econometric model construction.

Overall, the review of literature on corporate governance and bank valuation revealed the following:

- **The Impact of state ownership**: the majority of listed studies, e.g. (Trabelsi, 2010) and (Chahine, 2007) have found a negative association between state ownership and bank value.
- **The Impact of ownership concentration**: the majority of listed studies, e.g. (Al-Sahafi, Rodrigs, & Barnes, 2015), (Trabelsi, 2010) and (Aebi, Sabato, & Schmid, 2012) have found a negative association between ownership concentration and bank value.
- **The Impact of board of directors' size**: the majority of listed studies, e.g. (Adams & Mehran, 2012), (de Andres & Vallelado, 2008), (Almoneef & Samontaray, 2019) and (Basuony, Mohamed, & Al-Baidhani, 2014) have found a positive association between board size and bank value.
- **The Impact of role duality**: the majority of listed studies, e.g. (Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015) and (Aebi, Sabato, & Schmid, 2012) have found a negative association between role duality and bank value.
- **The Impact of percentage of independent directors**: the majority of listed studies, e.g. (de Andres & Vallelado, 2008), (Basuony, Mohamed, & Al-Baidhani, 2014) and (Aebi, Sabato, & Schmid, 2012) have found a negative association between the percentage of independent directors and bank value.
- **The Impact of board gender diversity**: the majority of listed studies, e.g. (Belhaj & Mateus, 2016), (Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015), (Handorf, 2018), and (Arnaboldi, Casu, Kalotychou, & Sarkisyan, 2020) have found a positive association between board gender diversity and bank value.
- In addition, **the impact of the existence of audit, risk, and nomination and remuneration committees** on bank valuation will be tested.

3.2.5 Hypotheses development

Despite the fact that there are some discrepancies in the findings of the above listed literature, it is possible to develop several hypotheses based on the findings of the majority of the covered studies. Consequently, the following hypotheses have been developed and designed as follows.

- **Hypothesis 1** (H1): state ownership has a negative impact on bank value.
- **Hypothesis 2** (H2): ownership concentration has a negative impact on bank value.
- **Hypothesis 3** (H3): board size has a positive impact on bank value.

- **Hypothesis 4** (H4): CEO-chairman role duality has a negative impact on bank value.
- **Hypothesis 5** (H5): the percentage of independent board members has a negative impact on bank value.
- **Hypothesis 6** (H6): board gender diversity has a positive impact on bank value.
- **Hypothesis 7** (H7): the existence of audit, risk, and nomination and remuneration committees has a positive impact on bank value.

3.3 Methodology and variables specifications

3.3.1 Bank valuation measures

Valuing banks has always been a difficult task and the continuing market crises over the past years have made it even more difficult (Damodaran, 2013). According to the author, two key measurement problems confront valuing banks: (1) cash flows cannot be estimated easily, and (2) banks operate in light of regulatory frameworks that govern their capitalisation, investments, and even their growth. Hence, changes in the regulatory environment result in considerable value changes, where for instance, regulatory restrictions on competition may allow banks to earn excess returns and boost their value. On the other hand, regulatory authorities might restrict the realisation of such potential excess returns

(Bogdanova, Fender, & Takáts, 2018) argue that what makes bank valuation special is regulation, which is much more rigorous for banks than for corporates, and banks are required to hold capital adequacy ratios based on their book value of equity. They add that the accounting treatment of bank activities differ considerably from that of other non-financial firms making book values more meaningful measures of value for banks than for non-financial ones. In this regard, accounting practices are important for bank valuations for two reasons. Firstly, bank assets are typically dominated in the form of financial instruments with well-defined cash flows, where the majority of these assets (e.g. loans and investments) are reported at amortised cost. Nonetheless, many financial instruments held by large banks are usually traded in relatively liquid markets, or are substantially similar to traded assets. This is why the practice of marking traded (and sometimes non-traded assets) to market has long been performed in banks. As a significant proportion of bank assets are treated in this way, book values are close to market values in the case of banks. Secondly, bank assets are subject to

credit and other risks, which result in potential large losses. In this regard, banks have discretion in setting provisioning policies where the set loan loss provisions to report the estimated credit losses as allowance reduce the value of the loan portfolio and the reported earnings. (Bogdanova, Fender, & Takáts, 2018) state that against this background, depressed price-to-book ratios reflect the effect of accounting rules on recognised book values as well as bank managers attempts to preserve their institutions' (book) capital positions.

Consequently, combining book- and market-based valuation measures provides better information. Hence, and following the literature summarised in Appendix H, this research will exploit the following four variables to proxy for bank value: Tobin's Q, Market-to-book ratio, Price-earnings ratio, and stock returns.

3.3.2 Model specification

The exploited data set is a panel data that includes banks, which differ in terms of value and in the adopted corporate governance frameworks. The Panel Fixed Effects method allows considering bank-idiosyncratic effects in the estimations through including individual intercept for each bank in the regression equation. Alternatively, the Panel Random Effects allows taking into consideration two types of unobserved effects influencing the dependent variable: (i) a bank-specific, time-constant effect, assumed random; and (ii) an idiosyncratic time-varying random error. The choice between Random Effects and Fixed Effects methods is based on the (Hausman, 1978) test.

For the empirical estimations, the study will exploit the following panel model:

$$Y_{it} = \alpha_i + \beta X_{it} + \gamma Z_{it} + \varepsilon_{it}$$

where, Y_{it} is the dependent variables (bank value indicators) observed for individual *i* at time *t*, X_{it} is the time-variant $1 \times k$ vector of independent variables (the set of corporate governance measures), Z_{it} is a $1 \times k$ vector of control variables, β and γ are $k \times 1$ matrices of parameters, α_i is the unobserved time-variant individual effect, and ε_{it} is the error term. Subscripts *i* and *t* represent bank and year, successively.

3.3.3 Independent and control variables specifications

3.3.3.1 Independent variables

Based on the summary of the literature presented in Appendix H, and in order to test the proposed hypotheses, the four following categories of governance-explanatory variables will be adopted:

a. Ownership structure variables: this category contains two variables: (i) the type of ownership (government/private), and (ii) ownership concentration (the percentage of ownership of the top 3 shareholders).
b. Board characteristics variables: this category contains four variables: (i) board size, (ii) Chairperson/CEO role duality, (iii) the percentage of independent board members, and (vi) the percentage of women in the board.
c. Board committees' variables: this category contains four variables. (i) Audit Committee, (ii) Risk Committee, and (iii) Nomination and Remuneration Committee.
d. External governance variable: in additional to the above ten "internal" governance indicators, one "external" governance variable is added, namely bank's equity-to-asset ratio.

In fact, the adoption of these four categories of corporate governance variables can reveal the impact of several dimensions/perspectives of the implemented corporate governance frameworks in the MENA banks on their valuation. Regarding the first category of variables (ownership), and as the MENA banking sectors are characterised with considerable state ownership and high levels of ownership concentrations (blockholdings), we exploit variables representing these two variables in order to capture the existence of any potential conflict of interest, and if exists, how it affects MENA bank valuation. Regarding the second category of variables (board structure), and as the MENA banks are mostly run by large boards of directors, many of them adopt (Chairman-CEO) role duality, their independent board members play mostly non-active role, and have low ratios of women on the board, we aim at testing if and how these "weaknesses" may put pressures on bank valuation. As for the third category of variables (board committees), and as regulations enforce the division of board duties and responsibilities among several committees in order to maximise board oversight ability and control efficiency, we aim to test whether these committees do result in a better guidance of

the boards, resulting eventually in a higher value. Finally, as banks use their solvency and capitalisation ratios as – confidence – signals to stakeholders and markets, capitalisation ratio will be used as an "external" corporate governance variable in order to test its disciplinary impact on MENA banks value.

3.3.3.2 Control variables

Finally, to complete the models, the following control variables are considered, which are mainly extracted from (Grove, Patelli, Victoravich, & Xu, 2011), (Adams & Mehran, 2012), (Aebi, Sabato, & Schmid, 2012), (Arouri, Hossain, & Badrul Muttakin, 2014), (Mollah & Zaman, 2015), (Manta, Tarulli, Morrone, & Toma, 2020) and (Arnaboldi, Casu, Kalotychou, & Sarkisyan, 2020). To control for the impact of bank size on value, the natural log of bank total assets is included. The impact of bank age is controlled for by adding the natural log of years since inception. To test the effect of bank profitability, the return-on-asset ratio is included. To control for the impact of credit risk, the loan-loss-reserves as percentage of gross loans is used. Finally, to control for the impact of macroeconomic developments, the real GDP growth rate is used.

Table 3.2: Explanation of the exploited variables

Variable	Explanation
Dependent variables	
Tobin's Q (TOBIN_Q)	Market capitalisation + book value of liabilities divided by total assets
Market to book ratio (MB)	Stock price divided by stock book value
Price earnings ratio (P/E)	Stock price divided by earnings per share
Stock returns (RETURNS)	$(Price_t/Price_{t-1}) - 1$
Independent variables: internal governance variables	
Ownership type (OWN_TYPE)	Dummy variable: 1 for majority government ownership, 0 otherwise
Ownership concentration (OWN_CONC)	The % of ownership of the top 3 shareholders
Board size (BOARD_SIZE)	Number of board members
Duality (DUAL)	Dummy variable: 1 if the chairman is at the same time the CEO/GM, 0 otherwise

Independent members (INDEP_MEM)	The % of independent board members
Board diversity (DIVERS)	The % of women board members
Audit committee (AUD_COMM)	Dummy variable: 1 for the existence of audit committee within the board, 0 otherwise
Risk committee (RISK_COMM)	Dummy variable: 1 for the existence of risk committee within the board, 0 otherwise
Nomination and remuneration committee (NOM_REM_COMM)	Dummy variable: 1 for the existence of nomination and remuneration committee within the board, 0 otherwise
Independent variables: external governance variable	
Bank capital (CAPITAL)	Equity-to-asset ratio
Control variables	
Size (SIZE)	Natural log of bank assets
Bank age (AGE)	Natural log of bank age
Return on assets (ROA)	Net income divided by average assets
Loan-loss-provisions (LLP)	Loan-loss-provisions divided by gross loans
GDP growth rate (GDPG)	Real growth rate of gross domestic product

Based on the above, the following equations linking the dependent, independent, and control variables are proposed:

$$TOBIN\_Q_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} ROA_{it} + \beta_{14} LLP_{it} + \beta_{15} GDPG_{it} + \varepsilon_{it}$$

$$MB_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} ROA_{it} + \beta_{14} LLP_{it} + \beta_{15} GDPG_{it} + \varepsilon_{it}$$

$$P/E_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} ROA_{it} + \beta_{14} LLP_{it} + \beta_{15} GDPG_{it} + \varepsilon_{it}$$

$$RETURNS_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} ROA_{it} + \beta_{14} LLP_{it} + \beta_{15} GDPG_{it} + \varepsilon_{it}$$

3.4 Data and summary statistics

The empirical estimations in this chapter resorted initially to the dataset containing the largest 100 banks (which contains 77 conventional and 23 Islamic) operating in the following set of MENA countries: Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia, and the United Arab Emirates (UAE). Nonetheless, because many of those banks are neither publicly traded nor listed on stock exchanges, they lack market value figures and share prices. This is particular for the state-owned Algerian, Egyptian, and Libyan banks, in addition to several privately-owned Lebanese and GCC banks. This reduces the initial sample by 29 banks (25 conventional and 4 Islamic) and the remaining banks are thus 71, containing 52 conventional and 19 Islamic. The size of conventional banks' sample is still sufficient, but that of Islamic banks became small. Thus, six Islamic banks have been added, which directly follow in terms of assets. The covered period is again 2011-2018 (i.e. 8 years).

Regarding the sources of data, note that the corporate governance data have been collected from bank annual reports and websites. On the other hand, bank assets, liabilities and financial ratios have been extracted from BankFocus database. Finally, GDP growth rates have been extracted from the World Bank database.

As a preliminary analysis of the results, Table 3.2 presents some summary statistics of the exploited variables and Table 3.5 includes the variables correlation matrix, both for the entire sample of banks. On the other hand, Table 3.3 presents some summary statistics for conventional banks only and Table 3.4 presents some summary statistics for Islamic banks only.

Table 3.3: Variables descriptive statistics – all banks

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
TOBIN_Q	0.173	0.154	1.082	0.007	0.113	551
MB	1.274	1.175	7.523	0.104	0.751	572
P/E	13.076	10.472	190.000	0.562	15.839	554
RETURNS	0.050	-0.005	6.153	-0.659	0.375	572
OWN_CONC	51.525	50.000	100.000	8.580	21.844	591
BOARD_SIZE	9.624	9.000	13.000	6.000	1.589	616
INDEP_MEM	0.475	0.444	1.000	0.000	0.222	586
DIVERS	0.028	0.000	0.333	0.000	0.054	616
OWN_TYPE			1	0		616
DUALITY			1	0		616
AUD_COMM			1	0		616
RISK_COMM			1	0		616
NOM_REM_COMM			1	0		616
CAPITAL	14.102	13.013	99.270	4.640	7.806	601
SIZE	16.563	16.629	19.283	12.466	1.097	601
AGE	3.418	3.611	4.673	0.000	0.747	616
ROA	1.464	1.475	7.830	-5.360	0.990	600
LLP	4.518	3.810	32.000	0.070	3.426	594
GDPG	3.372	2.988	13.375	-3.482	2.646	616

From Table 3.2, it is observed that the average Tobin's Q for the sample of banks under study is 0.173, which shows that banks have on average a very low market capitalisation as percentage of their assets. While the highest capitalisation is 1.082 times total assets, the lowest one is 0.007. The average market-to-book ratio is 1.274 times, with a maximum of 7.523 and a minimum of 0.104. Price-earnings ratio averages 13.076 times and is widely dispersed with a maximum of 190.000 and a minimum of 0.562. The last value measure, RETURNS, recorded an average of 0.050%, and ranges between a maximum of 6.153% and a minimum of -0.659%. As for governance variables, the average ownership concentration is 51.521% and ranges from a maximum of 100% to a minimum of 8.580%. The average board size in our sample is 9.624 members, and ranges between and maximum of 13 members and a minimum of 6 members. The percentage of independent board members average 47.5% of total board members, with a maximum of 100% to a minimum of 0% showing the large difference among banks included in the sample in terms of independence. The average proportion of women board members in

our sample is 2.8% and ranges from a maximum of 33.3% to a minimum of 0%. As for the other five binary governance variables (DUAL, OWN_TYPE, AUD_COMM, RISK_COMM, and NOM_REM_COMM), I do not report summary statistics for them. The external governance variable (CAPITAL) shows that capitalisation of banks ranges between a maximum of 99.270% and a minimum of 4.640%, with an average of 14.102%.

As for the control variables, the average assets of banks is $26.62 billion, with a maximum of $236.87 billion and a minimum of $259.34 million. The average bank age is 37.3 years with a maximum of 107 years and a minimum of one year. ROA averages 1.464% and ranges between a maximum of 7.830% and a minimum of -5.360%. The average credit risk (LLP) is 4.518%, and ranging between a maximum of 32.000% and a minimum of 0.070%. Finally, the average economic growth in the included countries is 3.372% with a maximum of 13.375% and a minimum of -3.482%.

On the other hand, the figures reported in Table 3.5 present a preliminary idea about the associations between bank performance measures and the set of corporate governance and control variables. The state ownership is positively correlated with all value measures, which contradicts the expectations stated above. Ownership concentration is negatively correlated with Tobin's Q, but positively with the other three value measures, which also contradicts the initial expectations. Board size and role duality are negatively correlated with value measures, which are in line with the above expectations. The percentage of independent directors is negatively correlated with three value measures, which is consistent with the expectations. The percentage of women board members is positively correlated with market-to-book and price-earnings ratios (as expected), but negatively correlated with both Tobin's Q and stock returns. The three board committees are positively correlated with some value measure while negatively with the others, which prevents concluding a definite association between these corporate governance variables and bank valuation.

Table 3.4: Variables descriptive statistics – conventional banks

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
TOBIN_Q	0.159	0.152	0.398	0.011	0.074	394
MB	1.210	1.161	3.921	0.137	0.577	388
P/E	11.036	9.743	170.462	1.336	9.820	383
RETURNS	0.025	-0.012	1.228	-0.605	0.235	396
OWN_CONC	52.833	53.950	100.00	8.580	20.391	407

BOARD_SIZE	9.733	10.000	13.000	6.000	1.472	416
INDEP_MEM	0.453	0.400	1.000	0.100	0.212	404
DIVERS	0.034	0.000	0.333	0.000	0.058	416
OWN_TYPE			1	0		416
DUALITY			1	0		416
AUD_COMM			1	0		416
RISK_COMM			1	0		416
NOM_REM_COMM			1	0		416
CAPITAL	13.055	12.940	21.629	7.341	2.877	414
SIZE	16.788	16.844	19.283	14.319	0.969	414
AGE	3.759	3.689	4.673	1.386	2.957	416
ROA	1.562	1.520	5.420	-2.580	0.729	414
LLP	4.072	3.760	11.536	0.560	2.065	411
GDPG	3.329	2.926	13.375	-3.482	2.585	416

Table 3.5: Variables descriptive statistics – Islamic banks

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
TOBIN_Q	0.208	0.159	1.082	0.007	0.171	157
MB	1.403	1.179	7.523	0.104	1.015	183
P/E	17.672	12.482	196.000	0.562	23.921	170
RETURNS	0.106	0.000	6.153	-0.659	0.572	177
OWN_CONC	48.632	41.350	100.000	11.420	24.569	184
BOARD_SIZE	9.383	9.000	13.000	7.000	1.792	200
INDEP_MEM	0.523	0.556	1.000	0.000	0.236	183
DIVERS	0.017	0.000	0.167	0.000	0.041	200
OWN_TYPE			1	0		200
DUALITY			1	0		200
AUD_COMM			1	0		200
RISK_COMM			1	0		200
NOM_REM_COMM			1	0		200
CAPITAL	16.420	13.444	99.270	4.640	13.051	187
SIZE	16.066	16.160	18.394	12.466	1.199	187
AGE	2.973	3.367	3.850	0.000	0.863	200
ROA	1.246	1.340	7.832	-5.360	1.384	186
LLP	5.519	4.040	32.000	0.070	5.215	183
GDPG	3.462	3.043	13.375	-3.482	2.773	200

Table 3.6: Variables correlation matrix – all banks

	TOBIN_ Q	MB	P/E	RETURNS	OWN_ TYPE	OWN_ CONC	BOARD_ SIZE	DUAL	INDEP_ MEM	DIVERS	AUD_ COMM	RISK_ COMM	NOM_ REM_ COMM	CAPITAL	SIZE	AGE	ROA	LLP	GDPG
TOBIN_ Q	1																		
MB	0.88	1																	
P/E	0.43	0.47	1																
RETURNS	0.39	0.40	0.25	1															
OWN_ TYPE	0.27	0.18	0.06	0.13	1														
OWN_ CONC	-0.08	0.02	0.02	0.05	0.22	1													
BOARD_ SIZE	-0.14	-0.08	-0.12	-0.07	-0.19	-0.01	1												
DUAL	-0.04	0.06	-0.09	-0.06	-0.17	-0.19	0.04	1											
INDEP_ MEM	-0.09	-0.12	-0.02	0.09	0.03	0.02	0.02	-0.24	1										
DIVERS	-0.07	0.00	0.01	-0.04	-0.15	0.00	0.24	0.14	-0.04	1									
AUD_ COMM	-0.03	-0.04	0.00	0.03	0.00	-0.11	0.14	0.00	-0.12	0.08	1								
RISK_ COMM	-0.06	-0.03	0.02	-0.08	-0.14	-0.10	0.18	0.13	-0.21	0.12	0.27	1							
NOM_ REM_ COMM	0.09	0.08	-0.04	0.01	0.01	0.03	0.03	0.03	-0.04	-0.11	0.06	-0.02	1						
CAPITAL	0.33	-0.08	0.05	0.07	0.21	-0.21	-0.26	-0.29	0.08	-0.22	0.00	-0.12	-0.02	1					
SIZE	0.06	0.04	-0.12	-0.01	0.24	-0.01	-0.03	0.05	-0.10	-0.22	0.06	-0.04	0.27	-0.01	1				
AGE	-0.14	-0.02	-0.08	-0.08	-0.13	0.16	0.19	0.08	-0.29	0.20	0.08	0.18	-0.10	-0.31	0.194	1			
ROA	0.45	0.27	-0.24	0.17	0.20	-0.12	-0.10	-0.06	0.02	-0.11	-0.02	-0.09	-0.03	0.39	0.084	-0.10	1		
LLP	-0.16	-0.04	0.07	0.12	-0.08	0.08	0.21	-0.17	0.14	0.15	0.00	0.08	0.03	-0.23	-0.252	0.16	-0.15	1	
GDPG	0.21	0.17	-0.01	0.00	0.04	0.05	-0.11	0.00	0.02	-0.01	-0.24	-0.28	-0.08	0.15	-0.127	-0.21	0.26	-0.04	1

3.5 Empirical results

This chapter follows the procedure adopted in Chapter Two and divides the sample under study between conventional and Islamic banks. In the next section, the impact of the adopted independent and control variables on conventional banks valuation is detected, then the following section focuses on Islamic banks.

3.5.1 Estimations for conventional banks

Table 3.6 includes the regression estimated parameters with their corresponding t-Statistics. The table presents the results of the impact of corporate governance on four measures of valuation of MENA conventional banks. Column 2 presents the parameters describing the influence on Tobin's Q, Column 4 on market-to-book ratio, Column 6 on price-earnings ratio, and finally Column 8 on stock returns.

The estimated models for conventional banks' TOBIN_Q, MB and P/E are performed using Fixed Effects panel data models. The Fixed Effect specification is chosen based on the Hausman Test, which rejected the null hypothesis of randomness in the effect as can be seen from the Chi-squared Statistics in the last three rows of Table 3.5. Conversely, the model for RETURNS is performed with Random Effect model since the probability of Chi-squared Statistics for this model is more than the conventional 5% level, and hence the null hypothesis of random effect cannot be rejected. The F-statistics in Table 3.6 show that all models are appropriate, as the null of poor specification has been rejected at the 1% significance level. The Durbin-Watson statistics suggest the lack of autocorrelation among the models' errors. Finally, the explanatory variables included explain 82.0% of the variation in the TOBIN_Q of banks, 79.7% of MB model, 49.9% of P/E, and 10.6% of RETURNS. Hence, these specifications are adequate and appropriate in assessing the influence of corporate governance on conventional bank value.

Now after assessing the conventional bank models overall, the effect of individual independent and control variables on the valuation measures are analysed.

Table 3.7: The impact of corporate governance variables on conventional banks' value

	TOBIN_Q		MB		P/E		RETURNS	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
OWN_TYPE	-0.051	-1.535	-0.335	-1.215	-8.759	-1.169	0.034	0.932
OWN_CONC	-1.33E-05**	-2.258	-0.0001**	-2.143	-0.001	-0.553	-1.93E-05	-0.544
BOARD_SIZE	0.004	1.156	0.026	0.978	-1.695**	-2.304	0.009	0.948
DUAL	0.015	0.619	0.246	1.250	1.583	0.296	0.001	0.044
INDEP_MEM	0.048**	2.285	0.292	1.646	2.876	0.598	0.051	0.827
DIVERS	-0.02	-0.349	-0.075	-0.128	1.649	0.104	-0.124	-0.534
AUD_COMM	0.026**	2.468	0.242***	2.806	3.126	1.335	0.098**	2.095
RISK_COMM	0.013	1.375	0.049	0.589	2.064	0.902	-0.069*	-1.918
NOM_REM_COMM	-0.007	-0.672	-0.072	-0.793	-5.278**	-2.074	-0.052	-1.483
CAPITAL	0.002	1.566	-0.083***	-6.261	-0.491	-1.334	-0.005	-1.009
SIZE	-0.070***	-4.328	-0.543***	-4.001	-10.772***	-2.910	0.022	1.405
AGE	0.010	0.362	0.104	0.433	5.797	0.884	-0.034	-1.384
ROA	0.019***	4.270	0.138***	3.654	-9.424***	-6.763	0.094***	4.508
LLP	2.96E-05	0.017	0.025	1.599	1.024**	2.347	0.017***	2.679
GDPG	0.005***	4.752	0.029***	3.358	0.235	0.959	-0.006	-1.050
C	1.146***	4.623	10.059***	4.851	204.157***	3.612	-0.439	-1.568
R-squared	0.820		0.797		0.499		0.106	
F-statistic	21.154		17.824		4.499		2.825	
Prob(F-statistic)	0.000		0.000		0.000		0.000	
DW statistic	1.880		1.725		1.795		2.003	
Number of banks	52		52		52		52	
Number of obs.	373		367		364		372	
Hausman test								
Chi-Sq. Statistic	42.932		41.904		41.257		11.009	
Prob.	0.000		0.000		0.000		0.752	
Model	FE		FE		FE		RE	

Notes:

For a sample of 52 conventional MENA banks, I estimate the impact of corporate governance on bank value using panel data econometrics, over the period 2011-2018. Bank value is proxied by four variables: Tobin's Q (TOBIN_Q), market-to-book ratio (MB), price-earnings ratio (P/E), and stock returns (RETURNS). Corporate governance variables are: the type of ownership (OWN_TYPE), ownership concentration (OWN_CONC), board size (BOARD_SIZE), role duality

(DUAL), the percentage of independent board members (INDEP_MEM), the percentage of women board members (DIVERS), the existence of an Audit Committee (AUD_COMM), the existence of a Risk Committee (RISK_COMM), and the existence of a Nomination and Remuneration Committee (NOM_REM_COMM). Bank equity-to-asset ratio is added as an "external" governance variable. As control variables, I add the natural log of bank total assets (SIZE), the natural log of years since bank establishment (AGE), bank return on assets ratio (ROA), loan-loss-reserves as percentage of gross loans (LLP), and the real GDP growth rate (GDPG).

*** Significantly different from zero at the 1% level.

** Significantly different from zero at the 5% level.

* Significantly different from zero at the 10% level.

First, it seems that the type of ownership has little influence on MENA conventional bank valuation, as the parameter associated with OWN_TYPE is insignificant for all adopted value measures. This result does not provide support to hypothesis H1, which hypothesised a negative association between state ownership and bank value. This results matches those of (Chahine, 2007) and (Basuony, Mohamed, & Al-Baidhani, 2014) on GCC banks and (Caprio, Laeven, & Levine, 2007) on emerging market banks. Therefore, state ownership in banks does not seem to result in conflicts of interest or in lower managerial ability to allocate recourses and manage assets efficiently, or even that state banks have inflated salaries and other benefits. Note here that even after excluding the state-owned North-African banks from the estimations due to the lack of share price and market capitalisation, the sample still includes several large state-owned conventional GCC banks, e.g. Qatar National Bank (the 1st largest MENA bank), Emirates NBD (the 3rd largest MENA bank), the National Commercial Bank of Saudi Arabia (the 4th largest MENA bank), and Abu Dhabi Commercial Bank (the 8th largest MENA bank). In fact, these banks show to have – in general – better valuation multiples than their privately-owned conventional peers, e.g. First Abu Dhabi Bank (the 2nd largest MENA bank) and the National Bank of Kuwait (the 6th largest MENA bank).

Second, in line with (Al-Sahafi, Rodrigs, & Barnes, 2015) on Saudi banks and (Trabelsi, 2010) on Tunisian banks, the parameters associated with ownership concentration is negative and significant for both Tobin's Q and market-to-book ratio. This suggests that ownership concentration deteriorates conventional bank value. As OWN_CONC captures a significant impact on both Tobin's Q and market-to-book ratio (both at the 5% level), there is sufficient evidence leading not to reject hypothesis H2, which hypothesised the existence of a negative effect of ownership concentration on bank valuation.

The results in Table 3.6 show that the size of the board matters only for P/E ratio where it captures a negative and significant impact (at the 5% level) consistent with (Chahine, 2007), while it is positively but insignificantly associated with the other three valuation measures. The largest boards are concentrated mainly in the conventional Bahraini, Jordanian, Lebanese, Moroccan and Saudi banks, where the majority of them have boards of 10 members or more. Conversely, the majority of Kuwaiti, Omani, Qatari, and UAE banks have boards of 9 members or less. This provides moderate evidence that MENA conventional banks with larger boards

are less efficient, and therefore contradicts hypothesis H3, which hypothesised a negative association between larger boards and bank performance.

Duality, or the combination of chairperson and chief executive officer roles is found to be a totally irrelevant factor for all the valuation multiples of MENA conventional banks, which is shown by the insignificant effect of DUAL in all presented estimations. This result is in line with (Belhaj & Mateus, 2016) on European banks, (Arouri, Hossain, & Badrul Muttakin, 2014) and (Basuony, Mohamed, & Al-Baidhani, 2014) on GCC banks, and (Al-Sahafi, Rodrigs, & Barnes, 2015) on Saudi banks, and does not provide support to hypothesis H4, which hypothesised the existence of a negative effect of duality on bank value. Despite the negative effect on financial performance found in the previous chapter, the impact of power concentration in MENA conventional banks does not provide support to the agency theory in terms of bank market value.

The percentage of independent board members captures a positive effect on all valuation variables, but only significant for Tobin's Q (at the 5% level). Note that the significant impact recorded by INDEP_MEM on TOBIN_Q consists with the finding of (Al-Sahafi, Rodrigs, & Barnes, 2015) and (Almoneef & Samontaray, 2019) on Saudi banks, (Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015) on 9 developed countries banks, and (Trabelsi, 2010) on Tunisian banks. While the no impact of INDEP_MEM on MB is in line with (Carrillo & Bathala, 2010), and on P/E with (Battaglia & Gallo, 2015) on Indian and Chinese banks. This reveals some evidence that a higher proportion of outside directors improves MENA conventional bank value.[27] Therefore, this leads to rejecting hypothesis H5 that suggests that a higher percentage of independent board members is associated with higher conflicts and thus, deteriorates bank value.

The percentage of women on MENA conventional bank board of directors shows not to add value to the valuation of these banks, as DIVERS captures a positive sign for P/E and negative for TOBIN_Q, MB, and RETURNS, but insignificant for all of them. This result, which is consistent with (Arnaboldi, Casu, Kalotychou, & Sarkisyan, 2020) on European banks, does not add support to supporting hypothesis H6, which suggests that a higher percentage of women board is associated with elevated value. This result could be due to the low level of

[27] The highest percentages of independent board members among the conventional banks are found in the UAE banks, while the lowest is found in the Kuwait ones.

board gender diversity, which prevents women board members from exercising considerable impact on board decisions and thus having a positive contribution to bank value, where for instance in 2018, the proportion of women board members averages 5.2% in the sample of conventional banks and ranges between 0% and 33.3%.

Regarding the impact of board committees on bank performance, it is noticed that the presence of audit is a major determinants of MENA conventional bank value, as it shows to affect positively and significantly Tobin's Q (at the 5% level), market-to-book ratio (at the 1% level), and stock returns (at the 5% level). This proves the important and crucial role of this committee in the oversight and monitoring of bank management, and this provides strong support to hypothesis H7, which hypothesised that the presence of audit committee boosts MENA bank valuation. In contrast, the risk committee and the nomination and remuneration committee recorded either a negative and significant effect, or positive but insignificant effect on the exploited valuation multiples. These results lead to rejecting hypothesis H7 and may provide evidence that these two corporate governance mechanisms are not crucial for MENA bank value. Note here that many studies have also found that board committees are not major determinants of bank valuation multiples, e.g. (Basuony, Mohamed, & Al-Baidhani, 2014) and (Carrillo & Bathala, 2010), or even revealed a negative association between them, e.g. (Battaglia & Gallo, 2015).

Regarding the effect of the "external" corporate governance measure, i.e. bank capitalisation ratio, it is observed that this factor is negatively associated with MB ratio only (significant at the 1% level) and insignificant with the other measures. This shows that more capitalised MENA conventional banks have in general lower valuation multiples and stock returns and that a higher equity-to-asset ratio results in lower growth of share price.

As for the effect of the exploited control variables, the following is revealed. Larger MENA conventional banks seem to record significantly lower valuation multiples than their smaller counterparties, since SIZE has a negative on TOBIN_Q, MB and P/E. This could be due to the fact that larger banks record in general lower growth rates than smaller ones.

The age of conventional banks operating in the MENA region does not add value to their performance and thus, this variable is found to be unable to differentiate between banks in terms of value. Therefore, despite the fact that longer age is supposed to result in more experience, and thus better value, this is not the case of the banks under study.

Profitability is shown to be a very important determinant of MENA conventional bank valuation as ROA captures a positive and significant impact (at the 1% level) on TOBIN_Q, MB, and RETURNS, revealing that more profitable banks have higher increase in share price and market value. Nonetheless, the negative and significant correlation between ROA and P/E ratio may show that the increase in profits is not associated with the same increase in share price.

LLP is positively associated with all value variable and significant with P/E (at the 5%) and RETURNS (at the 1% level), which suggests that credit risk is indeed compensated with higher profits at MENA conventional banks, which in turn boost share price and share returns.

Finally, the empirical results show that economic growth improves significantly bank value (mainly Tobin's Q and market-to-book ratio) as better economic conditions encourage banks to expand lending and supply more credit, resulting in higher profits. Thus, the value of MENA conventional banks is pro-cyclical.

3.5.2 Estimations for Islamic banks

This section tests the impact of the adopted corporate governance variables and the additional control variables on MENA Islamic banks' value, and the results are included in Table 3.7.

Note that the models for all Islamic banks' value measures have been performed according to Random Effects, since their probability of their Chi-square exceeds 5%. The F-statistics in Table 3.7 show that all models are appropriate, as the null hypothesis of poor specification has been rejected at the 5% significance level for MB model and at the 1% for the other 3 models. The Durbin-Watson statistics suggest the lack of autocorrelation among the models' errors. Finally, the explanatory variables included explain 28.0% of the variation in the TOBIN_Q of the studied sample of Islamic banks, 17.0% of MB, 26.2% of P/E, and 31.2% of RETURNS. Hence, these specifications are adequate and appropriate in assessing the influence of corporate governance on Islamic bank value.

After assessing the Islamic bank models overall, the effect of individual independent and control variables on the valuation measures are analysed.

Table 3.8: The impact of corporate governance variables on Islamic banks' value

	TOBIN_Q		MB		P/E		RETURNS	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
OWN_TYPE	0.083	1.571	0.590	1.494	4.139	1.039	-0.194	-1.276
OWN_CONC	0.002**	2.494	0.017**	2.364	0.189***	2.700	-0.002	-0.667
BOARD_SIZE	-0.007	-0.642	-0.091	-1.019	-1.737**	-1.972	-0.035	-0.921
DUAL	0.071	1.046	0.591*	1.662	1.659	0.498	-0.276	-1.525
INDEP_MEM	-0.069	-1.005	-0.502	-1.038	-5.757	-1.183	0.282	0.916
DIVERS	0.002	0.006	0.596	0.249	-0.714	-0.031	0.163	0.117
AUD_COMM	-0.058	-0.860	-0.585	-1.379	-6.542*	-1.711	0.021	0.066
RISK_COMM	0.015	0.454	0.046	0.200	1.215	0.528	-0.191	-1.151
NOM_REM_COMM	0.112	1.037	0.943	1.075	11.072	1.254	-0.139	-0.422
CAPITAL	0.010***	3.907	-0.0004	-0.021	0.476**	2.135	0.004	0.364
SIZE	0.032	1.343	0.177	0.936	-0.329	-0.175	-0.058	-0.734
AGE	-0.071*	-1.980	-0.475*	-1.723	-7.999***	-2.863	0.069	0.539
ROA	0.025**	2.386	0.168**	2.175	-2.632***	-2.675	0.109**	2.096
LLP	0.004	1.132	0.020	0.924	0.089	0.436	0.017	1.308
GDPG	-0.006	-1.361	-0.034	-1.222	-0.528**	-2.008	0.002	0.095
C	-0.405	-1.011	-0.606	-0.199	47.449	1.523	0.673	0.463
R-squared	0.280		0.170		0.262		0.312	
F-statistic	3.036		1.944		3.165		3.793	
Prob(F-statistic)	0.000		0.023		0.000		0.000	
DW statistic	1.666		1.605		1.970		2.110	
Number of banks	25		25		25		25	
Number of obs.	133		158		150		151	
Hausman test								
Chi-Sq. Statistic	2.767		1.629		9.797		7.963	
Prob.	0.997		0.999		0.711		0.891	
Model	RE		RE		RE		RE	

Notes:

For a sample of 25 Islamic MENA banks, I estimate the impact of corporate governance on bank value using panel data econometrics, over the period 2011-2018. Bank value is proxied by four variables: Tobin's Q (TOBIN_Q), market-to-book ratio (MB), price-earnings ratio (P/E), and stock returns (RETURNS). Corporate governance variables are: the type of ownership (OWN_TYPE), ownership concentration (OWN_CONC), board size (BOARD_SIZE), role duality (DUAL), the

percentage of independent board members (INDEP_MEM), the percentage of women board members (DIVERS), the existence of an Audit Committee (AUD_COMM), the existence of a Risk Committee (RISK_COMM), and the existence of a Nomination and Remuneration Committee (NOM_REM_COMM). Bank equity-to-asset ratio is added as an "external" governance variable. As control variables, I add the natural log of bank total assets (SIZE), the natural log of years since bank establishment (AGE), bank return on assets ratio (ROA), loan-loss-reserves as percentage of gross loans (LLP), and the real GDP growth rate (GDPG).

*** Significantly different from zero at the 1% level.

** Significantly different from zero at the 5% level.

* Significantly different from zero at the 10% level.

In line with the findings of conventional banks, state ownership in Islamic banks is insignificantly associated with value. This result leads again to rejecting hypothesis H1 for the case of Islamic banks, as state ownership does not show to deteriorate these banks' value.

On the other hand, and in contrast to Hypothesis H2 presented above and the finding for conventional banks as well, ownership concentration is found to have a positive and significant impact on three out of the four adopted valuation measures of Islamic banks. Specifically, the effect of OWN_CONC on both TOBIN_Q and MB is significant at the 5% level and on P/E at the 1% level. Therefore, a concentration in ownership does not necessary result in abuse of power by large shareholdings or force bank management to take decisions that could harm eventually bank value. In contrast, the result may provide evidence that large shareholding in MENA Islamic banks may represent a controlling mechanism that guides and directs board of directors and senior management towards decisions that pour in better bank valuation.

The empirical results show that board size is negatively associated with all valuation multiples, but only significant for price-earnings ratio (at the 5% level).[28] Particularly, the lack of impact of BOARD_SIZE on TOBIN_Q is consistent with (Mollah & Zaman, 2015) who studied a sample of Islamic banks operating in 25 countries. Nonetheless, our results are in contrast with hypothesis H3, and suggest that larger board of directors might result in conflicts or delays in the decision making process and thus, hinders bank value.

As for role duality, it was found to have significant (positive) impact only on price-earnings ratio solely, which is line with (Mollah & Zaman, 2015). This may suggest that power concentration may not necessarily harm the valuation of Islamic banks operating in the MENA region, and thus leads to rejecting hypothesis H4. One explanation for this finding is that the existence of the Sharia Supervisory Board may participate in mitigating the controlling power of the chairman-CEO.

The proportion of independent board members has a statistically insignificant impact for all presented valuation measures,[29] and this result matches both (Mollah & Zaman, 2015) and (Nawaz, 2017). This leads to rejecting Hypothesis H5, by providing evidence that a higher

[28] The size of board of directors differs between the Islamic banks under study and ranges between 7 members in most UAE banks and up to 13 in Egyptian banks.

[29] For instance, the proportion of independent directors ranged in 2018 between a minimum of 22.2% and a maximum of 76.9%.

percentage of independent directors does not result in lower value for MENA Islamic banks. Nevertheless, the lack of a constructive effect of this variable may suggest – again – that filling the required positions of independent directors is not based on knowledge and experience, but to meet governance requirements.

The insignificant impact of DIVERS presented in Table 3.7 reveals that the percentage of women board member does not affect MENA Islamic banks valuation, leading to the rejection of hypothesis H6. This could be because the proportion of women board members in Islamic banks is low and ranges between 0 and 16.7% in 2018, with an average of 1.5% in the sample of Islamic banks.

The results related to the three board committees show that none of them add value to any of the adopted valuation multiples, leading to the rejection of hypothesis H7. Therefore, board committees at MENA Islamic banks do not play a crucial role in boosting bank value.

The "external" corporate governance measure (bank equity-to-asset ratio) is positively and significantly associated with both Tobin's Q (at the 1% level) and price-earnings ratio (at the 5% level), suggesting that higher capitalisation allows Islamic banks to engage in more profitable investment and lending activities, which in turn boost their value.

Regarding the control variables, SIZE is observed to lack significant effect on any of the adopted valuation multiples. This reveals that MENA Islamic banks have similar valuation regardless of their asset size.

Surprisingly, the age of Islamic banks operating in the MENA region affects negatively and significantly three out of the four dependent variables (TOBIN_Q, MB, and P/E), suggesting that markets value older Islamic banks' shares at a discount, while newly established ones are more attractive for investors.

Profitability is shown to be a very important determinant of MENA Islamic bank valuation as ROA captures a positive and significant impact (at the 5% level) on TOBIN_Q, MB, and RETURNS, revealing that more profitable banks have higher increase in share price and market value. Nonetheless, the negative and significant correlation between ROA and P/E ratio may show that the increase in share price and market value is not proportional to the increase in profits.

LLP is insignificantly associated with all valuation multiples. Therefore, higher credit risk is not compensated with higher profits at the MENA Islamic banks.

Finally, GDP growth rates is negatively associated with Tobin's Q, market-to-book ratio, and price-earnings ratio (significant only with the latter at the 5% level) suggesting that the value of MENA Islamic banks is counter-cyclical.

3.5.3 Comparison of the results with the literature and the differences between conventional and Islamic banks

The estimations on the impact of corporate governance variables on bank value show many difference between conventional and Islamic banks. Table 3.8 reports these differences in addition to the expected impact of the adopted variables, which are listed in the second column of the table. Note firstly that – in general – the studies summarised in Section 3.2 suggest that state ownership and a high concentration in ownership result in a lower bank value. Similarly, smaller boards, high proportion of independent directors, and CEO-chairman duality, deteriorate bank value. While in contrast, higher proportion of women board members and the existence of audit, risk, and nomination and remuneration committees improve bank value.

Overall, the empirical results obtained from a sample of the largest 77 publicly traded MENA banks match those reported by the literature in some aspects and contradict them in other one. First, state ownership shows to have insignificant impact for both conventional and Islamic banks. Second, the impact of ownership concentration on conventional banks value is in line with the literature, but these results for Islamic banks contradict the literature. Third, the impact of board size on bank value is overall inconsistent with the literature for both types of banks, and reveal that smaller boards are indeed more efficient in managing MENA banks. Fourth, the empirical results on the effect of duality, external directors, and board gender diversity are all inconsistent with the literature. Fifth, regarding board committees, the existence of an audit committee in conventional banks does have an impact that is in line with the finding of the literature, while all other results are not.

Regarding the differences between the results obtained for conventional and Islamic banks, a main difference is observed regarding the impact of ownership concentration on bank value, which deteriorates conventional banks' value and improves that of Islamic banks. Another difference is the impact of independent board members, where it adds value to conventional bank valuation, unlike Islamic banks. Finally, conventional banks seem to benefit considerably from the existence of an audit committee, which is not the case of Islamic banks.

Table 3.9: Comparison of the results with the literature and the differences between conventional and Islamic banks

	Expected impact	Actual impact							
		Conventional banks				Islamic banks			
		TOBIN_Q	MB	P/E	RETRNS	TOBIN_Q	MB	P/E	RETURNS
OWN_TYPE	-	-	-	-	+	+	+	+	-
OWN_CONC	-	- (5%)	- (5%)	-	-	+ (5%)	+ (5%)	+ (1%)	-
BOARD_SIZE	+	+	+	- (5%)	-	-	-	- (5%)	-
DUAL	-	+	+	+	+	+	+ (10%)	+	-
INDEP_MEM	-	+ (5%)	+	+	+	-	-	-	+
DIVERS	+	-	-	+	-	+	+	-	+
AUD_COMM	+	+ (5%)	+ (1%)	+	+ (5%)	-	-	- (10%)	+
RISK_COMM	+	+	+	+	-	+	+	+	-
NOM_REM_COMM	+	-	-	- (5%)	-	+	+	+	-
CAPITAL		+	- (1%)	-	-	+ (1%)	-	+ (5%)	+
SIZE		- (1%)	- (1%)	- (1%)	+	+	+	-	-
AGE		+	+	+	-	- (10%)	- (10%)	- (1%)	+
ROA		+ (1%)	+ (1%)	- (1%)	+ (1%)	+ (5%)	+ (5%)	- (1%)	+ (5%)
LLP		+	+	+ (5%)	+ (1%)	+	+	+	+
GDPG		+ (1%)	+ (1%)	+	-	-	-	- (5%)	+

Notes: significance level in parentheses.

3.6 Conclusion

This chapter studied the impact of nine corporate governance variables that are extracted from the literature on four valuation measures of the largest 77 traded MENA banks over the period 2011-2018. As the MENA region contains a large number of Islamic banks, and in order to better capture the different impact of the adopted explained variables on Islamic and conventional banks, the sample under study was split into two sub-samples: 52 conventional and 25 Islamic banks.

Overall, the results for conventional banks show that ownership concentration (i.e. block-holding ownership) seems to be a major impediment of value, as it deteriorates significantly both bank Tobin's Q and market-to-book ratio. This might suggest that the market discounts shares of banks with dominant shareholders. Secondly, larger boards of directors are associated with poorer stock performance, suggesting that smaller boards are more efficient in decision-making and oversight. The positive and significant association between the proportion of independent directors and bank Tobin's Q reflects the benefit provided by these board members. Finally, the empirical results show that the audit committee plays a major role in boosting conventional banks' market value.

For Islamic banks, ownership concentration is found to be a major trigger of bank market value and large shareholders may exercise constructive pressures on bank management. Regarding the impact of board of directors, the results show that smaller boards result in more efficient guidance and control and thus, high market value for banks. Role duality shows to have a moderate positive impact on bank value. Finally, none of board committees seems to add value to Islamic banks' market value.

Chapter Four: The Impact of Corporate Governance on MENA Banks Stability

4.1 Introduction

Banks, particularly those considered as “systemically important”, are supported by the government safety net when they face a distress. In this regard, banks benefit from the explicit guarantees provided by the government (the deposit insurance) and potential implicit guarantees (liquidity and capital support) that prevent their failures. This contingent access to this safety net represents in fact a put option provided to banks by the public authorities, where the value of this put option increases with the riskiness of bank assets and with bank leverage (Aigner, Lovell, & Schmidt, 2018). According to these authors, banks have in addition incentives to herd and take on systemic risks if the case where government guarantees are more likely to be triggered following multiple bank failures. Consequently, bank shareholders could benefit from taking on more stand-alone and systemic risks, where the benefits of excess risk-taking increase with a more generous safety net since shareholders try to shift risks to the taxpayers. (Pathan, 2009) argues that the agency problem in the banking sector is different from that in other sectors. In this regard, for most stakeholders (including depositors), the primary concern is minimising risk, but in contrast, shareholders are probably willing to take on more risk. In parallel, bank managers who are more aligned with shareholders tend to take additional risks to meet shareholders’ preference for higher risk, which can be diversify away. The international financial crisis led to re-examining banks’ corporate governance practices and questioning by bank supervisors how managerial entrenchment and the boards’ failures to monitor executives’ behaviour and performance, might led to the excessive risk-taking resulting in financial instability. Risk-taking has been among the first issues that captured the attention of bank supervisors and regulators, customers (mainly depositors), and researchers because of the particularity of banks’ funding structures and their considerable opacity. These worries have been amplified by concerns that banks with poor governance frameworks may even engage in additional excessive, opaque, risk-taking behaviour, resulting in bank failures. In this regard, (Kashyap, Rajan, & Stein, 2008) argue that bank governance problems have been at the core of the 2008 international financial crisis, which resulted in large bank failures. Accordingly, improving bank governance may help reducing bank defaults. (Campbell, 2007) states that credit risk is the most important financial risk a bank faces and that abusive credit risk-taking may result in ineffective governance mechanisms. Therefore, better risk management practices are crucial to ensure the implementation of sound corporate governance

mechanisms and to mitigate bank risk and fragility, preserve its stability, and protect its stakeholders. Consequently, this chapter aims at linking particularly bank credit risk and bank stability to the corporate governance variables of MENA banks and to detect how the adopted

Few studies have tackled the impact of corporate governance on bank stability in the MENA region, where they suffer several weaknesses. First, most of those studies focus on the GCC countries, which may prevent generalising their result to the entire MENA region. Second, the focus on the GCC countries renders the size of the studied samples. Third, they mainly focus on board characteristics (excluding board committees), while few or no consider ownership factors. Fourth, no previous research on the MENA region has studied if/how corporate governance mechanisms affect differently the Islamic and the conventional banks, and thus, there is still no clear empirical evidence whether corporate governance variables shape conventional and Islamic bank risk and stability differently.

This chapter aims at filling the above gaps by analysing the effect of the adopted corporate governance mechanisms and structures on the risk profile and stability of MENA banks. To do so, Panel data econometrics is adopted on a sample formed of the largest 106 MENA banks, over the period 2011-2018. Regarding the corporate governance structure, nine variables are exploited that represent mainly two aspects: ownership structure and board organisation and composition. Moreover, to obtain more homogenous samples, the sample is split into two sub-samples according to their type: conventional and Islamic. Additionally, this allows testing the impact of the adopted corporate governance factors on risk and stability, taking into consideration bank structure, activities, and businesses. This is due to the fact that conventional banks main activities are interest-based, while those of Islamic banks are profit-sharing-based. An initial review of the studied banks show that banks with high stability measures are – in general – those with high ownership concentration, medium to large boards of directors, high proportion of independent directors, and medium to low proportion of female board members. This is the case of Crédit Agricole du Maroc (Morocco – conventional – public), Arab National Bank (Saudi Arabia – conventional – private), Sharjah Islamic Bank (UAE – Islamic – public), Arab Banking Corporation (Bahrain – conventional – public), Lebanon and Gulf Bank (Lebanon – conventional – private), Abu Dhabi Islamic Bank (UAE – Islamic – private), BBAC Bank (Lebanon – conventional – private), QNB AlAhli Bank (Egypt – conventional –

public), Bank of Bahrain and Kuwait (Bahrain – conventional – private), and Jordan Islamic Bank (Jordan – Islamic – private). In contrast, banks with lower stability are shown to be – in general – characterised with high blockholdings, medium sized board of directors, high proportion of independent directors, and medium to low proportion of female board members. This is the case of Commercial Bank International (UAE – conventional – private), United Arab Bank (UAE – conventional – private), Banque du Caire (Egypt – conventional – private), Emirates Islamic Bank (UAE – Islamic – public), Noor Bank (UAE – Islamic – public), Bahrain Islamic Bank (Bahrain – Islamic – public), Bank of Commerce & Development (Libya- conventional – public), Banque Misr (Egypt – conventional – public), National Bank of Egypt (Egypt – conventional – public), Bank AlJazira (Saudi Arabia – Islamic – private), and Mashreq Bank (UAE – conventional – private). To link these banks' corporate governance frameworks and risk and stability, see Table 4.1.

The empirical results show some interesting findings, mainly that – indeed – the exploited variables do affect differently conventional and Islamic banks. For instance, state ownership has positive effect on MENA banks in terms of risk standing and stability, while it has the opposite impact on Islamic banks. This may suggest that state-owned Islamic banks have more access to the government safety net, which encourages them to take on more risks. Ownership concentration could deteriorate conventional banks stability, with no significant impact on Islamic banks. The existence of two boards at Islamic banks may play a role in mitigating blockholding power. Board size shows to have a constructive effect on conventional banks stability, and thus larger boards may induce more discussions on bank lending and risk-taking strategies. Another major difference is regarding the board nomination and remuneration committee: while it is a risk-mitigating factor at conventional banks, it may even be associated with higher risk and lower stability at Islamic banks.

This chapter precedes as follows. Section 4.2 sheds light on the relevant literature. In Section 4.3, the empirical methodology and the exploited variables are illustrated. The data set is presented in Section 4.4. The empirical results and their interpretations are included in Section 4.5. The conclusion of the chapter is in Section 4.6.

Table 4.1: Risk and stability indicators and governance structures of some MENA banks – 2011-2018 averages

Bank	Country	LLP	Z-score	Modified Z-score	Type	Ownership type	Ownership concentration	Board size	% of Independent board members	% of women board members
Crédit Agricole du Maroc	Morocco	4.61	384.51	-	Conventional	Public	90.10	11.00	1.00	0.09
Arab National Bank	Saudi Arabia	2.47	390.48	167.98	Conventional	Private	61.44	10.00	0.50	0.00
Sharjah Islamic Bank	UAE	3.96	297.32	269.82	Islamic	Public	50.88	7.25	0.57	0.00
Arab Banking Corporation	Bahrain	3.42	334.93	232.92	Conventional	Public	100.00	8.88	0.36	0.00
Lebanon & Gulf Bank	Lebanon	4.13	268.70	110.65	Conventional	Private	84.91	10.13	0.63	0.00
Abu Dhabi Islamic Bank	UAE	4.43	266.60	158.32	Islamic	Private	49.93	7.00	0.57	0.00
BBAC	Lebanon	6.48	199.36	108.35	Conventional	Private	91.52	9.00	0.45	0.00
QNB AlAhli Bank	Egypt	3.93	334.00	55.00	Conventional	Public	100.00	9.00	0.48	0.13
Bank of Bahrain and Kuwait	Bahrain	5.95	288.04	301.42	Conventional	Public	62.85	11.88	0.39	0.06
Jordan Islamic Bank	Jordan	11.51	177.57	123.51	Islamic	Private	75.22	11.00	0.64	0.05
Commercial Bank International	UAE	7.81	20.47	9.10	Conventional	Private	72.13	9.00	0.56	0.11
United Arab Bank	UAE	4.31	41.98	13.14	Conventional	Private	54.49	10.50	0.57	0.10
Banque du Caire	Egypt	3.69	24.15	7.68	Conventional	Private	100.00	9.00	0.67	0.11
Emirates Islamic Bank	UAE	9.77	21.04	12.05	Islamic	Public	100.00	7.00	0.57	0.00
Noor Bank	UAE	8.33	26.81	16.17	Islamic	Public	94.15	9.00	0.67	0.11
Bahrain Islamic Bank	Bahrain	6.59	73.65	37.20	Islamic	Public	68.79	8.75	0.47	0.04
Bank of Commerce & Development	Libya		48.43		Conventional	Public	100.00	7.50	1.00	0.00
Banque Misr	Egypt	10.05	52.91	19.94	Conventional	Public	100.00	8.13	1.00	0.14
National Bank of Egypt	Egypt	5.40	95.63	11.08	Conventional	Public	100.00	9.00	0.67	0.22
Bank AlJazira	Saudi Arabia	2.49	71.99	43.69	Islamic	Private	20.97	8.75	0.39	0.00
Mashreqbank	UAE	4.69	88.22	75.69	Conventional	Private	82.13	6.63	0.30	0.00

Source: bank annual reports and BankFocuse database.

4.2 Literature review

This section will present a review of the related literature, which detected the effect of corporate governance on bank risk and stability. The literature review will be divided into three parts: the first part presents and discusses the findings of previous studies done on the developed countries, while those done on the emerging markets (including the MENA region) will be presented and discussed in the second part. A third part will include the studies mixing between developed and developing countries. This is done because the corporate governance frameworks between the two groups of countries are indeed different, and consequently, the impact of corporate governance variables on bank risk and stability may be also different.

4.2.1 Studies on the developed countries

In order to investigate the link between corporate governance framework and risk-taking, (Bhagat, Bolton, & Lu, 2015) exploit 353 U.S financial institutions (250 commercial banks, 60 investment banks, and 43 life insurance companies) during the period 2002-2012, and conclude that banks enjoying better corporate governance (proxied by CEO ownership) engage in less risk-taking. In particular, they detect a positive and significant association between CEO ownership and Z-score, and a negative and significant association between CEO ownership and Merton distance-to-default. The authors argue that this result has an important policy implications, where in order to discourage banks from engaging in excessive risk, policy-makers should focus on directors' compensation and stock ownership.

Using a sample of 236 commercial banks between 2005 and 2008, (Grove, Patelli, Victoravich, & Xu, 2011) examine how corporate governance shape U.S. bank risk before the 2008 international financial crisis. The authors reveal that larger boards show to have negative association with NPL ratios, while the proportion of inside directors and role duality are negatively but insignificantly correlated with asset quality.

(Felício, Rodrigues, Grove, & Greiner, 2018) explore the relationship between corporate governance mechanisms and European bank risk (measured by stock's Total, Systemic, and Idiosyncratic risks), by employing a panel dataset including the 97 largest European listed banks between 2006 and 2010. The authors show that corporate governance mechanisms do influence bank risk and that during the financial crisis, different governance mechanisms could minimise or accentuate the agency conflict between shareholders and managers. In this regard,

they reveal that board size and board meetings are positively associated with systemic risk, while role duality and directors' age are negatively correlated with the three risks. In contrast, the author show that CEO compensation has a positive and significant influence on total and systemic risks.

Conversely, state ownership was found to have no significant impact on two risk measures (Z-score and distance-to-default) by (Saghi-Zedek & Tarazi, 2015) who study a sample of 750 banks from 17 Western European countries over the 2002-2010 period.

The impact of corporate governance mechanisms on European Union banks is examined by (Vasilakopoulos, Tzovas, & Ballas, 2018) who study 98 banks from 23 European Union countries in the aftermath of the 2008 financial crisis (the period 2010-2013). These authors ague firstly that LLP ratios are important income-smoothing tool for those banks. As for the association between credit risk and governance variables, they reveal that board of directors' characteristics are associated with bank LLP levels. For instance, they show that board size, board independence, CEO-chairman role duality, and CEO remuneration are all associated with higher LLP ratios.

Using a sample of 115 UK banks between 2003 and 2012, (Harkin, Mare, & Crook, 2020) investigate how governance structures affect bank risks, using loan impairments as a ratio of gross loan to proxy for risk. The authors confirm that combining the roles of CEO and Chairman lowers risk, and argue that this is not consistent with the implications of agency theory. They also find that a higher proportion of non-executive directors lower the probability of bank failure. In this regard, the authors claim that since these type of directors represent a form of independent oversight, then independence matters for bank risk. Regarding the other board characteristics, i.e. board size, gender diversity, and the existence of a remuneration committee, they do not show to have a significant impact on bank risk. Furthermore, state ownership is not a significant determinant of credit risk according to these authors.

(Rose, 2017) analyses board structures in 35 listed Danish banks during the period 2005-2009 to explore the relationship between corporate governance mechanisms and credit risk exposure, proxied by the probability of obtaining state capital (i.e. bailout) after the international financial crisis. Firstly, the author shows that an increase in directors' remuneration is associated with lower credit risk and the likelihood of receiving state capital is reduced when managerial remuneration increases. In parallel, a higher proportion of inside

directors results in lower credit risk exposure and more inside directors on the executive board constitutes a stronger "checks and balance" system. The author also reveals that the proportion of female board members does not have a significant effect on bank risk, while a higher proportion of employees' board members lower the probability of need for bailout.

In order to explore the relationship between bank credit risks and corporate governance structures, (Switzer & Wang, 2013) exploit a sample of 228 U.S. commercial banks over the period 2001-2010, and use the default probabilities to measure these banks' risk taking behaviour. The authors provide evidence that banks with larger boards have significantly lower credit risk levels. On the other hand, institutional ownership and higher percentage of independent directors do not discriminate between U.S. commercial banks in terms on probability of default. Similarly, other management characteristics, e.g. CEO and CFO ages and business of directors are not major determinants of bank risk.

(Faleye & Krishnan, 2017) study the effect of bank governance on risk-taking in commercial lending, by examining a sample of 80 U.S. bank operating between 1994 and 2008. The authors measure bank risk-taking in lending decisions by adopting a binary variable that equals 1 if bank borrower's long-term Standard and Poor's credit rating at loan origination date is investment grade (BBB or higher), 0 otherwise. They firstly characterise boards with an index depending on board size, fraction of independent directors, role duality, and if all directors are elected annually. Their results show that board index is significantly positively associated with the probability of lending to an investment grade borrower, suggesting that banks with more effective boards are more likely to lend to less risky borrowers. As for the impact of the individual variables, they find that smaller boards, a higher proportion of independent directors, and the separation of CEO-chairman, all have positive impact on the probability of lending to high-grade borrowers. On the other hand, CEO ownership is not a major determinant.

To investigate the role of corporate governance in earnings management behaviour adopted by 315 U.S. listed banks during the Sarbanes-Oxley Act era (i.e. 2003-2008), (Leventis & Dimitropoulos, 2012) examine the association between a Corporate Governance Index and earnings management measures. They show that banks with more efficient corporate governance mechanisms report smaller positive income than those with weak governance effectiveness. Moreover, the authors reveal that well-governed banks have lower engagement

in aggressive earnings management behaviour through the use of discretionary loan loss provisions and realise security gains and losses.

(Ibáñez-Hernándeza, Peña-Cerezob, & Araujo-de-la-Matac, 2019) study the impact of corporate governance factors on the solvency of Spanish banks, and consequently on their need for government bailout, using a sample of 137 institutions over a full credit cycle extending between 2002 and 2017. The authors find that banks with political dependence have witnessed solvency problems during the 2002-2007 recession period and had to be bailed out with public funds. In contrast, board factors such as chairman tenure, board size, and the proportion of female board directors show to be irrelevant.

The impact of gender diversity was also tested by (Gallucci, Santulli, & Tipaldi, 2020), using a sample of 100 banks from Switzerland, Italy, Spain, and Germany operating between 2008 and 2017. In particular, the authors detected the impact of the percentage of women board members on the standard deviation of ROA, as a proxy for bank risk, in addition to many ownership and board characteristics as control variables. The empirical results obtained by them show that gender diversity does mitigate bank risk. In parallel, they find that blokholding, director ownership, and the proportion of independent directors lower bank risk. In contrast, they show that board size and intuitional ownership deteriorate bank risk standing.

Finally, (Berger, Imbierowicz, & Rauch, 2016) analyse the influence of bank ownership, management, and compensation structures on U.S. bank failures during the 2008 financial crisis, by comparing 85 failed commercial banks in the period 2007:Q1-2010:Q3, with a control sample of 256 non-failed U.S commercial banks over the same period. Their results show that bank failures are strongly influenced by ownership structure and high shareholdings of lower-level management and non-CEO higher-level management increase failure risk. In contrast, CEO shareholdings do not record a significant impact on bank defaults. The authors argue that high ownerships in banks encourage non-CEO managers to take higher risk due to moral hazard incentives. As for other factors, they reveal that duality results in lower failure risk, while board size, the percentage of outside directors, and CEO compensation do not affect significantly bank failure risk.

4.2.2 Studies on the emerging and developing countries

4.2.2.1 Conventional banks

To assess board structures in the context of the ongoing Chinese banking reforms, (Liang, Xu, & Jiraporn, 2013) study the 50 largest Chinese banks over the period of 2003-2010, and analyse the impact of a set of board characteristics on bank asset quality. They find that board size has a negative but insignificant effect on risk, and the proportion of board independent directors is positively but also insignificantly associated with risk. They reveal that the degree of bank boards' political connection is negatively correlated with bank asset quality, while state ownership is not a trigger of bank risk.

(Dedu & Chitan, 2013) investigate the influence of board characteristics on Romanian bank risk (proxied by Z-score) over the period 2004-2011 and reveal that the percentage of independent board members affects positively and significantly Z-score, while board gender diversity does not.

In the context of Ghana banks, (Bokpin, 2013) detects the effect of corporate governance and ownership structure on bank risk, over the period 1999-2007. By using LLP ratio as risk measure, the author shows that board size is insignificantly related to asset quality. In parallel, he reveals that board independence is negative associated with LLP, suggesting that board independence leads banks to make less provision for loan losses (i.e. a sign of better asset quality), and that the independent judgment brought to bear on board deliberation guarantees that banks make good loans. Similarly, (Bokpin, 2016) documents the impact of ownership structure and corporate governance on Ghana bank risk-taking behaviour, using a sample of 26 banks over the period 2000-2013. The author finds that board size boosts significantly bank Z-score and argues that this result supports the hypothesis that increasing board size means that other new expertise is brought on board, which increases the monitoring quality. As for board composition (i.e. the proportion of non-executive directors), the author reveals a negative and significant association with Z-score. In contrast, he finds that state or foreign ownerships have no significant effect on bank risk-taking.

The effects of bank ownership type (domestic, foreign, and state ownership) on the Argentinian bank NPL ratios, between 1993:Q2 and 1999:Q4 was analysed by (Berger , Clarke, Cull, Klapper, & Udell, 2005). The authors detect very high nonperforming loan ratios for state-

owned banks, which – according to them – may partly reflect the different goals and lending directives of these institutions.

By examining a sample of 37 listed Taiwanese banks operating between 2001 and 2006, (Chou & Lin, 2011) study the effects of differential ownership structures on the risk-taking behaviours of banks, represented by bank overdue loans and regulatory capital. Their results reveal that banks with larger inside management ownership and higher state ownership have higher overdue loans and lower capital adequacy ratios, whereas banks with higher foreign ownership did not record considerable difference in overdue loans or regulatory capital. Finally, board ownership shows to have positive and significant influence on overdue loans and negative and significant impact on regulatory capital.

In the context of the Indian banking sector (Bezawada & Adavelli, 2020) test the association between board characteristics and asset quality of a sample of 34 Indian banks, and show a constructive effect of board size and the proportion of independent directors on bank asset quality. Conversely, board meetings and business do not shape bank asset quality.

In a study highlighting the effect of adopted corporate governance on the non-performing loans in Nigeria, (Adegboye, Ojeka, & Adegboye, 2020) constructed corporate governance index for Nigerian Banks over the 2009-2017 period, and conduct panel data analysis that exploits static and dynamic estimators, in order to detect the sensitivity of the non-performing loans to the adopted corporate governance structures. The author reveal firstly that the implementation of sound corporate governance structure does enhance bank loan quality and stability, shown by a negative and significant association between the constructed index and NPLs. Furthermore, the authors proceed to test the impact of individual corporate governance variables on bank NPLs and reveal a negative impact of board size, while board independence, director ownership, board meetings and the size of board risk committee do not show to be important determinants for Nigerian banks stability. In a wider framework, (Mutarindwaa, Schäfer, & Stephan, 2020) investigate the corporate governance influence on African bank stability using 216 commercial banks operating in 44 African countries over the period 2000-2015. The authors proxied bank corporate governance structures using board size, board independence, CEO duality, board diversity and ownership concentration, while they proxied for bank stability using Z-score and NPL and LLP ratios. Their empirical results show that board size, board independence, and ownership concentration are not important determinants of African

bank stability. In contrast, they reveal that CEO duality harms bank stability while board gender diversity improves it.

For the GCC banks, (El-Masry, Abdelfattah, & Elbahar, 2016) examine the relationship between corporate governance and risk management using a sample 90 banks over the period 2003-2012. The authors exploit the LLP ratio as credit risk measure and find that board size and independence (i.e. the percentage of non-executive directors) and the percentage of female board members do not influence significantly bank credit risk, while duality has a negative and significant association with bank credit risk. Regarding board committees, the authors reveal that the existence of audit and risk committees are not major determinants of bank risk standing. Finally, as for ownership, they show that government ownership in GCC banks increases significantly credit risk and higher proportion of state ownership is associated with higher provisions.

In the Tunisian banking sector context, (Ben Moussa, 2019) examines the impact of corporate governance variables (board size, composition, role duality, and gender diversity) on bank credit risk (NPL ratio). The author exploited a sample of listed Tunisian banks over the period 2000-2014 and showed that a higher number of board members and a higher proportion of independent directors are not necessarily associated with lower credit quality. She finds also that the cumulative functions of chairperson and CEO affects negatively the weight of the board and makes it less effective. In contrast, the author finds a negative and significant association between board gender diversity and NPL ratios, suggesting that the presence of more women on the board does influence credit risk, and argues that female directors differ from male directors with regard to risk attitude, which affects board's monitoring ability and the decision-making process. As for ownership, government ownership is found to increase significantly credit risk, and foreign ownership lowers credit risk, while institutional ownership is irrelevant.

Also in the context of Tunisian banks, (Rachdi, Trabelsi, & Trade, 2013) examine how board characteristics affect risk in the Tunisian banking industry. The authors study a sample of the largest 11 Tunisian conventional banks operating over the period 2001-2011 and adopted three risk measures: insolvency risk (measured by Z-score), credit risk (measured as credits/ deposits), and global risk (measured as the standard deviation of ROA). They find that smaller and dual-functions boards are correlated with higher insolvency risk. They also reveal that a

higher proportion of independent directors results in an increase in global risk, while lower CEO stock ownership has no influence on any risk measure.

A sample containing 144 conventional MENA banks (across 12 countries) over 2001-2012 is examined by (Haque, 2019) who aim to detect the association between their ownership characteristics on one hand, and default risk (represented by Z-score), portfolio risk, and credit risk, on the other hand. The author states that foreign shareholding has an inverse relationship with bank risk-taking where it has a negative association with all risk measures. Similarly, ownership concentration has a negative and significant influence on both portfolio and credit risks. On the other hand, he shows that government ownership and institutional ownership do not have any impact of MENA bank risks.

4.2.2.1 Islamic banks

The relationship between corporate governance and financial stability of the Islamic banking institutions in Malaysia is examined by (Lassoued, 2018), using the Z-score as risk indicator, while adopting the Sharia board size, board of directors size, and the proportion of independent directors as corporate governance variables. The authors exploit 16 banks from 2005 to 2015, and find that board size and the percentage of independent members have significant positive impact on Islamic bank stability. In contrast, the Sharia board size is found to have no impact. The authors argue that these results provide evidence that larger Sharia board is not accommodative to an increase in financial stability, and thus the power and the supervisory effectiveness of these boards toward risk-taking behaviour suffer in case of centralised Sharia-compliant governance structures.

The effect of corporate governance on GCC Islamic bank Z-score has been studied by (Ben Zeineb & Mensi, 2018), who exploited a sample of 56 banks operating between 2004 and 2013. The authors reveal that state-owned banks have lower Z-score, due to higher proportions of non-performing loans. Regarding board size, they find it not to be a major trigger of risk, while role duality does deteriorate bank stability.

Also for GCC Islamic banks, (Kolsi & Grassa, 2017) examine the impact of corporate governance mechanisms on earnings management practice for a sample of 26 banks operating between 2004 and 2012. The authors aim to estimate discretionary accruals based on discretionary loan loss provisions (DLLPs) and how these are correlated with the adopted

corporate governance frameworks. Regarding the size of Sharia supervisory board, it is find that larger ones set less DLLPs. Secondly, the authors show that larger board of directors and higher independence are associated with lower DLLPs. Conversely, the size of board audit committee is not a determinant of credit risk, while the number of its meetings is negatively associated with this risk. Regarding ownership, the authors find that the existence of blockholders (i.e. higher concentration) boosts DLLPs, whereas institutional ownership has no effect on earnings management through DLLPs.

(Basiruddin & Ahmed, 2020) examined The association between corporate governance variables and Shariah non-compliant risk using a sample of 16 Malaysian and 13 Indonesian Islamic banks operating over the period 2007-2017. In particular, they reveal a positive association between board size and the Sharia non-compliant risk, which suggests that smaller boards may contribute to a more effective communication. Additionally, the authors show that higher proportion of independent directors results in lower Shariah non-compliant risk, which is consistent with the agency theory hypothesis and proposes that the independent and non-executive board members contribute to an effective monitoring by the board. In contrast, they find that board meetings and compensation do not influence Shariah non-compliant risk.

The potential impact of foreign directorship on the “opportunistic behaviour” of bank managers was examined by (Almutairi & Quttainah, 2020). The authors tested how foreign directors in conventional and Islamic banks govern bank management practices regarding discretionary loan loss provision using a sample of 164 banks operating in 15 emerging markets between 1993 and 2015. They reveal that foreign directors of Islamic banks increase the boards’ effectiveness in obstructing management opportunistic behaviour, while foreign directors in conventional banks diminishes boards’ effectiveness in preventing the unethical practices of the management. The authors also show that Islamic banks having foreign directors report lower earnings management and expense-preference behaviour by bank managers. They argue that the presence of Sharia supervisory board play an important role in helping foreign directors to have more effective monitoring.

Finally, (Grassa, 2016) investigates whether Islamic banks with more developed corporate governance mechanisms benefit from higher credit ratings. The author studies a sample of 80 Islamic banks from South East Asia and the GCC over 2005-2011 and finds that Islamic bank credit ratings are negatively associated with the number of blockholders (with ownership more

than 5%), CEO tenure and role duality, and foreign ownership. In contrast, she reveals that rating is positively correlated with share listing, board independence, board gender diversity, foreign directors, board expertise, and Sharia board expertise. On the other hand, board size is not a major determinant of Islamic bank rating.

4.2.3 Studies on mixed markets

An empirical assessment of theories concerning risk taking by banks (proxied by Z-score), their ownership structures, and national bank regulations was conducted by (Laeven & Levine, 2009). In order to test the potential conflicts between bank managers and owners over bank risk-taking, and how the same bank regulation could have different effects on bank risk-taking depending on the comparative power of shareholders of each bank, the authors study 250 privately-owned banks across 48 countries. The authors find that banks with more powerful owners tend to take greater risks. They argue that this result is consistent with theories predicting that equity-holders have stronger incentives to increase risk than non-shareholding managers and debt-holders, and large owners with substantial cash flow rights have the power and incentives to induce the bank's managers to increase risk-taking. They add that this finding holds when conditioning on international differences in bank regulations.

The role of corporate governance in the relationship among credit, interest rate, and liquidity risks encountered by banks and how banks make the trade-offs among these risks was investigated by (Chen & Lin, 2016). They study a sample consisting of 1604 banks operating in 43 countries over the period 2002-2010. As a first finding, the authors show that credit, interest rate, and liquidity risks are interrelated, and that the interactions among them can be reduced by corporate governance and regulations. As for the effect of corporate governance factors on risk, the authors find that board size is positively associated with liquidity risk (measured by the inverse of LCR and of NSFR ratios), while it has no influence on both credit risk (measured by NPL ratio) and interest rate risk (measured by the cumulative one-year repricing gap/total assets). The proportion of board independent members shows to have positive impact on credit risk and negative impact on interest rate risk, whereas role duality boosts both interest rate and liquidity risks. As for ownership concentration, the authors reveal a positive association with both credit risk and liquidity risks, and a negative association with interest rate risk.

In order to examine how the relation between corporate governance and bank risk is affected by the existence of financial safety net, (Anginer, Demirguc-kunt, Huizinga, & Ma, 2018) study the relations between bank corporate governance frameworks and risks for a sample of U.S. banks operating between 1990 and 2014, and a sample of international banks operating between 2004 and 2008. The author exploit three variables reflecting a bank's stand-alone risks (distance to default, leverage ratio, and asset volatility) and three variables that capture a bank's contribution to financial sector systemic risk, namely the marginal expected shortfall and systemic risk. On the U.S. data, they show a stronger relation between shareholder-friendly corporate governance and stand-alone and systemic risks for banks compared to nonfinancial firms. Additionally, the authors reveal that the relation between risk and shareholder-friendly corporate governance is stronger for larger banks, a finding that is consistent with the too-big-to-fail paradigm.

Finally, (Gaganis, Lozano-Vivas, Papadimitri, & Pasiouras, 2020) exploit a large sample of 356 banks from 50 countries operating between 2002 and 2017 to examine whether and how macro-prudential policies and corporate governance interact in shaping bank risk, measured by Z-score, distance to default, and probability of default. The authors constructed a corporate governance index and show that the impact of bank corporate governance on risk-taking depends crucially on the adopted macro-prudential policies, and this impact becomes more significant as the number of macro-prudential policies increases.

4.2.4 The main themes emerging from the literature on corporate governance and bank stability

After the thorough and comprehensive coverage and discussion of the relevant literature presented in the previous sub-sections, the exploited corporate governance variables and stability measures used by the previous studies are summarised in Appendix I. This is done in order to list and compare the most used corporate governance and explanatory variables in the literature and their interactions and associations, in order to (1) develop this chapter's hypotheses and (2) select the variables that will be subsequently used in the econometric model construction.

Overall, the review of literature on corporate governance and bank stability revealed the following:

- **The Impact of state ownership**: the majority of listed studies, e.g. (Borisova, Brockman, Salas, & Zagorchev, 2012) and (Harkin, Mare, & Crook, 2020) have found a positive association with bank stability.
- **The Impact of ownership concentration**: the majority of listed studies, e.g. (Rachdi, Trabelsi, & Trade, 2013), (Chen & Lin, 2016), (Haque, 2019) and (Laeven & Levine, 2009) have found a negative association with bank stability.
- **The Impact of board of directors' size**: the majority of listed studies, e.g. (Kolsi & Grassa, 2017), (Grove, Patelli, Victoravich, & Xu, 2011), (Bezawada & Adavelli, 2020) and (Lassoued, 2018) have found a positive association with bank stability.
- **The Impact of board of role duality**: the majority of listed studies, e.g. (Vasilakopoulos, Tzovas, & Ballas, 2018), (Ben Moussa, 2019), (Rachdi, Trabelsi, & Trade, 2013) and (Mutarindwaa, Schäfer, & Stephan, 2020) have found a negative association with bank stability.
- **The Impact of percentage of independent directors**: the majority of listed studies, e.g. (Vasilakopoulos, Tzovas, & Ballas, 2018), (Chen & Lin, 2016), (Almutairi & Quttainah, 2020) and (Bokpin, 2016) have found a positive association with bank stability.
- **The Impact of board gender diversity**: the majority of listed studies, e.g. (Ben Moussa, 2019) and (Gallucci, Santulli, & Tipaldi, 2020) have found a positive association with bank stability.
- In addition, **the Impact of the existence of audit, risk, and nomination and remuneration committees** on bank stability will be tested.

4.2.5 Hypotheses development

Despite the fact that there are some discrepancies in the findings of the above listed literature, it is possible to develop several hypotheses based on the findings of the majority of the covered studies. Consequently, the following hypotheses have been developed.

- **Hypothesis 1** (H1): state ownership has a positive impact on bank stability.
- **Hypothesis 2** (H2): ownership concentration has a negative impact on bank stability.
- **Hypothesis 3** (H3): board size has a positive impact on bank stability.
- **Hypothesis 4** (H4): role duality has a negative impact on bank stability.

- **Hypothesis 5** (H5): the percentage of independent directors has a positive impact on bank stability.
- **Hypothesis 6** (H6): board gender diversity has a positive impact on bank stability.
- **Hypothesis 7** (H7): the existence of audit, risk, and nomination and remuneration committees has a positive impact on bank stability.

4.3 Methodology and variables specifications

4.3.1 Bank risk and stability measures

Bank risk and stability can be measured using several techniques and variables. The most common measures used in the literature are loan-loss provisions as percentage of gross loans and Z-score indicator. Consequently, following the literature summarised in Appendix I, this research will exploit these two variables to proxy for bank risk.

As for Z-score, note that this measure provides an assessment of bank "stability" (also its opposite bank "fragility") and indicates the number of standard deviations a bank returns have to fall below its expected value before equity is totally depleted and the bank becomes insolvent (i.e. defaults). Z-score is computed as follows: $ZSCORE = \frac{ROA + E/A}{\sigma ROA}$

where *ROA* is the return on average assets, *E/A* is the equity-to-asset ratio, and σROA is the 3-year standard deviation of *ROA*, for years t_{-2}, t_{-1}, and t_0.

In addition to the classical Z-score, which is adopted by the literature, this research will use a "modified version" of Z-score. This modified version is in fact developed and adopted by the International Monetary Fund in order to assess the fragility (and stability) of banks and/or banking systems. The modified Z-score is based on risk-weighted assets instead of total assets, on capital adequacy ratio instead of equity-to-asset ratio, and on return on average risk-weighted assets instead of return on average assets. The modified Z-score is computed as follows:

$$\text{Modified ZSCORE} = \frac{\text{RORWA} + \text{CAPITAL ADEQUACY RATIO} - \text{TRESHOLD}}{\sigma \text{RORWA}}$$

where *RORWA* is the return on average risk-weighted assets, the capital adequacy ratio is the capital divided by on- and off balance sheet risk-weighted assets, $\sigma RORWA$ is the 3-year standard deviation of *RORWA*, for years t_{-2}, t_{-1}, and t_0. On the other hand, the threshold is the minimum capital adequacy ratio set by the banking regulators of the country. In order to

use a comparable modified Z-scores, a threshold of 8% is used, which is the minimum global capital adequacy ratio as set by Basel Committee. The modified version of Z-score has an advantage over the classical version as is it considers the bank capital solvency instead of bank capitalisation and shows how bank management uses the solvency ratio as a signal to the market.

On the other hand, it is worth noting that Appendix I shows that some other techniques have been adopted by the literature as proxy for bank stability (or bank fragility). The most frequently used is the literature is Merton's (1974) Distance-to-Default (computed as the market value of the firm's assets minus the face value of its debt divided by the volatility of the firm value). Mathematically, Distance-to-Default is computed as follows:

$$DD_T = \frac{\ln\frac{V}{D} + \left(r - \frac{1}{2}\sigma^2\right)T}{\sigma\sqrt{T}}$$

Where V is the market value of firm assets, D is the face value of debt, r is the risk-free rate, and σ is the annualised volatility of value of assets. The above equation states that the Distance-to-Default is simply the expected difference between the bank asset value relative to the default "barrier", after normalising for the volatility of assets. Hence, the higher the value of the assets (i.e. V) relative to the strike price or default barrier (i.e. D), the farther away from default the firm is. The Distance-to-Default measure, which is in fact a *market-based* measure, was firstly introduced commercially by Moody's KMV, and later became a widely used default risk indicator for nonfinancial corporations particularly. Nonetheless, the adoption of Distance-to-Default to measure default risk in financial institutions is not straightforward, partly due to the differences between the liabilities of these institutions compared to those of nonfinancial corporations, even though the Distance-to-Default is able to predict ratings downgrades of banks (Chan-Lau and Sy, 2006). Unlike the accounting-based Z-score measure (and the modified Z-score), the Distance-to-Default measure is based on market value data and requires the availability of market values of bank assets. While the accounting data are available for the entire sample under study, the lack of sufficient data for the market value of bank assets for

the overwhelming majority of studied banks prevents adopting the Distance-to-Distance measure in our empirical work.

4.3.2 Model specification

The exploited data set is a panel data that includes banks, which differ in terms of value and in the adopted corporate governance frameworks. The Panel Fixed Effects method allows considering bank-idiosyncratic effects in the estimations through including individual intercept for each bank in the regression equation. Alternatively, the Panel Random Effects allows taking into consideration two types of unobserved effects influencing the dependent variable: (i) a bank-specific, time-constant effect, assumed random; and (ii) an idiosyncratic time-varying random error. The choice between Random Effects and Fixed Effects methods is based on the (Hausman, 1978) test.

For the empirical estimations, the chapter will exploit the panel model:

$$Y_{it} = \alpha_i + \beta X_{it} + \gamma Z_{it} + \varepsilon_{it}$$

where, Y_{it} is the dependent variables (bank risk indicators) observed for individual *i* at time *t*, X_{it} is the time-variant $1 \times k$ vector of independent variables (the set of corporate governance measures), Z_{it} is a $1 \times k$ vector of control variables, β and γ are $k \times 1$ matrices of parameters, α_i is the unobserved time-variant individual effect, and ε_{it} is the error term. Subscripts *i* and *t* represent bank and year, successively.

4.3.3 Independent and control variables specifications

4.3.3.1 Independent variables

Based on the summary of the literature presented in Appendix I, and in order to test the proposed hypotheses, the four following categories of governance-explanatory variables will be adopted:

a. Ownership structure variables: this category contains two variables: (i) the type of ownership (government/private), and (ii) ownership concentration (the percentage of ownership of the top 3 shareholders).

b. Board characteristics variables: this category contains four variables: (i) board size, (ii) Chairperson/CEO role duality, (iii) the percentage of independent board members, and (vi) the percentage of women in the board.
c. Board committees' variables: this category contains four variables. (i) Audit Committee, (ii) Risk Committee, and (iii) Nomination and Remuneration Committee.
d. External governance variable: in additional to the above ten "internal" governance indicators, one "external" governance variable is added, namely bank's equity-to-asset ratio.

In fact, the adoption of these four categories of corporate governance variables can reveal the impact of several dimensions/perspectives of the implemented corporate governance frameworks in the MENA banks on their risk and stability. Regarding the first category of variables (ownership), and as the MENA banking sectors are characterised with considerable state ownership and high levels of ownership concentrations (blockholdings), we exploit variables representing these two variables in order to capture the existence of any potential conflict of interest, and if exists, how it affects MENA banks risk and stability. Regarding the second category of variables (board structure), and as the MENA banks are mostly run by large boards of directors, many of them adopt (Chairman-CEO) role duality, their independent board members play mostly non-active role, and have low ratios of women on the board, we aim at testing if and how these "weaknesses" may put pressures on banks risk and stability. As for the third category of variables (board committees), and as regulations enforce the division of board duties and responsibilities among several committees in order to maximise board oversight ability and control efficiency, we aim to test whether these committees do result in a better guidance of the boards, resulting eventually in lower risk and higher stability. Finally, as banks use their solvency and capitalisation ratios as – confidence – signals to stakeholders and markets, capitalisation ratio will be used as an "external" corporate governance variable in order to test its disciplinary impact on MENA banks risk and stability.

4.3.3.2 Control variables

Finally, to complete the models, the following control variables are considered, which are mainly extracted from (Bhagat, Bolton, & Lu, 2015), (Chen & Lin, 2016), (Grassa, 2016),

(Bokpin, 2016), (Vasilakopoulos, Tzovas, & Ballas, 2018), (Haque, 2019) and (Gaganis, Lozano-Vivas, Papadimitri, & Pasiouras, 2020). To control for the impact of bank size on efficiency, the natural log of bank total assets is exploited. The impact of bank age is controlled by adding the natural log of years since inception. To detect the impact of bank market power (i.e. pricing power), bank net interest margin is adopted. To test the effect of bank managerial efficiency, the cost-to-income ratio is used. The effect of market structure on bank stability is tested by using the banking sector's concentration ratio. Finally, to control for the impact of macroeconomic developments, the real GDP growth rate is exploited.

Table 4.2: Explanation of the exploited variables

Variable	Explanation
Dependent variables	
Loan-loss-provisions (LLP)	Loan-loss-provisions divided by gross loans
Log Z-Score (LOG_ZSCORE)	Natural log of $\frac{ROA + E/A}{\sigma ROA}$
Log modified Z-Score (LOG_MOD_ZSCORE)	Natural log of $\frac{RORWA + \text{CAPITAL ADEQUACY RATIO} - \text{TRESHOLD}}{\sigma RORWA}$
Independent variables: internal governance variables	
Ownership type (OWN_TYPE)	Dummy variable: 1 for majority government ownership, 0 otherwise
Ownership concentration (OWN_CONC)	The % of ownership of the top 3 shareholders
Board size (BOARD_SIZE)	Number of board members
Duality (DUAL)	Dummy variable: 1 if the chairman is at the same time the CEO/GM, 0 otherwise
Independent members (INDEP_MEM)	The % of independent board members
Board diversity (DIVERS)	The % of women board members
Audit committee (AUD_COMM)	Dummy variable: 1 for the existence of audit committee within the board, 0 otherwise
Risk committee (RISK_COMM)	Dummy variable: 1 for the existence of risk committee within the board, 0 otherwise
Nomination and remuneration committee (NOM_REM_COMM)	Dummy variable: 1 for the existence of nomination and remuneration committee within the board, 0 otherwise
Independent variables: external governance variable	
Bank capital (CAPITAL)	Equity-to-asset ratio

Control variables	
Size (SIZE)	Natural log of bank assets
Bank age (AGE)	Natural log of bank age
Net interest margin (NIM)	(Interest received – interest paid) divided by average assets
Cost to income ratio (CI)	Total cost divided by total revenue
Market concentration (CONC)	The top 5 banks' assets as percentage of total sector's assets
GDP growth rate (GDPG)	Real growth rate of gross domestic product

Based on the above, the following equations linking the dependent, independent, and control variables are proposed:

$$LLP_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} NIM_{it} + \beta_{14} CI + \beta_{15} CONC5_{it} + \beta_{15} GDPG_{it} + \varepsilon_{it}$$

$$LOG\_ZSCORE_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} NIM_{it} + \beta_{14} CI + \beta_{15} CONC5_{it} + \beta_{15} GDPG_{it} + \varepsilon_{it}$$

$$LOG\_MOD\_ZSCORE_{it} = \beta_0 + \beta_1 OWN\_TYPE_{it} + \beta_2 OWN\_CONC_{it} + \beta_3 BOARD\_SIZE_{it} + \beta_4 DUAL_{it} + \beta_5 INDEP\_MEM_{it} + \beta_6 DIVERS_{it} + \beta_7 AUD\_COMM_{it} + \beta_8 RISK\_COMM_{it} + \beta_9 NOM\_REM\_COMM_{it} + \beta_{10} CAPITAL_{it} + \beta_{11} SIZE_{it} + \beta_{12} AGE_{it} + \beta_{13} NIM_{it} + \beta_{14} CI + \beta_{15} CONC5_{it} + \beta_{15} GDPG_{it} + \varepsilon_{it}$$

4.4 Data and summary statistics

The empirical estimations in this chapter initially exploit a dataset formed of the largest 100 banks (which contains 77 conventional and 23 Islamic) operating in the following set of MENA countries: Algeria, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Tunisia, and the United Arab Emirates (UAE). Nonetheless, the computation of bank Z-scores and modified Z-scores results in a loss of observations (2

observations per each bank) due to the calculation of standard deviation of *ROA* and *RORWA*. The size of conventional banks' dataset remains sufficient, but that of Islamic banks became small. Thus, six Islamic banks are added, which directly follow in terms of assets, making the sample of Islamic banks equal to 29. The covered period is again 2011-2018 (i.e. 8 years).

Regarding the sources of data, note that the corporate governance data have been collected from bank annual reports and websites. On the other hand, bank assets, liabilities and financial ratios have been extracted from BankFocus database. Finally, GDP growth rates and banking sector's concentration ratios have been extracted from the World Bank database.

As a preliminary analysis of the results, Table 4.2 presents some summary statistics of the variables and Table 4.5 includes the variables correlation matrix, both for the entire sample of banks. On the other hand, Table 4.3 presents some summary statistics for conventional banks only and Table 4.4 presents some summary statistics for Islamic banks only.

Table 4.3: Variables descriptive statistics – all banks

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
LLP	4.692	4.015	32.000	0.070	3.393	764
LOG_ZSCORE	4.573	4.578	8.525	1.099	1.094	585
LOG_MOD_ZSCORE	3.973	3.988	9.034	-0.325	1.216	537
OWN_CONC	61.566	59.370	100.00	8.580	26.692	811
BOARD_SIZE	9.448	9.000	14.000	4.000	1.674	848
INDEP_MEM	0.526	0.500	1.000	0.000	0.259	818
DIVERS	0.039	0.000	0.333	0.000	0.065	848
OWN_TYPE			1	0		848
DUAL			1	0		848
AUDIT_COMM			1	0		848
RISK_COMM			1	0		848
NOM_REM_COMM			1	0		848
CAPITAL	13.153	12.324	99.270	3.909	7.355	802
SIZE	16.464	16.452	19.283	12.466	1.037	802
AGE	3.466	3.664	4.787	0.000	0.756	844
NIM	2.973	2.810	10.670	-0.220	1.262	799
CI	45.213	41.885	533.290	9.050	27.145	800
CONC5	70.266	66.680	100.000	53.460	10.433	848
GDPG	3.270	2.916	123.140	-62.076	8.844	848

From Table 4.2, the average LLP for the sample of banks under study is 4.692%, which shows that banks have on average a low credit risk. While the highest LLP is 32.0%, the lowest is

0.070%. The average LOG_ZSCORE is 4.573 (reflecting a Z-score of 96.834), with a maximum of 8.525 and a minimum of 1.099, with a low dispersion as it records a standard deviation of 1.094. LOG_MOD_ZSCORE averages 3.973 (reflecting a modified Z-score of 53.144) and slightly more dispersed than LOG_ZSCORE as it records a standard deviation of 1.216.

As for the governance variables, the average ownership concentration is 61.566% and ranges from a maximum of 100% to a minimum of 8.580%, with a large dispersion shown by the standard deviation (26.692%). The average board size in our sample is 9.448 members, and ranges between and maximum of 14 members and a minimum of 4 members, showing the wide differences in the size of MENA banks board of directors.

The percentage of independent board members in the sample under study averages 52.6% of total board members, with a maximum of 100% to a minimum of 0% showing again the large difference among banks included in the sample in terms of independence. The average proportion of women board members in our sample is 3.9% and ranges from a maximum of 33.3% to a minimum of 0%, which provides evidence about the limited number of women board members in the MENA banks. As for the other five binary governance variables (DUAL, OWN_TYPE, AUD_COMM, RISK_COMM, and NOM_REM_COMM), I do not report summary statistics for them.

The external governance variable (CAPITAL) shows that capitalisation of banks ranges between a maximum of 99.270% and a minimum of 3.909%, with an average of 13.153%, highlighting the considerable difference in the capitalisation of MENA banks.

As for the control variables, the average assets of banks is $14.13 billion, with a maximum of $236.87 billion and a minimum of $259.34 million. The average bank age is 32.01 years with a maximum of 120 years and a minimum of one year. The net interest margin of the banks under study is considerably dispersed (ranging between -0.220% and +10.670%) signalling the difference in market power and in profitability. Similarly, the efficiency of MENA banks in our sample ranges from a maximum of 533.290% to a minimum of 9.050%, which reveals a wide distribution of cost control ability. The concentration of the MENA banking sectors under study has an average of 70.266%, suggesting that – in general – these markets are highly concentrated. Finally, the average economic growth in the included countries over the entire study period is 3.270%.

On the other hand, the figures reported in Table 4.5 present a preliminary idea about the associations between bank risk and stability measures on one hand, and the set of corporate governance and control variables on the other hand. Regarding credit risk (LLP), it has a positive correlation with ownership concentration, and negative correlations with the existence of audit and nomination and remuneration committees, which are in line with the expectations listed above. In contrast, LLP recorded a positive correlation with state ownership, board size, the percentage of independent board members, the percentage of women board members, and the existence of a risk committee, in addition to a negative correlation with role duality, which all contradict the expectations. As for stability measures, the results in Table 4.5 show that Z-score and modified Z-score are positively correlated with board size, and the existence of risk and nomination and remuneration committees, in addition to a negative correlation with ownership concentration, which all consist with the initial expectations. In contrast, the stability measures are positively correlated with role duality, and negative with state ownership, the percentage of independent directors, the percentage of women board members, and the existence of audit committee, and all these are not consistent with the expectations.

Table 4.4: Variables descriptive statistics – conventional banks

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
LLP	4.387	4.010	17.740	0.560	2.463	555
LOG_ZSCORE	4.681	4.723	8.525	1.099	1.062	431
LOG_MOD_ZSCORE	4.065	4.051	9.034	-0.325	1.214	388
OWN_CONC	65.008	61.330	100.000	8.580	25.985	595
BOARD_SIZE	9.539	9.000	14.000	5.000	1.603	616
INDEP_MEM	0.526	0.444	1.000	0.100	0.271	604
DIVERS	0.045	0.000	0.333	0.000	0.069	616
OWN_TYPE			1	0		616
DUAL			1	0		616
AUDIT_COMM			1	0		616
RISK_COMM			1	0		616
NOM_REM_COMM			1	0		616
CAPITAL	12.118	12.032	25.559	3.909	3.823	589
SIZE	16.608	16.582	19.283	14.319	0.963	589
AGE	3.689	3.738	4.787	1.386	0.553	616
NIM	2.941	2.790	10.340	-0.010	1.131	587
CI	41.411	39.620	93.777	9.050	11.353	587
CONC5	70.056	66.280	100.000	53.460	11.243	616

GDPG	3.185	2.736	123.140	-62.076	10.241	616

Table 4.5: Variables descriptive statistics – Islamic banks

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
LLP	5.504	4.120	32.000	0.070	5.015	209
LOG_ZSCORE	4.273	4.313	6.982	1.209	1.129	154
LOG_MOD_ZSCORE	3.735	3.790	7.105	0.169	1.191	149
OWN_CONC	52.085	41.917	100.000	11.420	26.375	216
BOARD_SIZE	9.203	9.000	13.000	4.000	1.835	232
INDEP_MEM	0.524	0.556	1.000	0.000	0.222	214
DIVERS	0.026	0.000	0.200	0.000	0.049	232
OWN_TYPE			1	0		232
DUAL			1	0		232
AUDIT_COMM			1	0		232
RISK_COMM			1	0		232
NOM_REM_COMM			1	0		232
CAPITAL	16.014	13.040	99.270	4.640	12.356	213
SIZE	16.065	16.171	18.394	12.466	1.128	213
AGE	2.866	3.277	3.850	0.000	0.892	232
NIM	3.063	2.845	10.670	-0.220	1.569	212
CI	55.691	47.150	533.290	17.400	47.650	213
CONC5	70.825	68.355	84.860	58.580	7.885	232
GDPG	3.497	3.465	13.375	-3.482	2.739	232

Table 4.6: Variables correlation matrix

	LLP	LOG_ ZSCORE	LOG_ MOD_ ZSCORE	OWN_ TYPE	OWN_ CONC	BOARD_ SIZE	DUAL	INDEP_ MEM	DIVERS	AUDIT_ COMM	RISK_ COMM	NOM_ REM_ COMM	CAPITAL	SIZE	AGE	NIM	CI	CONC5	GDPG
LLP	1																		
LOG_ ZSCORE	-0.149	1																	
LOG_ MOD_ ZSCORE	-0.151	0.826	1																
OWN_ TYPE	0.096	-0.070	-0.093	1															
OWN_ CONC	0.136	-0.019	-0.020	0.276	1														
BOARD_ SIZE	0.153	0.151	0.131	-0.289	-0.064	1													
DUAL	-0.037	0.114	0.047	-0.141	0.129	0.079	1												
INDEP_ MEM	0.115	-0.192	-0.156	0.177	0.131	-0.054	-0.071	1											
DIVERS	0.202	-0.128	-0.136	0.021	0.345	0.063	0.236	0.124	1										
AUDIT_ COMM	-0.030	-0.022	-0.025	-0.053	-0.005	0.037	0.105	-0.180	0.062	1									
RISK_ COMM	0.060	0.021	0.023	-0.079	0.024	0.161	0.140	-0.194	0.109	0.288	1								
NOM_ REM_ COMM	-0.054	0.074	0.105	-0.031	-0.079	0.097	0.025	-0.057	-0.099	0.210	0.042	1							
CAPITAL	-0.177	-0.049	-0.005	0.088	-0.378	-0.180	-0.421	0.001	-0.321	-0.026	-0.104	-0.003	1						
SIZE	-0.170	0.159	0.183	0.239	-0.128	-0.026	0.040	-0.053	-0.123	0.038	-0.009	0.177	-0.089	1					
AGE	0.191	0.178	0.144	-0.142	0.238	0.281	0.281	-0.139	0.176	0.056	0.085	-0.007	-0.410	0.260	1				
NIM	0.173	-0.221	-0.226	0.055	-0.046	-0.057	-0.069	0.086	0.073	0.077	0.069	-0.028	0.117	-0.171	-0.039	1			
CI	0.054	-0.120	-0.068	-0.097	0.102	-0.024	0.053	0.077	0.071	0.064	0.069	-0.071	0.047	-0.405	-0.217	0.131	1		
CONC5	-0.134	-0.071	-0.033	-0.058	-0.120	-0.162	-0.120	-0.194	-0.141	0.046	0.079	0.055	0.203	0.034	-0.227	-0.002	-0.082	1	
GDPG	-0.026	-0.155	-0.207	0.162	0.097	-0.078	-0.081	0.129	0.088	-0.125	-0.186	-0.129	0.089	-0.104	-0.186	0.140	-0.049	0.003	1

4.5 Empirical results

This chapter follows the procedures adopted in Chapters Two and Three and divides the sample under study into conventional and Islamic banks. The next section detects the impact of the adopted independent and control variables on conventional banks risk and stability, and then the following section focuses on Islamic banks.

4.5.1 Estimations for conventional banks

Table 4.6 includes the regression estimated parameters with their corresponding t-Statistics. The table presents the results of the impact of corporate governance on three measures of risk and stability of MENA conventional banks. Column 2 presents the parameters describing the influence on LLP, Column 4 on LOG_ZSCORE, and finally Column 6 on LOG_MOD_ZSCORE.

All the estimated models are performed using the Fixed Effects panel data models. The Fixed Effect specification is chosen based on the Hausman test, which rejected the null hypothesis of randomness in the effect as can be seen from the Chi-squared Statistics in the last three rows of Table 4.6. The F-statistics show that all models are appropriate, as the null of poor specification has been rejected at the 1% significance level. The Durbin-Watson statistics suggest the lack of autocorrelation among the models' errors. Finally, the explanatory variables included explain 69.8% of the variation in the LLP of banks, 55.4% of LOG_ZSCORE, and 59.3% of LOG_MOD_ZSCORE. Hence, these specifications are adequate and appropriate in assessing the influence of corporate governance on conventional bank risk and stability.

Now after assessing the conventional bank models overall, the effect of individual explanatory and control variables on the risk and stability measures is analysed.

Table 4.7: The impact of corporate governance variables on conventional banks' risk and stability

	LLP		LOG_ZSCORE		LOG_MOD_ZSCORE	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
OWN_TYPE	-1.086**	-0.690	0.304	0.315	2.291**	2.132
OWN_CONC	-0.037	-2.339	-0.025**	-2.584	-0.031***	-2.766
BOARD_SIZE	-0.137	-1.139	0.200**	2.308	0.167*	1.664
DUAL	-0.236	-0.356	-0.312	-0.682	-0.936	-1.465
INDEP_MEM	1.204	1.426	0.017	0.030	-0.569	-0.878
DIVERS	2.796	1.083	-1.837	-1.186	-0.627	-0.336
AUD_COMM	-0.386	-1.167	-1.133**	-2.408	-0.747	-1.433
RISK_COMM	-0.312	-0.867	0.232	0.744	-0.184	-0.544
NOM_REM_COMM	-1.116***	3.091	0.472*	1.890	0.456*	1.678
CAPITAL	-0.134**	-2.265	0.024	0.558	0.059	1.185
SIZE	-2.103***	-3.721	-0.628	-1.495	0.647	1.268
AGE	4.182***	3.676	0.790	0.868	-0.388	-0.357
NIM	0.147	0.856	-0.156	-1.405	0.137	1.065
CI	0.058***	4.016	-0.023**	-2.246	-0.023*	-1.902
CONC5	-0.001	-0.043	-0.085***	-4.028	-0.033	-1.340
GDPG	0.004	0.126	0.013	0.541	-0.029	-0.729
C	25.748***	2.793	19.409***	3.007	-2.287	-0.285
R-squared	0.698		0.554		0.593	
F-statistic	11.377		4.482		5.140	
Prob(F-statistic)	0.000		0.000		0.000	
DW statistic	1.778		2.007		2.019	
Number of banks	77		77		77	
Number of obs.	523		420		377	
Hausman test						
Chi-Sq. Statistic	27.000		36.770		31.305	
Prob.	0.0415		0.002		0.012	
Model	FE		FE		FE	

Notes:

For a sample of 77 conventional MENA banks, I estimate the impact of corporate governance on bank risk and stability using panel data econometrics, over the period 2011-2018. Bank risk and stability are proxied by three variables: loan-loss provisions (LLP), natural log of Z-score (LOG_ZSCORE), and natural log of modified Z-score (LOG_MOD_ZSCORE). Corporate governance variables are: the type of ownership (OWN_TYPE), ownership concentration (OWN_CONC), board size (BOARD_SIZE), role duality (DUAL), the percentage of independent board members (INDEP_MEM), the percentage of women board members (DIVERS), the existence of an Audit Committee (AUD_COMM), the existence of a Risk Committee (RISK_COMM), and the existence of a Nomination and Remuneration Committee (NOM_REM_COMM). Bank equity-to-asset ratio is added as an "external" governance variable. As control variables, I add the natural log of bank total assets (SIZE), the natural log of years since bank establishment (AGE), bank net interest margin (NIM), cost-to-income ratio (CI), the banking sector concentration ratio (CONC), and the real GDP growth rate (GDPG).
*** Significantly different from zero at the 1% level.
** Significantly different from zero at the 5% level.
* Significantly different from zero at the 10% level.

First, state ownership has substantial influence on MENA conventional banks' risk and stability, as the parameter associated with OWN_TYPE has negative effect on LLP and positive effect on LOG_MOD_ZSCORE, both significant at the 5% level. These results provide support to hypothesis H1, which hypothesised the existence of a constructive impact of state ownership on MENA banks stability. Consequently, it is concluded that government-owned MENA banks are more conservative than their privately-owned peers. In fact, the average LLP of the sample of conventional public banks was 5.37% in 2018, versus 10.58% for private banks. Additionally, these empirical findings contradict (Berger A. , Clarke, Cull, Klapper, & Udell, 2005) and (Ben Moussa, 2019) who find that state ownership in banks results in higher credit risk for Argentinian banks and Tunisian banks respectively.

Second, in line with hypothesis H2, the existence of blockholding that results in higher ownership concentration depresses the stability of MENA conventional banks, which is shown by the significant negative effect of OWN_CONC on LOG_ZSCORE (at 5% level) and LOG_MOD_ZSCORE (at 1% level). An inverse association between conventional banks' ownership concentration and both LOG_ZSCORE and LOG_MOD_ZSCORE is observed, where the conventional banks with the highest blockholdings and narrowest ownership base – whether with public or private majority ownership (e.g. Fransabank, Bank MED, SGBL Bank and Lebanon and Gulf Bank from Lebanon; National Bank, Arab International Bank and Banque du Caire from Egypt; Gulf International Bank from Bahrain; Al Masraf Bank and Commercial Bank International from UAE; International Bank of Qatar; Housing Bank of Trade and Finance of Jordan) recorded the lowest stability measures in 2018. This result, consistent with the findings of (Laeven & Levine, 2009) who studied a sample of 48 countries, and in line with the moral hazard hypothesis, revealing that large shareholders persuade bank management to take on high-risk strategies and investments in order to realise high returns, while taking advantage of the government safety net.

The results related to board size show that larger boards are associated with higher bank stability, as the variables BOARD_SIZE recorded a positive and significant impact on LOG_ZSCORE (at 5% level) and LOG_MOD_ZSCORE (at 10% level), despite the negative association with LLP that is statistically insignificant. Hence, the obtained results concerning the impact of board of directors is consistent with hypothesis H3 and with the findings of (Bokpin, 2016) on Ghana banks and (Rachdi, Trabelsi, & Trade, 2013) on Tunisian banks who

also found a constructive effect of larger boards on bank stability. Consequently, adding more board members may transform the decision-making in the MENA conventional banks into more conservative one. Note that the exploited dataset does reveal that banks with the largest boards recorded the highest LOG_ZSCORES and LOG_MOD_ZSCORES, where among the top 10 banks in terms of LOG_SCORES, 8 have boards of 10 or more members, and among the top 25 banks in terms of LOG_MOD_ZSCORES, 16 have boards of 10 or more members. The combination of CEO and chairperson roles is found to be irrelevant for risk and stability measures of MENA conventional banks, since DUAL recorded statistically insignificant impact in all presented model in Table 4.6. This result does not provide support to hypothesis H4, which initially hypothesised the existence of a destructive influence of duality on bank risk standing and stability. Nonetheless, similar finding was recorded by (Grove, Patelli, Victoravich, & Xu, 2011) on U.S. banks and (Chen & Lin, 2016) on a sample of 43 countries. Similarly, these results reveal that the percentage of independent board directors (or outside directors) does not add value to conventional MENA banks stability and risk control, as INDEP_MEM does not capture any significant effect on the dependent variables. Accordingly, H5 can be rejected, which suggests that independent board members in MENA banks may participate in monitoring board and top management activities, maybe because these directors are appointed to meet regulatory requirements without consideration for their qualifications and experiences. Similar finding was shown by (Liang, Xu, & Jiraporn, 2013) on Chinese banks and (Ben Moussa, 2019) and (Rachdi, Trabelsi, & Trade, 2013) on Tunisian banks.

MENA conventional banks' board gender diversity is not a major determinant of risk and stability, as DIVERS captures an insignificant influence on all measures. Consequently, no support is found for hypothesis H6, which suggested that a higher percentage of women board members is associated with better risk control. This finding has also been revealed by (Harkin, Mare, & Crook, 2020) on UK banks and (Dedu & Chitan, 2013) on Romanian banks.

As for board committees, the existence of audit committee has no impact on MENA conventional bank credit risk, while it is negatively associated with LOG_ZSCORE, which contradicts H7 that hypothesised a constructive influence of such committee on bank risk standing and stability. A similar result is found for the existence of risk committee, which again does not add support to H7. In contrast, the existence of a nomination and remuneration committee is indeed in line with hypothesis H7: a significant negative effect on LLP (at the

1% level) and significant positive on LOG_ZSCORE and LOG_MOD_ZSCORE (both at the 10% level). Therefore, the existence of a nomination and remuneration committee plays a role in mitigating MENA conventional bank risks, maybe through having influence on staff appointments and linking the compensation of top management to bank risk level.

The external corporate governance factor (capitalisation) is inversely related to LLP and significant at the 5% level. This suggests that an increase in capital requirements, forces banks to lower their risk-weighted assets by lowering the riskiness of their lending, which results in setting less provisions for loan losses. Nevertheless, no significant effect of higher capitalisation on bank stability is observed, maybe because it is offset by higher volatility of returns (ROA).

Now turning to the control variables, the following is detected. Larger MENA conventional banks seem to record significantly lower provisions for loan losses (as SIZE captures a significant impact on LLP), maybe due to their higher diversification abilities. However, this is not translated into higher stability where SIZE does not record any significant impact on both LOG_ZSCORE and LOG_MOD_ZSCORE. This could be due to the fact an increase in size is not accompanied with the same increase in profits, thus lower return on assets (ROA).

The age of conventional banks operating in the MENA region does not add value to their risk profile or stability, as it is significantly (positively) associated with LLP only. The positive association between AGE and LLP may suggest that newly established conventional banks are more conservative, and they tend to increase their riskiness with time.

The lack of significant influence of net interest margin on risk and stability indicators reveals that higher market power does not necessarily result in a deterioration in risk and stability of MENA conventional banks, where regulation and supervision play an important role in preventing banks from taking excessive risks.

A very interesting finding is recorded by CI: a higher cost-to-income ratio (i.e. lower cost efficiency) is associated with substantial higher credit risk and lower stability. Hence, inefficient conventional MENA banks are also those with inability to control their risks.

Market concentration shows to harm bank stability, as CONC5 recorded a negative and significant (at the 1% level) on LOG_ZSCORE. Therefore, the existence of few banks and higher concentration may persuade banks to take excessive risks, which may deteriorate their stability.

Finally, the empirical results in Table 4.6 reveal that better (worse) economic growth results in lower (higher) credit risk and higher (lower) stability.

4.5.2 Estimations for Islamic banks

This section tests the impact of the adopted corporate governance variables and the additional control variables on MENA Islamic banks' risk and stability, and the results are presented in Table 4.7.

The estimated models for Islamic banks' LLP are performed using Fixed Effects panel data models. The Fixed Effect specification is chosen based on the Hausman test, which rejected the null hypothesis of randomness in the effect as can be seen from the Chi-squared Statistics in the last three rows of Table 4.7. Conversely, the models for LOG_ZSCORE and LOG_MOG_ZSCORE are performed with Random Effect panel data model since the probability of Chi-squared Statistics for these models are more than the conventional 5% level, and hence the null hypothesis of random effect cannot be rejected. The F-statistics show that all models are appropriate, as the null hypothesis of poor specification has been rejected at the 1% significance level for LLP and at the 5% level for LOG_ZSCORE and LOG_MOD_ZSCORE. The Durbin-Watson statistics suggest the lack of autocorrelation among the models' errors. Finally, the explanatory variables included explain 87.8% of the variation in LLP of the studied sample of Islamic banks, 19.1% of LOG_ZSCORE, and 20.7% of LOG_MOD_ZSCORE. Hence, these specifications are adequate and appropriate in assessing the influence of corporate governance on Islamic bank risk and stability.

After assessing the Islamic bank models overall, the effect of individual independent and control variables on the risk and stability measures will be analysed.

Table 4.8: The impact of corporate governance variables on Islamic banks' risk and stability

	LLP		LOG_ZSCORE		LOG_MOD_ZSCORE	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
OWN_TYPE	2.124*	1.682	-0.459	-1.004	-0.605	-1.229
OWN_CONC	0.037	1.172	0.001	0.099	0.005	0.700
BOARD_SIZE	0.118	0.318	0.017	0.170	0.015	0.140
DUAL	0.518	0.503	0.699*	1.832	0.261	0.537
INDEP_MEM	1.755	1.150	0.428	0.661	0.376	0.553
DIVERS	-4.750	-0.895	-2.623	-1.148	-4.447*	-1.880
AUD_COMM	0.215	0.238	-0.008	-0.017	-0.226	-0.442
RISK_COMM	2.317***	3.503	-0.440	-1.096	-0.517	-1.243
NOM_REM_COMM	4.967***	2.897	-1.428*	-1.872	-1.660**	-2.027
CAPITAL	-0.074	-1.382	0.007	0.279	0.014	0.493
SIZE	-4.381***	-3.251	0.628***	2.885	0.644***	2.778
AGE	2.468*	1.734	0.276	0.997	0.339	1.151
NIM	-1.782***	-7.936	-0.119	-1.522	-0.139*	-1.666
CI	-0.019*	-1.817	0.014	1.557	0.013	1.361
CONC5	-0.031	-0.503	0.011	0.498	0.022	0.961
GDPG	-0.077	-0.925	0.003	0.087	-0.009	-0.224
C	68.647***	3.065	-6.396	-1.366	-7.624	-1.540
R-squared	0.878		0.191		0.207	
F-statistic	24.806		1.950		2.067	
Prob(F-statistic)	0.000		0.021		0.013	
DW statistic	1.720		1.958		1.997	
Number of banks	29		29		29	
Number of obs.	192		149		144	
Hausman test						
Chi-Sq. Statistic	74.972		18.078		21.065	
Prob.	0.000		0.203		0.100	
Model	FE		RE		RE	

Notes:

For a sample of 29 Islamic MENA banks, I estimate the impact of corporate governance on bank risk and stability using panel data econometrics, over the period 2011-2018. Bank risk and stability are proxied by three variables: loan-loss provisions (LLP), natural log of Z-score (LOG_ZSCORE), and natural log of modified Z-score (LOG_MOD_ZSCORE). Corporate governance variables are: the type of ownership (OWN_TYPE), ownership concentration (OWN_CONC), board size (BOARD_SIZE), role duality (DUAL), the percentage of independent board members (INDEP_MEM), the percentage of women board members (DIVERS), the existence of an Audit Committee (AUD_COMM), the existence of a Risk Committee (RISK_COMM), and the existence of a Nomination and Remuneration Committee (NOM_REM_COMM). Bank equity-to-asset ratio is added as an "external" governance variable. As control variables, I add the natural log of bank total assets (SIZE), the natural log of years since bank establishment (AGE), bank net interest margin (NIM), cost-to-income ratio (CI), the banking sector concentration ratio (CONC), and the real GDP growth rate (GDPG).
*** Significantly different from zero at the 1% level.
** Significantly different from zero at the 5% level.
* Significantly different from zero at the 10% level.

In contrast with the findings of conventional banks, Islamic state-owned banks record higher credit risk than private ones, which is shown by the positive association between OWN_TYPE and LPP (significant at the 10% level). In parallel, no significant influence in terms of stability is observed. This leads to rejecting hypothesis H1 for the case of Islamic banks, as state ownership does not show to improve their stability or risk profile. Another possible explanation is that state-owned banks are more conservative and thus tend to hold higher provisions.

In a similar vein, the lack of influence of ownership concentration on all dependent variables leads also to rejecting hypothesis H2 that proposes a damaging impact of blockholding on Islamic banks risk level and stability and may provide evidence that large shareholding in MENA Islamic banks may represent a "positive" controlling mechanism that enforce better decision making. Another possible explanation is that the existence of two boards (versus one board for conventional banks) may represent an offsetting power against large shareholders' power.

The size of MENA Islamic banks' boards is no associated with better risk profile or higher stability, as hypothesised by H3. Note that this result matches that of (Ben Zeineb & Mensi, 2018) on GCC Islamic banks, but contradicts that of (Lassoued, 2018) on Malaysian banks and (Almutairi & Quttainah, 2020) on a sample of 15 emerging market countries. This finding may conclude that larger board of directors at these banks results in conflicts or delays in the decision making process and thus, does not improve their stability.

Role duality recorded a positive effect on the three exploited risk and stability measures, but significant only for LOG_SCORE (at the 10%). This could be supported– for instance – by the fact that the top 3 Islamic banks in terms of LOG_ZCSORE in 2018 (Barwa bank of Qatar, Qatar International Islamic Bank, and Kuwait International Bank) adopted a role duality. In addition to leading to reject hypothesis H4, this result may provide some evidence that the existence of the Sharia Supervisory Board participates in mitigating the controlling power of the chairman-CEO as the Sharia board has to approve all new products and services.

The proportion of independent board members has a statistically insignificant impact for all presented risk and stability measures. Similarly to the case of conventional banks, this leads to rejecting Hypothesis H5, by providing evidence that higher percentage of independent directors does not result in lower risk or higher stability for MENA Islamic banks, contradicting the findings of (Almutairi & Quttainah, 2020). Therefore, this result may prove

that filling the required positions of independent directors is not based on knowledge and expertise, but to meet regulatory and governance requirements.[30]

The insignificant impact of DIVERS on credit risk measure and the negative impact on LOG_MOD_ZSCORE leads to rejecting hypothesis H6. This could be due to the fact that the proportion of women board members in Islamic banks is very low and ranges between 0 and 20.0% in 2018, with an average of 2.6% in the exploited sample of Islamic banks.

Regarding the three board committees, the following is observed. Firstly, the results show that the existence of audit committee is totally irrelevant. Secondly, the existence of risk committee is associated with higher provisions, revealing that such committee requires holding more provisions for loan losses. Thirdly, and surprisingly, the existence of a nomination and remuneration committee is associated with lower bank stability. Thus, overall, these results lead to rejecting hypothesis H7, which assumed a more constructive role of board committees at MENA Islamic banks.

Equity-to-asset ratio does not record any significant impact on bank credit risk and Z-score. Hence, this external corporate governance variable does not shape risk profile and stability of the Islamic banks under study, and unlike conventional banks, higher capital requirements do not push Islamic banks toward more risky balance sheet structures.

The results on the exploited control variables reveal the following. Larger MENA Islamic enjoy significantly lower credit risk, maybe due to their higher diversification abilities. Moreover, this better risk profile is accompanied with higher stability, as SIZE records a positive and significant effect (at the 1% level) on both LOG_ZSCORE and LOG_MOD_ZSCORE. Therefore, larger Islamic banks operating in the MENA region are considerably more stable than their smaller counterparts, due to better risk diversification abilities, better risk management functions, resulting in higher returns and/or lower volatility of returns.

Similarly to conventional banks, the age of Islamic MENA banks does not improve their risk standing or stability. Therefore, the positive association between AGE and LLP suggests that newly established Islamic banks are more conservative, and they tend to increase their riskiness with time.

[30] Note that the proportion of independent directors in the sample of Islamic banks ranged in 2018 between a minimum of 0% and a maximum of 100%.

NIM shows to have a negative association with LLP, which may suggest that banks with higher market power are more selective in lending, and that is translated into lower credit risk and less provision holdings. On the other hand, the negative and significant association between net interest margin and LOG_MOD_ZSCORE could be due to the fact that those banks hold less capital and/or record higher ROA volatility.

In contrast with conventional banks, a higher cost-to-income ratio (i.e. lower efficiency) is associated with lower provisions at Islamic banks. This may suggest that inefficient MENA Islamic banks have lower ability to hold provisions to cover their credit risk.

The results also show that market concentration is not a major determinant of MENA Islamic banks risk and stability, and higher market concentration does not persuade those banks to adopt riskier strategies. Finally, and matching the results found for conventional banks, better (worse) economic growth results in lower (higher) risk and higher (lower) stability.

4.5.3 Comparison of the results with the literature and the differences between conventional and Islamic banks

The estimations on the impact of corporate governance variables on bank risk and stability reveal several difference between conventional and Islamic banks. Table 4.8 presents these differences in addition to the initially expected impact of the adopted variables, which are listed in the second column of the table. The studies summarised in Section 4.2 suggest that a majority state ownership in banks, larger board size, higher proportions of independent directors and women board members, and the existence of audit, risk, and nomination and remuneration committees are all associated with lower credit risk. Conversely, higher ownership concentration and CEO-chairman duality are supposed to result in higher credit risk. On the other hand, the listed studies propose that a majority state ownership in banks, larger board size, higher proportions of independent directors and women board members, and the existence of audit, risk, and nomination and remuneration committees are all associated with higher stability. Finally, higher ownership concentration and CEO-chairman duality is assumed to result in the opposite.

Overall, the results obtained on the sample of largest 106 MENA banks are different from those reported by the literature in many aspects. First, state ownership in Islamic banks shows to be positively associated with LLP, which contradicts the findings of the literature. Second, the

impact of ownership concentration on conventional banks stability is not in line with the literature, and higher concentration depresses those banks' stability. Third, the results regarding the impact of duality show that a power concentration may improve Islamic bank stability. Fourth, the proportion of independent board members and the proportion of women board members in both conventional and Islamic banks is overall irrelevant for risk and stability. Fifth, as for board committees, the existence of nomination and remuneration committee at conventional banks is only consistent with the proposed expectations, while the other committees at both conventional and Islamic banks are not.

Regarding the differences between the results obtained for conventional and Islamic banks, a main difference is observed regarding the impact of state ownership, where it was found to have constructive influence on conventional MENA banks risk profile and stability, while ownership concentration harms them. Finally, conventional banks may benefit from the existence of nomination and remuneration committee, while it was shown to have a negative influence on Islamic banks risk and stability.

Table 4.9: Comparison of the results with the literature and the differences between conventional and Islamic banks

	Expected impact		Actual impact					
			Conventional banks			Islamic banks		
	Risk	Stability	LLP	LOG_ ZSCORE	LOG_ MOD_ ZSCORE	LLP	LOG_ ZSCORE	LOG_ MOD_ ZSCORE
OWN_TYPE	-	+	- (5%)	+	+ (5%)	+ (10%)	-	-
OWN_CONC	+	-	-	- (5%)	- (1%)	+	+	+
BOARD_SIZE	-	+	-	+ (5%)	+ (10%)	+	+	+
DUAL	+	-	-	-	-	+	+ (10%)	+
INDEP_MEM	-	+	+	+	-	+	+	+
DIVERS	-	+	+	-	-	-	-	- (10%)
AUD_COMM	-	+	-	- (5%)	-	+	-	-
RISK_COMM	-	+	-	+	-	+ (1%)	-	-
NOM_REM_COMM	-	+	- (1%)	+ (10%)	+ (10%)	+ (1%)	- (10%)	- (5%)
CAPITAL			- (5%)	+	+	-	+	+
SIZE			- (1%)	-	+	- (1%)	+ (1%)	+ (1%)
AGE			+ (1%)	+	-	+ (10%)	+	+
NIM			+	-	+	- (1%)	-	- (10%)
CI			+ (1%)	- (5%)	- (10%)	- (10%)	+	+
CONC			-	- (1%)	-	-	+	+
GDPG			+	+	-	-	+	-

Notes: significance level in parentheses.

4.6 Conclusion

This chapter studied the impact of nine corporate governance variables that are extracted from the literature on three valuation measures of the largest 106 traded MENA banks over the period 2011-2018. As the MENA region contains a large number of Islamic banks, and in order to better capture the different impact of the adopted explained variables on Islamic and conventional banks, the sample under study is split into two sub-samples: 77 conventional and 29 Islamic banks.

The empirical results of this chapter reveal that government-owned conventional banks have considerably lower credit risk and higher stability than privately-owned ones. On the other hand, ownership concentration (i.e. block-holding ownership) seems to be a major impairment of bank stability and a booster of risk, as it deteriorates significantly both Z-score and modified Z-score. This might suggest that large shareholders persuade bank management to adopt risky strategies in order to enjoy higher returns, while benefiting from the government safety net. Secondly, larger boards of directors are associated with higher stability, suggesting that larger boards may improve the risk-control decision making and result in more comprehensive discussions on the risk tolerance of the bank. Finally, the existence of nomination and remuneration committee plays a major role in mitigating bank risks.

For Islamic banks, it was found that state-owned banks might have higher credit risk than their private counterparts. Secondly, the presence of a risk committee in the board results in holding more provisions by the bank. On the other hand, all the other governance factors do not improve these banks' risk profile or stability.

General Conclusion

I. Summary of results

The first wave of corporate governance in the MENA region occurred in early 2000, which was triggered by several motives, such as attracting foreign investments and developing financial sectors in the region. Starting early 2000, adopting sound corporate governance practices became a priority for the regional regulators and the private sector as well. This first wave started with the issuance of corporate governance rules by the national regulators and coupled with the establishment of national corporate governance institutes. The early corporate governance initiatives adopted in the MENA region by Egypt and Oman motivated a regional trend, and encouraged the other regulatory authorities in the region that started adopting more advanced corporate governance standards.

The corporate governance requirements in MENA banks have developed considerably over the past two decades. While these requirements had initially addressed corporate and banking laws, regulators in the MENA region impose nowadays more governance requirements. Specifically, the scope of banking laws in the MENA had generally been limited to regulating the boards' composition and disclosure requirements, but the past twenty years witnessed imposing additional regulations by the MENA central banks concerning board committees, the number (or proportion) of non-executive and independent directors, and many other relevant issues.

Currently, and to cope with the fast growth of banking and finance in the MENA region, the regulatory authorities developed the corporate governance practices to be adopted by banks. Specifically, regulators focus on the following six major dimensions:

1. Board membership, including nomination, independence, qualifications, and conflicts of interest.
2. Executives' remuneration, including linking compensation to performance, and the mix of "fixed" and "variable" compensations.
3. The roles and responsibilities of shareholders, their participation in the general meetings and assemblies, voting rights, equitable treatment, and the responsibilities of institutional shareholders.
4. Board committees, including issues such as compensation, nomination, and internal audit.

5. The role of external audit, with focus on appointment, independence, and qualifications, in addition to possible sources of conflicts of interest.
6. Disclosures and transparency.

Disclosure and transparency have captured explicit focus by MENA regulators in establishing national corporate governance frameworks. The regulatory and supervisory authorities in the region have also actively incorporated corporate governance requirements in their prudential supervision approaches, where half of the central banks in the MENA region have set specialised corporate governance units responsible for the supervision of bank governance practices.

This thesis studied the impact of the adopted corporate governance frameworks and structures in the MENA banks on their overall performance and efficiency, value, and risk and stability. The MENA region banks represent an interesting case study due to several reasons:

1. A considerable number of MENA banks are state-owned.
2. A considerable number of MENA banks follow the Sharia law (in other words "Islamic banks"), specifically in the GCC countries and Sudan.
3. MENA banks are characterised with high ownership concentrations.
4. MENA banks board of directors still have low gender diversity and small proportion of female board members.
5. A considerable number of MENA banks adopt a CEO-chairman role duality.
6. The MENA banks are the main source of funding for governments, corporates, and small and medium enterprises due to the limited role played by capital markets.

Regarding the corporate governance structures, the thesis exploited nine variables that represent mainly two aspects: ownership structure and board composition. The three following categories of governance have been adopted:

a. Ownership structure variables: this category contains two variables: (i) the type of ownership (government/private), and (ii) ownership concentration (the percentage of ownership of the largest 3 shareholders).

b. Board characteristics variables: this category contains four variables: (i) board size, (ii) Chairperson/CEO role duality, (iii) the percentage of independent board members, and (vi) the percentage of women in the board.
c. Board committees' variables: this category contains four variables. (i) Audit Committee, (ii) Risk Committee, and (iii) Nomination and Remuneration Committee.

For the empirical analysis, the sample of banks under study was split in the econometric estimations into two sub-samples according to their type: conventional and Islamic. This practice allowed testing if the impact of the adopted corporate governance factors on performance and efficiency, value, and risk and stability, varies according to bank type.

In chapter two, the impact of the adopted corporate governance mechanisms and structures on the performance and efficiency of MENA banks has been empirically tested using Panel data econometrics on a sample formed of the largest 100 MENA banks (77 conventional and 23 Islamic), over the period 2011-2018. The empirical results showed that the exploited variables affect differently conventional and Islamic banks. The results for conventional banks showed that larger boards of directors and CEO-chairman duality harm performance, suggesting that smaller boards are indeed more efficient in decision-making and oversight, and that power concentration leads to conflicts of interest or maybe even an abuse of power. Conversely, board gender diversity and the presence of a nomination and remuneration committee add value to conventional bank performance and efficiency, suggesting that more women on board brings more balance and rationality to decision making, and that the presence of a board committee that oversights and monitors the selection, promotion, and rewarding processes of staff results in improving bank's human capital. On the other hand, the results for Islamic banks showed that state ownership is a booster of performance, while ownership concentration, board size, role duality, and higher proportion of independent directors are all impediments for efficiency and/or profitability. These results may reveal that state ownership provides cheap funding to Islamic banks, that larger ownership concentration results in conflict of interest and management decision-making bias, larger boards and power concentration worsens performance, higher percentage of independent board members may delay the decision making

process, and the presence of audit and risk committees is crucial for Islamic banks to guarantee their confinement with risk limits and tolerance.

In chapter three, the impact of the adopted corporate governance mechanisms and structures on the valuation of MENA banks has been empirically tested using Panel data econometrics on a sample formed of the largest 77 publicly traded MENA banks (52 conventional and 25 Islamic), over the period 2011-2018. The empirical results showed also that the exploited variables affect differently conventional and Islamic banks. For instance, the results for conventional banks showed that ownership concentration could be a major impediment of value suggesting that the market discounts shares of banks with dominant shareholders. Secondly, larger boards of directors are associated with lower stock performance, revealing that smaller boards are more efficient in decision-making and oversight. The positive and significant association between the proportion of independent directors and bank value reflects the benefit provided by these board members, while audit committee plays a major role in boosting conventional banks' market value. On the other hand, the results for Islamic banks showed that ownership concentration could be a major booster of bank market value and large shareholders may exercise constructive pressures on bank management. The results showed that smaller boards result in more efficient guidance and control and thus, high market value for banks. Finally, role duality showed to have a moderate positive impact on bank value, whereas none of board committees seems to add value to Islamic banks' market value.

In chapter four, the impact of the adopted corporate governance mechanisms and structures on the risk and stability of MENA banks has been empirically tested using Panel data econometrics on a sample formed of the largest 106 MENA banks (77 conventional and 29 Islamic), over the period 2011-2018. The empirical results showed again that the exploited variables affect differently conventional and Islamic banks. For instance, government-owned conventional banks have considerably lower credit risk and higher stability than privately-owned ones, while ownership concentration could be a major impairment of bank stability and a booster of risk. Larger MENA conventional bank boards of directors may be associated with higher stability, suggesting that the existence of more board members could improve risk-control. Finally, the existence of nomination and remuneration committee plays a major role

in mitigating bank risks. On the other hand, the results for Islamic banks revealed that state-owned banks might have higher credit risk than their private counterparts and that the presence of a risk committee results in holding more provisions by the bank.

Finally, the overall results regarding the impact of board of directors (specifically board size and board independence) in both conventional and Islamic banks could be in line with the Agency theory highlighted in the General Introduction of this thesis, which is based on the existence of a conflict of interest between shareholders and management.

II. Policy recommendations

Based on the obtained findings from the three empirical chapters of this thesis, it is possible to draw several policy recommendations regarding the optimal corporate governance frameworks/structures for the MENA banks as follows.

1. For conventional banks
    a. Government ownership represents a booster for bank stability. Therefore, it is useful to preserve state ownership in the MENA conventional banks.
    b. Ownership concentration harms bank value and stability. Therefore, MENA bank regulators should enforce restrictions on large blockholdings and encourage wider ownership bases for conventional banks.
    c. Overall, smaller boards are better for improving performance and valuation. Therefore, MENA conventional banks should tend to have smaller board of directors.
    d. The combination of chairperson and CEO roles could deteriorate bank performance and efficiency. Therefore, it is recommended to prevent such practice.
    e. Higher percentage of independent directors improves bank valuation. Therefore, a proportion of outsiders among board members should be encouraged, and a more active role of such directors must be achieved.
    f. Higher percentage of female board members improves bank performance. Therefore, a higher proportion of women among board members should be encouraged, and a more active role of such members should be achieved.

g. Generally, the existence of audit, risk, and nomination and remuneration committees result in better overall performance, and therefore, boards should include these committees.

2. For Islamic banks
    a. Government ownership represents a booster for bank performance. Therefore, it is useful to preserve state ownership in the MENA Islamic banks.
    b. Ownership concentration harms bank performance. Therefore, it is recommended to enforce restrictions on large blockholdings and encourage wider ownership bases for Islamic banks.
    c. Smaller boards are better for improving performance and valuation. Therefore, MENA Islamic banks should tend to have smaller board of directors.
    d. The combination of chairperson and CEO roles could deteriorate bank performance, but seems to boost both value and stability. Therefore, it could be recommended to keep such practice.[31]
    e. Higher percentage of independent directors deteriorates bank performance, suggesting that the existence of these directors represents a burden for banks without providing added value. Therefore, the selection and appointment of outside directors should be based on experience and knowledge, not just to meet regulatory requirements.
    f. Generally, the existence of audit, risk, and nomination and remuneration committees result in better overall performance.

The above recommendations could be useful for MENA bank stakeholders, particularly: governments (as major owners of banks), bank regulators and supervisors, and bank shareholders. Specifically, bank regulators and supervisors might issue new regulations or adjust the existing regulations to regulate the bank ownership and board structures that show to have a positive impact on banks. Similarly, banks shareholders – mainly governments – should adopt shareholding structures and limits that do not result in power abuse. Additionally, these shareholders should adopt in their banks the optimal board structures that take into

[31] As stated previously, an explanation for this finding is that the existence of the Sharia Supervisory Board may participate in mitigating the controlling power of the chairman-CEO.

consideration power distribution, the optimal balance between executive and non-executive directors, and gender diversity.

III. Research limitations

The thesis has three limitations, which should be taken into consideration when building on the empirical results and the policy recommendations. These limitations are the following.

Firstly, the study adopted relatively a short period of time (8 years). This is due to the fact that the BankFocus database (the source of data for this thesis) changed its reporting of bank financial statements according to the international financial reporting standard IFRS9 after the year 2011, while the previous years' financial statements are not. This makes the pre-2011 statements not comparable with the following ones. On the other hand, the last included year is 2018 because while finalising this thesis, even the 2019 financial statements for a considerable number of banks included in the study were still not available.

Secondly, the data set contained banks that continued operating all over the studied period. In other words, all the 106 banks have "survived" during the 2011-2018 period, and none of them exited the market for any reason (e.g. acquisition, liquidation, default, etc.). Therefore, the empirical results may suffer survivorship bias.

Thirdly, while the adopted regression models in chapters two, three, and four contain three sets of variables (corporate governance, bank-specific, and macroeconomic), other – relevant – variables have not been exploited. For instance, the review of literature presented in the three empirical chapters of this thesis shows that previous studies have exploited legal indicators (e.g. the origin of the country's legislation), banking regulatory indicators (e.g. restrictions on competition and activities), institutional quality indicators (e.g. regulatory quality index, gender equality index, economic freedom index, etc.), capital market indicators (e.g. the size of stock market relative to GDP), and wealth level (e.g. GDP per capita, income development index). The empirical results obtained by those studies show indeed that the impact of corporate governance variables interact with these indicators in determining bank efficiency, value and risk. More specifically, in some cases, and within the same studies, regression models that include the above listed indicators record different results (i.e. impact) from those omitting them, which can be considered as evidence on the interaction between corporate governance variables and these variables in shaping bank overall performance. Based on that,

it could be concluded that the omission of these variables from the presented regression models in this thesis may have resulted in *omitted variables bias*, while including them might have: (1) improved the robustness of the obtained results, and (2) show if/how the above listed variables interact to determine MENA conventional and Islamic banks efficiency, value, and risk.

Bibliography

AAOIFI. (2010). *Governance Standards.* Manama: Accounting and Auditing Organization for Islamic Financial Institutions.

Abdallah, A. A.-N., Hassan, M. K., & McClellanda, P. L. (2015). Islamic Financial Institutions, Corporate Governance, and Corporate Risk Disclosure in Gulf Cooperation Council Countries. *Journal of Multinational Financial Management, 31*, 63-82.

Abdel-Baki, M., & Sciabolazza, V. L. (2014). A consensus-based corporate governance paradigm for Islamic banks. *Qualitative Research in Financial Markets, 6*, 93-108.

Abobakr, M. G. (2017). Corporate Governance and Banks' Peformance: Evidence from Egypt. *Asian Economic and Financial Review, 7*, 1326-1343.

Adams, R. B., & Mehran, H. (2008). *Corporate performance, board structure, and their determinants in the banking industry*. New York: Federal Reserve Bank of New York.

Adams, R. B., & Mehran, H. (2012). Bank board structure and performance: Evidence from large bank holding companies. *Journal of Financial Intermediation , 21*, 243-267.

Adeabah, D., Gyeke-Dako, A., & Andoh, C. (2019). Board gender diversity, corporate governance and bank efficiency in Ghana: A two stage data envelop analysis (DEA) approach. *Corporate Governance, 19*, 299-320.

Adegboye, A., Ojeka, S., & Adegboye, K. (2020). Corporate governance structure, bank externalities and sensitivity of non-performing loans in Nigeria. *Cogent Economics & Finance, 8*, 1-21.

Aebi, V., Sabato, G., & Schmid, M. (2012). Risk management, corporate governance, and bank performance in the financial crisis. *Journal of Banking and Finance, 36*, 3213-3226.

Agénor, P., & Pereira da Silva, L. (2012). Cyclical effects of bank capital requirements . *Journal of Financial Stability , 8*, 43-56.

Agustin, H., Indrastuti, Tanjung, A. R., & Said, M. (2018). Ownership structure and bank performance. *Banks and Bank Systems, 13*, 80-87.

Aigner, D., Lovell, K., & Schmidt, P. (2018). Formulation and estimation of stochastic frontier production function models. *Journal of Econometrics, 6*(1), 21-37.

Ajili, H., & Bouri, A. (2018). Corporate governance quality of Islamic banks: measurement and ffect on financial performance. *International Journal of Islamic and Middle Eastern Finance and Managment, 11*, 470-487.

Almoneef, A., & Samontaray, D. P. (2019). Corporate governance and firm performance in the Saudi banking industry. *Banks and Bank Systems, 14*, 147-158.

Almutairi, A. R., & Quttainah, M. A. (2017). Corporate Governance: Evidence from Islamic Banks. *Social Responsibility Journal, 13*, 601-624.

Almutairi, A., & Quttainah, M. A. (2020). Foreign directors and corporate governance in Islamic banks. *Journal of Islamic Accounting and Business Research, 11*, 765-791.

Al-Sahafi, A., Rodrigs, M., & Barnes, L. (2015). Does corporate governance affect financial performance in the banking sector? Evidence from Saudi Arabia. *International Journal of Economics, Commerce and Management, III*, 1-26.

Al-Tamimi, H. A. (2012). The effects of corporate governance on performance and financial distress: The experience of UAE national banks. *Journal of Financial Regulation and Compliance, 20*, 169-181.

Andrie□, A. M., Căpraru, B., & Nistor, S. (2018). Corporate governance and efficiency in banking: Evidence from emerging economies. *Applied Economics, 50*, 3812-3832.

Anginer, D., Demirguc-kunt, A., Huizinga, H., & Ma, K. (2018). Corporate governance of banks and financial institutions. *Journal of Financial Economics, 130*, 327-346.

Arnaboldi, F., Casu, B., Kalotychou, E., & Sarkisyan, A. (2020). Board diversity reforms: Do they matter for EU bank performance? *European Financial Management, 26*, 416-454.

Arouri, H., Hossain, M., & Badrul Muttakin, M. (2014). Effects of board and ownewrship structure on corporate performance: Evidence from GCC countries. *Journal of Accounting in Emerging Economies , 4*, 117-130.

Assenga, M. P., & Aly, D. H. (2018). The impact of board characteristics on the financial performance of Tanzanian firsm. *The International Journal of Business in Society, 18*, 1089-1106.

Awadh, B. A., & Abdul Rahman, A. (2015). Bank performance and board of directors attributes by Islamic Banks. *International Journal of Islamic and Middle Eastern Finance and Management, 8*, 291-309.

Ayadi, M. A., Ayadi, N., & Trabelsi, S. (2019). Corporate governance, European bank performance and the financial crisis. *Managerial Auditing Journal, 34*, 338-371.

Azoury, N., Azouri, A., Bouri, E., & Khalife, D. (2018). Ownership concentration, ownership identity, and bank performance. *Banks and Bank Systems, 13*, 60-71.

Banker, R., Charnes, A., & Cooper, W. (1984). Some models for mstimating technical and scale inefficiencies in Data Envelopment Analysis. *Management Science, 30*(9), 1078-1092.

Basiruddin, R., & Ahmed, H. (2020). Corporate governance and Shariah non-compliant risk in Islamic banks: Evidence from Southeast Asia. *Corporate Governance, 20*, 240-262.

Basuony, M. A., Mohamed, E. K., & Al-Baidhani, A. M. (2014). The effect of corporate governance on bank financial performance: Evidence from the Arabian Peninsula. *Corporate Ownership & Control, 11*, 178-191.

Battaglia, F., & Gallo, A. (2015). Risk governance and Asian bank performance: An empirical investigation over the financial crisis. *Emerging Markets Review, 25*, 53-68.

Baxter, J., & Wright, E. (2000). The glass ceiling hypohtsis: A comparative study of the United States, Sweden, and Australia. *Gender and Society , 14*, 275-294.

BCBS. (2010). *Principles for enhancing corporate governance.* Basel: Basel Committee on Banking Supervision.

BCBS. (2015). *Corporate Governance Principles for Banks.* Basel, Switzerland: Basel Committee on Banking Supervision.

Becht, M., Bolton, P., & Röell, A. (2011). Why bank performance is diferent. *Oxford Review of Economic Policy, 27*, 437-463.

Belhaj, S., & Mateus, C. (2016). Corporate governance impact on bank performance: Evidence from Europe. *Corporate Ownership & Control, 13*, 583-597.

Beltratti, A., & Stulz, M. R. (2012). The credit crisis around the globe: Why did some banks perform better? . *Journal ofFinancialEconomics, 105*, 1-17.

Ben Moussa, F. (2019). The influence of internal corporate governance on bank credit risk: An empirical analysis for Tunisia. *Gloabl Business Review, 20*, 640-667.

Ben Zeineb, G., & Mensi, S. (2018). Corporate governance, risk and efficiency: Evidence from GCC Islamic banks. *Managerial Finance, 44*, 551-569.

Berger, A. A., Imbierowicz, B., & Rauch, C. (2016). The roles of corporate governance in bak failures during the recent financial crisis. *Journal of Money, Credit and Banking, 48*, 729-770.

Berger, A. N., Clarke, G. R., Cull, R., Klapper, L., & Udel, G. F. (2005). Corporate governance and bank performance: A joint analysis of the static, selection, and dynamic effects of domestic, foreign, and state ownership. *Journal of Banking & Finance, 29*, 2179-2221.

Beritelli, P., Bieger, T., & Laesser, C. (2007). Destination governance: Using corporate governance theories as a foundation for effective destination management. *Journal of Travel Research, 46*, 96-107.

Bezawada, B., & Adavelli, S. R. (2020). Corporate governance, board characteristics and performance of Indian banks: An empirical study. *International Journal of Economics and Financial Issues, 10*, 83-87.

Bhagat, S., Bolton, B., & Lu, J. (2015). Size, leverage, and risk-taking of financial institutions. *Journal of Banking & Finance, 59*, 520-537.

Bogdanova, B., Fender, I., & Takáts, E. (2018, March). International banking and financial market developments. *BIS Quarterly Review*.

Bokpin, G. (2013). Ownership structure, corporate governance and bank efficiency: An empirical analysis of panel data from the banking industry in Ghana. *Corporate Governance, 13*, 274-287.

Bokpin, G. (2016). Bank governance, regulation and risk-taking in Ghana. *Journal of African Business, 17*, 52-68.

Borisova, G., Brockman, P., Salas, J. M., & Zagorchev, A. (2012). Government ownership and corporate governance: Evidence from the EU. *Journal of Banking & Finance, 36*, 2719-2934.

Braendle, U. C. (2012). Coporate Governance in the Middle East - Another Arabic Spring? A Focus on the Financial Sector. *Improving Financial Institutions: the Proper Balance Between Regulation and Governance*, (pp. 1-10). Helsinki.

Bubbico, R., Giorgino, M., & Manda, B. (2013). The impact of corporate governance of the market value of financial institutions: Empirical evidence from Italy. *MPRA Paper No. 45419*. Munich, Austria. Retrieved May 2020

Bukhari, K. S., Awan, H. M., & Ahmed, F. (2013). *An evaluation of corporate governance practices of Islamic banks versus Islamic bank windows of conventional banks: A case of Pakistan, 36*, 400-416.

Cahyaningtyas, S. R., Sasanti, E. E., & Husnaini, W. (2017). Bank risk profile, good corporate governance and firm value in go public banking companies in Indonesia. *Journal of Economics, Business, and Accountancy Ventura, 20*, 41-46.

Campbell, A. (2007). Bank insolvency and the problem of nonperforming loans . *Journal of Banking Regulation, 9*, 25-45.

Caprio, G., Laeven, L., & Levine, R. (2007). Governance and bank valuation. *Journal of Financial Intermediation, 16*, 584-617.

Carlini, F., Cucinelli, D., Previtali, D., & Soana, M. G. (2020). Don't talk too bad! stock market reactions to bank corporate governance news. *Journal of Banking and Finance, 121*.

Carrillo, G., & Bathala, C. (2010). Corporate governance in banks: Do ownership and board structure matter for banks' risk profile and valuation? *Indian Journal of Corporate Governance, 3*, 1-18.

Chahine, S. (2007). Activity-based diversification, corporate governance, and market valuation of commercial banks in the Gulf Commercial Council. *Journal of Management and Governance, 11*, 353-382.

Chahine, S., & Safieddine, A. (2008). Corporate governance and the external monitoring of banks in Lebanon. *Corporate Governance, 8*, 258-270.

Chahine, S., & Safieddine, A. (2011). Is corporate governance different for the Lebanese banking system? *Journal of Management and Governance, 15*, 207-226.

Chan-Lau, J., & Sy, A.N.R. (2006). Distance-to-Default in banking: a bridge too far? IMF Working Paper WP/06/125. The International Monetary Fund, Washington DC.

Charnes, A., Cooper, & William, E. (1978). Measuring the efficiency of decision making units. *uropean Journal of Operational Research, 2*(6), 429-444.

Chen, H.-J., & Lin, K.-T. (2016). How do banks make the trade-offs among risks? the role of corporate governance. *Journal of Banking & Finance, 72*, 39-69.

Chou, S., & Lin, F. (2011). Bank's risk-taking and ownership structure - evidence for economics in transition stage. *Applied Economics, 43*, 1551-1564.

CIBAFI-World Bank. (2017). *Corporate governance practices in Islamic banks.* Manama, Bahrain: General Council for Islamic Banks and Financial Institutions and The World Bank Group.

Claessens, S. (2006). Corporate governance and development. *The World Bank Research Observer, 21*, 91-122.

Claessens, S., & Yurtoglu, B. B. (2013). Corporate governance in emerging markets: A survey. *Emerging Markets Review, 15*, 1-33.

Cornett, M. M., McNutt, J. J., & Tehranian, H. (2009). Corporate governance and earnings management at large U.S. bank holding companies. *Journal of Corporate Finance, 15*, 412-430.

Corporate governance in financial institutions and remuneration policies (Green Paper). (2010, June 2). Brussels: European Commission.

Damodaran, A. (2013). Valuing financial services firms. *The Journal of Financial Perspectives, 1*, 1-16.

de Andres, P., & Vallelado, E. (2008). Corporate governance in banking: The role of the board of directors. *Journal of Banking & Finance, 32*, 2570-2580.

de Haan, J., & Vlahu, R. (2016). Corporate governance of banks: A survey. *Journal of Economic Surveys, 30*, 228-277.

De Jonghe, O., Disli, M., & Schoors, K. (2012). Corporate governance, opaque bank activities, and risk/return efficiency: pre- and post-crisis evidence from Turkey. *Journal of Financial Services Research, 41*, 51-80.

Dedu, V., & Chitan, G. (2013). The influence of internal corporate governance on bank performance - an empirical analysis from Romania. *Procedia, 99*, 1114-1123.

Dermine, J. (2013). Bank corporate governance, beyond the global banking crisis. *Financial Markets, Institutions & Instruments*, 259-281.

Diamond, D., & Rajan, R. (2009). The credit conjectures about causes and remedies. *American Economic Review, 99*, 606-610.

Doğan, M., & Yildiz, F. (2013). The impact of board of directors' size on the bank's peformance: Evidence from Turkey. *European Journal of Business Management, 5*, 130-141.

Eagly, A., & Carli, L. (2003). The female leadership advantage: An evolution of the evidence. *The Leadership Quarterly, 14*, 807-834.

EBRD. (2013). *Financial Law Reform: from Moscow to Casablanca.* London: European Bank for Reconstruction and Development.

El-Masry, A. A., Abdelfattah, T., & Elbahar, E. (2016). Corporate governance amd risk management in GCC banks. *Corporate Ownership and Control , 13*, 8-16.

Erkens, D., Hung, M., & Matos, P. (2009). *Corporate governance in the 2007-2008 financial crisis: Evidence from financial institutions worldwide.* ECGI.

European Commission . (2010). *Corporate governance in financial institutions and remuneration policies.* Brussels: European Commission .

Fahlenbrach, R., & Slutz, R. M. (2011). Bank CEO incentives and the credit crisis. *99*, 11-26.

Faleye, O., & Krishnan, K. (2017). Risky lending: Does bank corporate governance matter? . *Journal of Banking & Finance, 83*, 57-69.

Farag, H., Mallin, C., & Ow-Yong, K. (2018). Corporate Governance in Islamic banks: New Insights for Dual Board Structure and Agency Relationships. *Journal of International Financial Markets, Institutions & Money, 54*, 59-77.

Felício, A., Rodrigues, R., Grove, H., & Greiner, A. (2018). The influence of corporate governance on bank risk during a financial crisis. *Economic Research, 31*, 1078-1090.

FSB. (2017). *Thematic Review on Corporate Governance.* Basel: Financial Stability Board.

Fu, X., Lin, Y., & Molyneux, P. (2014). Bank competetion and financial stabiltiy in Asia Pacific. *Journal of Banking & Finance, 38*, 46-77.

Gaganis, C., Lozano-Vivas, A., Papadimitri, P., & Pasiouras, F. (2020). Macroprudential policies, corporate governance and bank risk: Cross-country evidence. *Journal of Economic Behavior and Organization, 169*, 126-142.

Gallucci, C., Santulli, R., & Tipaldi, R. (2020). Women on bank boards and risk-taking: A cross-countries analysis on the moderating role of masculinity. *Corporate Ownership & Control, 17*, 71-83.

Garcia-Meca, E., Garcia-Sanchez, I.-M., & Martinez-Ferrero, J. (2015). Board diversity and its effect on bank performance: An international analysis. *Journal of Banking & Finance, 53*, 202-214.

Ghosh, S. (2018). Governance reforms and performance of MENA banks: Are disclosures effective? *Global Finance Journal, 36*, 78-95.

Ginena, K. (2014). Shari'ah Risk and Corporate Governance of Islamic Banks. *Corporate Governance, 14*, 86-103.

GOVERN-IFG/ESA. (2018). *Flagship Report on the Banking Sector in the Middle East and North Africa: Governance in Support of Stability and Trust.* Paris: Economic and Corporate Govenrnace Center and Institute of Finance and Governance.

Grassa, R. (2016). Corporate governance and credit rating in Islamic banks: Does Shariah governance matter? *Journal of Management and Governance, 20*, 875-906.

Grassa, R. (2018). Deposits structure, ownership concentration and corporate governance disclosure in GCC Islamic banks. *Journal of Islamic Accounting and Business Research, 9*, 587-606.

Grassa, R., & Matoussi, H. (2014). Corporate governance of Islamic banks: A comparative study between GCC and Southeast Asia countries. *International Journal of Islamic and Middle Eastern Finance and Management, 7*, 346-362.

Grassa, R., & Matoussi, H. (2014). Is Corporate Governance Different for Islamic Banks? A Comparative Analysis between the Gulf Cooperation Council and Southeast Asian Countries. *International Journal of Business Governance and Ethics, 9*, 27-51.

Greene, W. (1990). A gamma-distributed stochastic frontier model. *Journal of Econometrics, 46*, 141-163.

Grove, H., Patelli, L., Victoravich, L. M., & Xu, P. (2011). Corporate governance and performance in the wake of the financial crisis: Evidence from US commercial banks. *Corporate Governance: An International Review, 19*, 418-436.

Handorf, W. C. (2018). Value creation, risk management and US bank holding company governance. *Global Journal of Management and Business Research, 18*, 1-15.

Haque, F. (2019). Ownership, regulation and bank risk-taking: evidence from the Middle East and North Africa (MENA) region. *Corporate Governance, 19*, 23-43.

Harkin, S., Mare, D., & Crook, J. (2020). Independence in bank governance structure: Empirical evidence of effects on bank risk and performance. *Research in International Business and Finance, 52*, 1-21.

Hausman, J. (1978). Specification tests in econometrics. *Econometrica, 46*, 1251-1271.

Hillman, A., Withers, M., & Collins, B. (2009). Resource dependence theory: a review. *Journal of Management, 35*, 1404-1427.

Ibáñez-Hernándeza, F. J., Peña-Cerezob, M. A., & Araujo-de-la-Matac, A. (2019). Corporate governance and procyclicality in banking crisis: Empirical evidence and implications. *Finance Research Letters, 30*, 271-275.

IMF. (2018). *Women in finance: A case for closing gaps.* Washington D.C: The International Monetary Fund.

James, B. J., & Joseph, C. (2015). Corporate governance mechanisms and bank performance: Resource-based view. *Procedia Economics and Finance, 31*, 117-123.

Jiang, C., Feng, G., & Zhang, J. (2012). Corporate governance and bank performance in China. *Journal of Chinese Economic and Business Studies , 10*, 131-146.

John, K., De Masi, S., & Paci, A. (2016). Corporate governance in banks. *Corporate Governance: An International Review, 24*, 303-321.

Kashyap, A., Rajan, R., & Stein, J. C. (2008). Rethinking capital regulation. In *Maintaining Stability in a Changing Financial System* (pp. 431-471).

Kolderstova, A. (2010). The Second Corporate Governance Wave in the Middle East and North Africa. *OECD Journal: Financial Markets Trends, 2010*, 1-8.

Kolsi, M. C., & Grassa, R. (2017). Did corporate governance mechanisms affect earnings management? Further evidence from GCC Islamic banks. *International Journal of Islamic and Middle Eastern Finance and Management, 10*, 2-23.

Laeven. (2013). Corporate governance: What's special about banks? *Annual Review of Financial Economics, 5*, 63–92.

Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk-taking. *Journal of Financial Economics, 93*, 259-275.

Lassoued, M. (2018). Corporate governance and financial stability in Islamic banking. *Managerial Finance, 44*, 524-539.

Leventis, S., & Dimitropoulos, P. (2012). The role of corporate governance in earnings management: experience from US banks. *Journal of Applied Accounting Research, 13*, 161-177.

Levine, R. (2004). *The corporate governance of banks – A concise discussion of concepts and evidence.* Washington: The World Bank.

Li, Y., Armstrong, A., & Clarke, A. (2014). Relationships of corporate governance mechanisms and financial performance in Islamic banks: A meta-analysis. *Journal of Business Systems, Governance and Ethics, 9*, 50-63.

Liang, H.-Y., Chen, I.-J., & Chen, S.-S. (2016). Does corporate governance mitigate bank diversification discout? *International Review of Economics and Finance, 45*, 129-143.

Liang, Q., Xu, P., & Jiraporn, P. (2013). Board characteristics and Chinese bank performance . *Journal of Banking & Finance, 37*, 2953-2968.

Love, I., & Rachinsky, A. (2015). Corporate governance and bank performance in emerging markets: Evidence from Russia and Ukraine. *Emerging Markets Finance & Trade, 51*, 101-121.

Macey, J., & O'Hara, M. (2003). Corporate governance problems in banks. *Economic Policy Review, 9*, 91-108.

Mamatzakis, E., & Bermpei, T. (2015). The effect of corporae governance on the performance of US investment banks. *Financial Markets, Institutions & Instruments*, 191-239.

Manta, F., Tarulli, A., Morrone, D., & Toma, P. (2020). Toward a quadruple bottom line: Social disclosure and financial performance in the banking sector. *Sustainability, 12*, 1-18.

Mardnly, Z., Mouselli, S., & Abdulraouf, R. (2018). Corporate governance and firm performance: An empirical evidence from Syria. *International Journal of Islamic and Middle Eastern Finance and Management, 11*, 591-607.

Meeusen, W., & van Den Broeck, J. (1977). Efficiency estimation from Cobb-Douglas production functions with composed error. *International Economic Review, 18*(2), 435-444.

Mollah, S., & Zaman, M. (2015). Shari'ah Supervision, Corporate Governance and Performance: Conventional vs. Islamic Banks. *Journal of Banking & Finance, 58*, 418-435.

Mülbert, P. O. (2009). Corporate governance of banks. *European Business Organization Law Review, 10*, 411-436 .

Mutarindwaa, S., Schäfer, D., & Stephan, A. (2020). Central banks' supervisory guidance on corporate governance and bank stability: Evidence from African countries. *Emerging Markets Review, 43*.

Nawaz, T. (2017). Momentum investment strategies, corporate governance and firm performance: An analysis of Islamic banks. *Corporate Governance, 17*, 192-211.

Nicholson, G. J., & Kiel, G. C. (2007). Can Directors Impact Performance? A case-based test of three theories of corporate governance. *Journal Compilation, 15*, 585-608.

Nogataa, D., Uchidab, K., & Gotoc, N. (2011). Is corporate governance important for regulated firms' shareholders? Evidence from Japanese mergers and acquisitions. *Journal of Economics and Business, 63*, 46-68.

OECD. (2004). *OECD Principles of Corporate Governance.* Paris: OECD Publishing.

OECD. (2009). *Policy Brief on Improving Corporate Governance of Banks in the Middle East and North Africa.* Paris: OECD Publishing.

OECD. (2014). *Corporate Governance Enforcement in the Middle East and North Africa: Evidence and Priorities.* Paris: OECD Publishing.

OECD. (2015). *G20/OECD Principles of Corporate Governance.* Paris: OECD Publishing.

OECD. (2019). *OECD Survey of Corporate Governance Frameworks in the Middle.* Paris: OECD Publishing.

Orazalin, N., & Mahmood, M. (2018). The financial crisis as a wake-up call: Corporate governance and bank performance in an emerging market. *Corporate Governance: The International Journal of Business in Society, 19*, 80-101.

Orazalin, N., Mahmood, M., & Lee, K. J. (2016). Corporate governane, financial crises and bank performance: Lessons from top Russian banks. *Corporate Governance , 16*, 798-814.

Pathan, S. (2009). Strong boards, CEO power and bank risk-taking. *Journal of Banking and Finance, 33*, 1340-1350.

Peni, E., & Vahamaa, S. (2012). Did good corporate governance improve bank performance during the financial crisis? *Journal of Financial Services Research, 41*, 19-35.

Pfeffer, J., & Salancik, G. (1978). *The External Control of Organizations: A Resource Dependence.* New York: Harper and Row Publishers.

Piesse, J., Strange, R., & Toonsi, F. (2012). Is there a Distinctive MENA Model of Corporate Governance? *Journal of Management and Governance, 16*, 645-681.

Polona, P., Bratina, B., & Festic, M. (2016). Corporate governance of banks in Poland and Slovenia. *Naše gospodarstvo/Our Economy, 62*, 3-12.

Rachdi, H., Trabelsi, M. A., & Trade, N. (2013). Banking governance and risk: The case of Tunisian conventional banks. *Review of Economic Perspectives, 13*, 195-206.

Rose, C. (2017). The relationship between corporate governance characteristics and credit risk exposure in banks: implications for financial regulation. *European Journal of Law and Economics, 43*, 167-194.

Saghi-Zedek, N., & Tarazi, A. (2015). Excess control rights, financial crisis and bank profitabiltiy and risk . *Journal of Banking & Finance, 55*, 361-379.

Salim, R., Arjomandi, A., & Heinz, S. J. (2016). Does corporategovernanceaffectAustralianbanks' performance. *Journal of International Financial Markets, Insitutions & Money, 43*, 113-125.

Sarkar, S. (2015, August). *The Comply-or-Explain Approach for enforcing governance norms.* Mumbai: Indira Gandhi Institute of Development Research.

Siddiqi, M. N. (2006). Islamic banking and finance in theory and practice: A survey of state of the art. *Islamic Economic Studies, 13*, 1-48.

Sleifer, A., & Vishny, R. (1997). A survey of corporate governance. *Journal of Finance, 52*, 737-783.

Stevenson, R. (1980). Likelihood functions for generalized stochastic frontier estimation. *Journal of Econometrics, 13*, 57–66.

Switzer, L., & Wang, J. (2013). Default risk estimation, bank credit risk, and corporate governance. *Financial Markets, Institutions & Instruments*, 91-112.

Trabelsi, M. A. (2010). Governance and performance of Tunisian banks. *International Journal of Economics and Finance, 2*, 189-198.

Trinh, V. Q., Elnahass, M., Salama, A., & Izzeldin, M. (2020). Board busyness, performance and financial stability: does bank type matter? *The European Journal of Finance, 26*, 774-801.

Upadhyay, A., & Zeng, H. (2014). Gender and ethnic diversity on board and corporate information environment. *Journal of Business Research, 67*, 2456–2463.

Vasilakopoulos, K., Tzovas, C., & Ballas, A. (2018). The impact of corporate governance mechanisms on EU banks' income smoothing behavior. *Corporate Governance, 18*, 931-953.

Wang, W.-K., Lu, W.-M., & Lin, Y.-L. (2012). Does corporate governance play an important role in BHC performance? Evidence from the U.S. *Economic Modelling, 29*, 751-760.

Wasiuzzaman, S., & Gunasegavan, U. N. (2013). Comparative study of the performance of Islamic and conventional banks: The case of Malaysia. *Humanomics, 29*, 43-60.

Williams, J., & Nguyen, N. (2005). Financial liberation, crisis, and restructuring: A comparitive study of bank performance and bank governance in South East Asia. *Journal of Banking and Finance*, 2119-2154.

Yamori, N., Harimaya, K., & Tomimura, K. (2016). Corporate governance structure and efficiencies of cooperative banks. *International Journal of Finance and Economics, 22*, 368-378.

Appendix A: MENA countries regulatory framework: Company laws, securities laws and regulations

Country	Company law	Latest update	Securities law	Latest Update
Algeria	Code de Commerce (1975)	1994	Code boursier	2003
Bahrain	Commercial Companies Law	2018	The Central Bank of Bahrain and Financial Institutions Law (2006)	2017
Egypt	Companies Law No. 159 (1981) Capital Market Law No. 92 (1995)	2018	Listing Rules	2018
Iraq	Companies Law No. 21 (1997)	2004	Securities Law No. 74 (2004)	2007
Jordan	Companies Law No. 22 (1997)	2017	Securities Law	2016
Kuwait	Companies Law	2016	Kuwait Capital Markets Act	2015
Lebanon	The Lebanese Code of Commerce of 1942	1994	The Code of Money and Credit (1963) Decisions issued by the Central Bank of Lebanon (BDL) Capital Markets Law No. 161 (2011) Laws, Decisions and Regulations issued by the Capital Market Authority	1994
Morocco	Commercial Code Law No. 15-95	2016	Stock Exchange (Bourse des Valeurs) Law No.19-17	2016
	Companies Law No. 17-95	2015	Financial Market Authority Law No.43-12 Public Offerings Law No. 44-12	2013 2012
Oman	Commercial Companies Law Commercial Register Law	2005	Capital Market Law	2014
Palestine	Jordanian Companies Law Commercial Companies Law	2008	Securities Law	2004
Qatar	Commercial Companies Law No. 11 of 2015	2015	Qatar Financial Market Authority Law	2012
Saudi Arabia	Companies Law	2018	Capital Markets Law	2012
Tunisia	Code of Commercial Companies	2009	Law on the Reorganization of the Financial Market No. 94-117 (1994)	2005
UAE DIFC	Commercial Companies Law No.	2017	DIFC Markets Law No. 1/2012	2014

	2/2009			
UAE Federal	Federal Law No. 2 of 2015 on Commercial Companies	2015	Federal Law No. 4 of 2000 concerning the Emirates Securities & Commodities Authority and Market	2000
Yemen	Companies Law	2008	N/A	N/A

Source: (GOVERN-IFG/ESA, 2018) & (OECD, 2019). Notes: N/A = not applicable.

Appendix B: The main public regulator of corporate governance framework and its ruling body

Country	Key regulators	Ruling body in charge of corporate governance
Algeria	Commission d'Organisation et de Surveillance des Opérations de Bourse	Commission
Bahrain	Central Bank of Bahrain	Board of Directors
Egypt	Financial Regulatory Authority	Board of Directors
Iraq	Iraq Securities Commission	Commission
Jordan	Jordan Securities Commission	Board of Commissioners
Kuwait	Capital Market Authority	Board of Commissioners
Lebanon	Capital Market Authority	Lebanese Transparency Association
Morocco	Financial Market Authority	Board of Directors
Oman	Capital Market Authority	Capital Market Authority Board
Palestine	Capital Market Authority	Board of Directors
Qatar	Qatar Financial Markets Authority	Board of Directors
Saudi Arabia	Capital Market Authority	Board of Commissioners
Tunisia	Capital Market Authority	College of the Capital Market Authority
UAE DIFC	Dubai Financial Services Authority	Board of Directors
UAE Federal	Securities and Commodities Authority	Emirates Securities and Commodities Authority

Source: (OECD, 2019).

Appendix C: Regulatory authority of central banks and securities regulators

Country	Supervision of listed banks	Source of regulation
Bahrain	The corporate governance code is applicable for both listed companies and banks	Corporate Governance Code
Egypt	Banks regulated by the central bank and the securities regulator and to a lesser extent by the exchange	Corporate Governance Code and the securities regulations
Jordan	Banks regulated by the central bank and the securities regulator	Corporate Governance Code and the securities regulations
Kuwait	The central bank guidelines apply to all banks on a mandatory basis	Central bank guidelines
Lebanon	Banks are regulated exclusively by the central bank	Central bank guidelines
Morocco	Banks are regulated exclusively by the central bank	Central bank regulations
Oman	Banks and listed companies are regulated by separated corporate governance approaches, however some circulars of the Capital Market Authorities also apply to banks	Circular 989
Qatar	Listed banks are also subject to corporate governance regulations of Qatar Financial Market Authority	Qatar Financial Markets Authorities Corporate Governance Code
Saudi Arabia	Banks subject to Capital Markets Authorities and Saudi Arabian Monetary Authorities corporate governance regulations	Capital Markets Authorities Corporate Governance Code
Tunisia	Banks regulated exclusively by the central bank	Central bank regulations
UAE Federal	Banks regulated exclusively by the central bank. Corporate Governance Code released by the Emirates Securities & Commodities Authority explicitly excludes banks from securities regulator supervision	Corporate Governance Code for listed companies

Source: (GOVERN-IFG/ESA, 2018).

Appendix D: Board size, independence, duality, and gender diversity of the top 100 MENA banks – end 2018

Country	Bank	Board size	Duality	Number of independent board members	Number of women board members
Algeria	Banque de Developpement Local	10	Yes	N/A	3
Algeria	Banque Nationale d'Algérie	7	Yes	N/A	0
Algeria	Crédit Populaire d'Algérie	8	Yes	N/A	1
Bahrain	Ahli United Bank	11	Yes	6	0
Bahrain	Albaraka Banking Group	13	No	7	0
Bahrain	Arab Banking Corporation	12	No	4	0
Bahrain	Bank of Bahrain and Kuwait	12	No	5	0
Bahrain	GFH Financial Group	9	No	6	0
Bahrain	Gulf International Bank	8	Yes	7	0
Bahrain	Ithmaar Bank	10	No	5	2
Bahrain	National Bank of Bahrain	11	No	5	1
Egypt	Arab African International Bank	8	No	8	1
Egypt	Arab International Bank	14	Yes	N/A	0
Egypt	Banque du Caire	9	Yes	6	1
Egypt	Banque Misr	9	Yes	N/A	2
Egypt	Commercial International Bank	9	Yes	5	2
Egypt	National Bank of Egypt	9	Yes	6	2
Egypt	QNB AlAhli Bank – Egypt	9	Yes	N/A	3
Jordan	Arab Bank	12	No	7	0
Jordan	Bank al Etihad	11	No	4	1
Jordan	Housing Bank for Trade & Finance	13	No	4	1
Jordan	Jordan Islamic Bank	11	No	7	1
Kuwait	Ahli United Bank – Kuwait	9	No	2	0
Kuwait	Al Ahli Bank of Kuwait	10	No	N/A	0
Kuwait	Boubyan Bank	9	No	8	0
Kuwait	Burgan Bank	9	No	N/A	0
Kuwait	Commercial Bank of Kuwait	10	No	N/A	2

Kuwait	Gulf Bank	9	No	N/A	0
Kuwait	Kuwait Finance House	10	No	N/A	0
Kuwait	Kuwait International Bank	9	Yes	N/A	1
Kuwait	National Bank of Kuwait	9	No	N/A	0
Kuwait	Warba Bank	10	No	N/A	0
Lebanon	Audi Bank	11	Yes	5	2
Lebanon	B.L.C. Bank	12	Yes	2	1
Lebanon	Bank of Beirut	12	Yes	6	0
Lebanon	Banque Libano-Francaise	9	Yes	5	1
Lebanon	BBAC	8	Yes	N/A	0
Lebanon	Blom Bank	11	Yes	8	0
Lebanon	Byblos Bank	10	Yes	N/A	0
Lebanon	Crédit Libanais	11	Yes	N/A	0
Lebanon	First National Bank	9	Yes	N/A	0
Lebanon	Fransabank	12	Yes	N/A	1
Lebanon	IBL Bank	11	Yes	7	0
Lebanon	Lebanon & Gulf Bank	11	No	7	0
Lebanon	MED Bank	9	Yes	6	3
Lebanon	SGBL Bank	10	Yes	3	0
Libya	Bank of Commerce & Development	6	No	N/A	0
Libya	Jumhouria Bank	9	No	N/A	0
Libya	Libyan Foreign Bank	5	No	N/A	0
Morocco	Attijariwafa Bank	10	Yes	1	0
Morocco	Banque Centrale Populaire	13	Yes	3	2
Morocco	Banque Marocaine du Commerce Extérieur	13	Yes	4	1
Morocco	Crédit Agricole du Maroc	11	No	N/A	1
Oman	Bank Dhofar	9	No	5	0
Oman	Bank Muscat	9	No	6	0
Oman	National Bank of Oman	11	No	5	3
Oman	Oman Arab Bank	9	No	4	2
Oman	Sohar International Bank	7	No	6	0

Palestine	Bank of Palestine	11	No	N/A	3
Qatar	Ahli Bank	8	Yes	2	0
Qatar	Al Khalij Commercial Bank	9	Yes	3	1
Qatar	Barwa Bank	7	Yes	N/A	0
Qatar	Doha Bank	9	Yes	2	0
Qatar	International Bank of Qatar	9	Yes	3	0
Qatar	Masraf Al Rayan	9	Yes	3	0
Qatar	Qatar International Islamic Bank	9	Yes	N/A	0
Qatar	Qatar Islamic Bank	9	No	0	0
Qatar	Qatar National Bank	10	No	4	0
Qatar	The Commercial Bank	9	No	4	0
Saudi Arabia	Al Rajhi Bank	11	No	4	0
Saudi Arabia	Alawwal Bank	10	No	4	2
Saudi Arabia	Alinma Bank	9	No	4	0
Saudi Arabia	Arab National Bank	10	No	5	0
Saudi Arabia	Bank AlBilad	12	No	4	0
Saudi Arabia	Bank AlJazira	9	No	3	0
Saudi Arabia	Banque Saudi Fransi	10	No	4	0
Saudi Arabia	National Commercial Bank	9	No	4	0
Saudi Arabia	Riyad Bank	10	No	4	0
Saudi Arabia	Samba Financial Group	10	No	5	0
Saudi Arabia	Saudi British Bank	9	No	3	0
Saudi Arabia	Saudi Investment Bank	9	No	4	0
Tunisia	Banque Internationale Arabe de Tunisie	9	No	2	0
UAE	Abu Dhabi Commercial Bank	10	No	10	1
UAE	Abu Dhabi Islamic Bank	7	No	4	0
UAE	Al Hilal Bank	7	No	N/A	1
UAE	Al Masraf	7	No	1	0
UAE	Bank of Sharjah	11	No	5	0
UAE	Commercial Bank International	9	No	5	1
UAE	Commercial Bank of Dubai	11	No	11	0

UAE	Dubai Islamic Bank	8	No	N/A	0
UAE	Emirates Islamic Bank	7	No	N/A	0
UAE	Emirates NBD	9	No	N/A	0
UAE	First Abu Dhabi Bank	9	No	N/A	0
UAE	Mashreqbank	7	No	2	0
UAE	National Bank of Fujairah	9	No	N/A	0
UAE	National Bank of Ras Al-Khaimah	7	No	N/A	0
UAE	Noor Bank	9	No	N/A	1
UAE	Sharjah Islamic Bank	7	No	N/A	0
UAE	Union National Bank	9	No	5	0
UAE	United Arab Bank	9	No	5	1

Source: Bank annual reports and websites. Notes: N/A = not available.

Appendix E: Board committees of the top 100 MENA banks – end 2018

Country	Bank	Risk	Audit	Compliance	Governance	Nomination & remuneration
Algeria	Banque de Developpement Local	No	Yes	No	No	No
Algeria	Banque Nationale d'Algérie	No	Yes	No	No	No
Algeria	Crédit Populaire d'Algérie	No	Yes	No	No	No
Bahrain	Ahli United Bank	No	Yes	Yes	No	Yes
Bahrain	Albaraka Banking Group	Yes	Yes	No	Yes	Yes
Bahrain	Arab Banking Corporation	Yes	Yes	No	Yes	Yes
Bahrain	Bank of Bahrain and Kuwait	Yes	Yes	No	Yes	Yes
Bahrain	GFH Financial Group	Yes	Yes	No	Yes	Yes
Bahrain	Gulf International Bank	Yes	Yes	No	Yes	Yes
Bahrain	Ithmaar Bank	Yes	Yes	No	Yes	No
Bahrain	National Bank of Bahrain	No	Yes	No	No	Yes
Egypt	Arab African International Bank	Yes	Yes	No	Yes	Yes
Egypt	Arab International Bank	Yes	Yes	No	Yes	Yes
Egypt	Banque du Caire	Yes	Yes	No	Yes	Yes
Egypt	Banque Misr	Yes	Yes	No	Yes	Yes
Egypt	Commercial International Bank	Yes	Yes	No	Yes	Yes
Egypt	National Bank of Egypt	Yes	Yes	No	Yes	Yes
Egypt	QNB AlAhli Bank - Egypt	Yes	Yes	Yes	Yes	Yes
Jordan	Arab Bank	Yes	Yes	No	Yes	Yes
Jordan	Bank al Etihad	Yes	Yes	Yes	Yes	Yes
Jordan	Housing Bank for Trade & Finance	Yes	Yes	Yes	Yes	Yes
Jordan	Jordan Islamic Bank	Yes	Yes	No	Yes	Yes
Kuwait	Ahli United Bank - Kuwait	Yes	Yes	Yes	Yes	Yes
Kuwait	Al Ahli Bank of Kuwait	Yes	Yes	No	Yes	Yes
Kuwait	Boubyan Bank	Yes	Yes	Yes	Yes	Yes
Kuwait	Burgan Bank	Yes	Yes	No	Yes	Yes
Kuwait	Commercial Bank of Kuwait	Yes	Yes	No	Yes	Yes
Kuwait	Gulf Bank	Yes	Yes	No	Yes	Yes

Kuwait	Kuwait Finance House	Yes	Yes	Yes	Yes	Yes
Kuwait	Kuwait International Bank	Yes	Yes	No	Yes	Yes
Kuwait	National Bank of Kuwait	Yes	Yes	No	Yes	Yes
Kuwait	Warba Bank	Yes	Yes	No	Yes	Yes
Lebanon	Audi Bank	Yes	Yes	Yes	Yes	Yes
Lebanon	B.L.C. Bank	Yes	Yes	Yes	Yes	Yes
Lebanon	Bank of Beirut	Yes	Yes	Yes	No	Yes
Lebanon	Banque Libano-Francaise	Yes	Yes	Yes	Yes	Yes
Lebanon	BBAC	Yes	Yes	No	No	No
Lebanon	Blom Bank	Yes	Yes	Yes	Yes	Yes
Lebanon	Byblos Bank	Yes	Yes	Yes	Yes	Yes
Lebanon	Crédit Libanais	Yes	Yes	No	Yes	Yes
Lebanon	First National Bank	Yes	Yes	Yes	No	Yes
Lebanon	Fransabank	Yes	Yes	No	Yes	Yes
Lebanon	IBL Bank	Yes	Yes	No	No	Yes
Lebanon	Lebanon & Gulf Bank	Yes	Yes	Yes	Yes	Yes
Lebanon	MED Bank	Yes	Yes	Yes	Yes	Yes
Lebanon	SGBL Bank	Yes	Yes	No	Yes	Yes
Libya	Bank of Commerce & Development	Yes	Yes	No	Yes	Yes
Libya	Jumhouria Bank	No	Yes	Yes	No	No
Libya	Libyan Foreign Bank	Yes	Yes	No	Yes	Yes
Morocco	Attijariwafa Bank	Yes	Yes	No	No	Yes
Morocco	Banque Centrale Populaire	Yes	Yes	No	Yes	Yes
Morocco	Banque Marocaine du Commerce Extérieur	Yes	Yes	No	Yes	Yes
Morocco	Crédit Agricole du Maroc	Yes	Yes	No	No	Yes
Oman	Bank Dhofar	Yes	Yes	No	No	Yes
Oman	Bank Muscat	Yes	Yes	No	No	Yes
Oman	National Bank of Oman	Yes	Yes	No	No	No
Oman	Oman Arab Bank	Yes	Yes	Yes	No	Yes
Oman	Sohar International Bank	Yes	Yes	No	No	Yes

Palestine	Bank of Palestine	Yes	Yes	No	Yes	No
Qatar	Ahli Bank	Yes	Yes	No	Yes	Yes
Qatar	Al Khalij Commercial Bank	Yes	Yes	Yes	No	Yes
Qatar	Barwa Bank	Yes	Yes	No	No	Yes
Qatar	Doha Bank	Yes	Yes	Yes	Yes	Yes
Qatar	International Bank of Qatar	Yes	Yes	Yes	Yes	Yes
Qatar	Masraf Al Rayan	Yes	Yes	Yes	Yes	Yes
Qatar	Qatar International Islamic Bank	Yes	Yes	No	Yes	Yes
Qatar	Qatar Islamic Bank	Yes	Yes	Yes	Yes	Yes
Qatar	Qatar National Bank	Yes	Yes	Yes	Yes	Yes
Qatar	The Commercial Bank	Yes	Yes	No	No	No
Saudi Arabia	Al Rajhi Bank	Yes	Yes	Yes	Yes	Yes
Saudi Arabia	Alawwal Bank	Yes	Yes	No	No	Yes
Saudi Arabia	Alinma Bank	Yes	Yes	No	No	Yes
Saudi Arabia	Arab National Bank	Yes	Yes	No	No	Yes
Saudi Arabia	Bank AlBilad	Yes	Yes	Yes	Yes	Yes
Saudi Arabia	Bank AlJazira	Yes	Yes	No	No	Yes
Saudi Arabia	Banque Saudi Fransi	Yes	Yes	No	No	Yes
Saudi Arabia	National Commercial Bank	Yes	Yes	No	Yes	Yes
Saudi Arabia	Riyad Bank	Yes	Yes	No	No	Yes
Saudi Arabia	Samba Financial Group	Yes	Yes	No	No	Yes
Saudi Arabia	Saudi British Bank	Yes	Yes	No	No	Yes
Saudi Arabia	Saudi Investment Bank	Yes	Yes	No	Yes	Yes
Tunisia	Banque Internationale Arabe de Tunisie	Yes	Yes	No	No	No
UAE	Abu Dhabi Commercial Bank	Yes	Yes	Yes	Yes	Yes
UAE	Abu Dhabi Islamic Bank	Yes	Yes	Yes	Yes	Yes
UAE	Al Hilal Bank	Yes	YES	No	Yes	No
UAE	Al Masraf	Yes	Yes	Yes	No	Yes
UAE	Bank of Sharjah	Yes	No	No	No	No
UAE	Commercial Bank International	Yes	Yes	No	No	Yes

UAE	Commercial Bank of Dubai	Yes	Yes	Yes	No	Yes
UAE	Dubai Islamic Bank	No	Yes	No	No	Yes
UAE	Emirates Islamic Bank	Yes	Yes	No	No	Yes
UAE	Emirates NBD	Yes	Yes	No	No	Yes
UAE	First Abu Dhabi Bank	Yes	Yes	Yes	No	Yes
UAE	Mashreqbank	Yes	Yes	No	No	Yes
UAE	National Bank of Fujairah	Yes	Yes	No	No	Yes
UAE	National Bank of Ras Al-Khaimah	Yes	Yes	No	No	Yes
UAE	Noor Bank	Yes	Yes	No	No	Yes
UAE	Sharjah Islamic Bank	Yes	Yes	No	No	No
UAE	Union National Bank	Yes	Yes	No	No	Yes
UAE	United Arab Bank	Yes	Yes	No	Yes	Yes

Source: Bank annual reports and websites.

Appendix F: The ownership type and concentration of the top 100 MENA banks – end 2018

Country	Bank	Ownership type [a]	Ownership concentration [b]
Algeria	Banque de Developpement Local	Public	100.00
Algeria	Banque Nationale d'Algérie	Public	100.00
Algeria	Crédit Populaire d'Algérie	Public	100.00
Bahrain	Ahli United Bank	Private	35.76
Bahrain	Albaraka Banking Group	Private	74.07
Bahrain	Arab Banking Corporation	Public	100.00
Bahrain	Bank of Bahrain and Kuwait	Private	62.85
Bahrain	GFH Financial Group	Private	15.91
Bahrain	Gulf International Bank	Public	98.69
Bahrain	Ithmaar Bank	Private	58.03
Bahrain	National Bank of Bahrain	Private	56.93
Egypt	Arab African International Bank	Public	100.00
Egypt	Arab International Bank	Public	90.50
Egypt	Banque du Caire	Private	100.00
Egypt	Banque Misr	Public	100.00
Egypt	Commercial International Bank	Private	15.00
Egypt	National Bank of Egypt	Public	100.00
Egypt	QNB AlAhli Bank – Egypt	Public	100.00
Jordan	Arab Bank	Private	25.53
Jordan	Bank al Etihad	Private	62.73
Jordan	Housing Bank for Trade & Finance	Public	70.03
Jordan	Jordan Islamic Bank	Private	76.00
Kuwait	Ahli United Bank – Kuwait	Private	89.37
Kuwait	Al Ahli Bank of Kuwait	Private	28.67
Kuwait	Boubyan Bank	Public	71.27
Kuwait	Burgan Bank	Private	63.75
Kuwait	Commercial Bank of Kuwait	Private	23.97
Kuwait	Gulf Bank	Private	44.38
Kuwait	Kuwait Finance House	Private	41.86
Kuwait	Kuwait International Bank	Private	43.87
Kuwait	National Bank of Kuwait	Private	8.58
Kuwait	Warba Bank	Private	41.93
Lebanon	Audi Bank	Private	46.55
Lebanon	B.L.C. Bank	Private	93.27
Lebanon	Bank of Beirut	Private	38.98
Lebanon	Banque Libano-Francaise	Private	57.89
Lebanon	BBAC	Private	91.52
Lebanon	Blom Bank	Private	57.64
Lebanon	Byblos Bank	Private	48.93
Lebanon	Crédit Libanais	Private	48.87
Lebanon	First National Bank	Private	36.99

Lebanon	Fransabank	Private	84.62
Lebanon	IBL Bank	Private	29.61
Lebanon	Lebanon & Gulf Bank	Private	
Lebanon	MED Bank	Private	100.00
Lebanon	SGBL Bank	Private	87.69
Libya	Bank of Commerce & Development	Public	100.00
Libya	Jumhouria Bank	Public	100.00
Libya	Libyan Foreign Bank	Public	100.00
Morocco	Attijariwafa Bank	Private	62.00
Morocco	Banque Centrale Populaire	Private	18.67
Morocco	Banque Marocaine du Commerce Extérieur	Private	65.63
Morocco	Crédit Agricole du Maroc	Public	90.10
Oman	Bank Dhofar	Private	41.77
Oman	Bank Muscat	Private	42.96
Oman	National Bank of Oman	Private	60.44
Oman	Oman Arab Bank	Private	100.00
Oman	Sohar International Bank	Private	39.21
Palestine	Bank of Palestine	Private	15.34
Qatar	Ahli Bank	Private	50.70
Qatar	Al Khalij Commercial Bank	Private	54.49
Qatar	Barwa Bank	Private	35.28
Qatar	Doha Bank	Private	20.89
Qatar	International Bank of Qatar	Private	78.99
Qatar	Masraf Al Rayan	Private	26.21
Qatar	Qatar International Islamic Bank	Private	32.90
Qatar	Qatar Islamic Bank	Private	27.40
Qatar	Qatar National Bank	Public	52.85
Qatar	The Commercial Bank	Private	21.66
Saudi Arabia	Al Rajhi Bank	Private	21.06
Saudi Arabia	Alawwal Bank	Private	72.2
Saudi Arabia	Alinma Bank	Private	25.81
Saudi Arabia	Arab National Bank	Private	61.27
Saudi Arabia	Bank AlBilad	Private	40.93
Saudi Arabia	Bank AlJazira	Private	14.47
Saudi Arabia	Banque Saudi Fransi	Private	44.40
Saudi Arabia	National Commercial Bank	Public	64.55
Saudi Arabia	Riyad Bank	Private	47.77
Saudi Arabia	Samba Financial Group	Private	49.70
Saudi Arabia	Saudi British Bank	Private	66.69
Saudi Arabia	Saudi Investment Bank	Private	42.49
Tunisia	Banque Internationale Arabe de Tunisie	Private	61.7
UAE	Abu Dhabi Commercial Bank	Public	65.01
UAE	Abu Dhabi Islamic Bank	Private	49.92
UAE	Al Hilal Bank	Public	100.00

UAE	Al Masraf	Public	100.00
UAE	Bank of Sharjah	Private	36.04
UAE	Commercial Bank International	Private	73.24
UAE	Commercial Bank of Dubai	Private	39.35
UAE	Dubai Islamic Bank	Private	30.63
UAE	Emirates Islamic Bank	Public	100.00
UAE	Emirates NBD	Public	61.22
UAE	First Abu Dhabi Bank	Private	37.20
UAE	Mashreqbank	Private	83.30
UAE	National Bank of Fujairah	Private	70.87
UAE	National Bank of Ras Al-Khaimah	Public	55.87
UAE	Noor Bank	Public	53.16
UAE	Sharjah Islamic Bank	Private	55.74
UAE	Union National Bank	Public	60.01
UAE	United Arab Bank	Private	56.56

Source: Bank annual reports and websites. Notes: [a] A bank is considered Public if the government holds more than 50% of its equity. [b] The percentage of ownership of the largest 3 shareholders.

Appendix G: The corporate governance and performance variables exploited by the literature presented in Chapter Two

Study	Exploited corporate governance variables	Performance measures
(Salim, Arjomandi, & Heinz, 2016)	Board size Board independence Number of board meetings Number of committee meetings Ownership concentration	Technical efficiency
(Mamatzakis & Bermpei, 2015)	Board size Board independence Board gender diversity Role duality Internally hired CEO Shares held by the CEO CEO age	Technical efficiency ROE ROA
(Grove, Patelli, Victoravich, & Xu, Corporate governance and performance in the wake of the financial crisis: Evidence from US commercial banks, 2011)	Board size Role duality Board independence	ROA
(Belhaj & Mateus, 2016)	Board size Role duality Board independence Board gender diversity	ROE ROA
(Wang, Lu, & Lin, 2012)	Board size Board independence Role duality	Technical efficiency
(Saghi-Zedek & Tarazi, Excess control rights, financial crisis and bank profitabiltiy and risk , 2015)	State ownership Private ownership	ROA
(Garcia-Meca, Garcia-Sanchez, & Martinez-Ferrero, 2015)	Board size Board independence Role duality Board gender diversity Board national diversity	ROA

(Cornett, McNutt, & Tehranian, 2009)	Board independence Role duality Number of board meetings Size of audit committee	EBEITA Earnings management
(Ayadi, Ayadi, & Trabelsi, 2019)	Board size Board independence Role duality The existence of a remuneration committee	ROE ROA
(Harkin, Mare, & Crook, Independence in bank governance structure: Empirical evidence of effects on bank risk and performance, 2020)	Board size Role duality Board independence Board gender diversity State ownership The existence of a remuneration committee	ROA
(De Jonghe, Disli, & Schoors, 2012)	Role duality Board experience Political connections	Technical efficiency
(Orazalin, Mahmood, & Lee, 2016)	Board characteristics Ownership structure Corporate disclosure CEO education	ROE ROA
(Dedu & Chitan, The influence of internal corporate governance on bank performance - an empirical analysis from Romania, 2013)	Ownership structure Board independence Board gender diversity	ROE ROA
(Williams & Nguyen, 2005)	State ownership	Profit efficiency Technical change Productivity
(Berger A. N., Clarke, Cull, Klapper, & Udel, 2005)	Ownership type	ROE
(Mollah & Zaman, Sahri'ah supervision, corporate governance and	Sharia supervision boards Board independence CEO power	ROA

performance: Conventional vs. Islamic banks, 2015)		
(Battaglia & Gallo, 2015)	Board size Board independence The size risk committee	ROE ROA
(Jiang, Feng, & Zhang, 2012)	Ownership type Ownership concentration	Profit efficiency
(James & Joseph, 2015)	Board size Board independence	ROA
(Liang, Xu, & Jiraporn, Board characteristics and Chinese bank performance , 2013)	Board size Number of board meetings Board independence Politically connected directors	ROE
(Adeabah, Gyeke-Dako, & Andoh, 2019)	Board size Board gender diversity Board independence	Technical efficiency
(Bokpin G. A., 2013)	Board size Board independence Managerial ownership	Profit efficiency
(Awadh & Abdul Rahman, 2015)	Board size Board independence Chairman independence Role duality	ROE ROA
(Ajili & Bouri, Corporate governance quality of Islamic banks: Measurement and effect on financial performance, 2018)	Characteristics of board of directors The existence of audit committee	ROE ROA
(Ben Zeineb & Mensi, Corporate governance, risk and efficiency: Evidence from GCC Islamic banks, 2018)	Board size Role duality Ownership structure	Technical efficiency
(Azoury, Azouri, Bouri, & Khalife, 2018)	Board independence Duality Ownership concentration	ROA

	Directors' ownership Institutional ownership Foreign ownership	
(Chahine & Safieddine, Is corporate governance different for the Lebanese banking system?, 2011)	Board size Board independence	ROE ROA
(Agustin, Indrastuti, Tanjung, & Said, 2018)	Government ownership Foreign ownership	ROE ROA
(Bezawada & Adavelli, 2020)	Board size Board independence Board meeting Board business	ROA

Appendix H: The corporate governance and valuation variables exploited by the literature presented in Chapter Three

Study	Exploited corporate governance variables	Market value measures
Grove, Patelli, Victoravich & Xu (2011)	Board size Role duality	Jensen's Alpha
Adams & Mehran (2012)	Board size Board independence Number of board committees	Tobin's Q
Belhaj & Mateus (2016)	Board size Board independence Board gender diversity Role duality	Tobin's Q
Manta, Tarulli, Morrone & Toma (2020)	Board gender diversity	Market capitalisation Tobin's Q
Handorf (2018)	Board size Board independence Board gender diversity Number of board committees Committees' structure	Market-to-book ratio
Garcia-Meca, Garcia-Sanchez & Martinez-Ferrero (2015)	Board size Role duality Board independence Board gender diversity Board national diversity	Tobin's Q
Peni & Vahamaa (2012)	Corporate governance index	Tobin's Q Stock returns
de Andres and Vallelado (2008)	Board size Board independence	Tobin's Q
Aebi, Sabato & Schmid (2012)	Board size Board independence Role duality Institutional shareholding The existence of a risk committee Number of risk committee meetings	Stock returns
Arnaboldi, Casu, Kalotychou & Sarkisyan (2020)	Board gender diversity	Tobin's Q Stock returns Stock returns volatility
Caprio, Laeven & Levine (2007)	Ownership structure	Market-to-book ratio
Liang, Chen & Chen (2016)	Board independence Role duality	Tobin's Q
Beltratti and Stulz (2012)	Ownership concentration Shareholder-friendly boards	Stock returns
Nogataa, Uchidab & Gotoc (2011)	Governance index Board size Board independence	Stock returns

Battaglia & Gallo (2015)	Board size Board independence The size risk committee	Tobin's Q P/E ratio
Mollah & Zaman (2015)	Sharia supervisory boards Board size Board independence Role duality	Tobin's Q
Abdel-Baki & Sciabolazza (2014)	Corporate governance index	Tobin's Q P/E ratio
Nawaz (2017)	Board size Board independence Size of sharia supervisory board Role duality	Tobin's Q
Chahine (2007)	Board size Foreign ownership State ownership	P/E ratio Market-to-book ratio
Carrillo & Bathala (2010)	Board independence The existence of governance committee The existence of audit committee Inside ownership Ownership concentration Institutional ownership	Market-to-book ratio
Arouri, Hossain & Badrul Muttakin (2014)	Role duality Foreign ownership State ownership	Tobin's Q Market-to-book ratio
Cahyaningtyas, Sasanti & Husnaini (2017)	Corporate Governance Composite	Tobin's Q
Almoneef & Samontaray (2019)	Board size Number of board meetings Board independence Number of committees The size of audit committee Number of audit committee meetings	Tobin's Q
Basuony, Mohamed & Al-Baidhani	Board size Role duality Board independence Ownership concentration Director ownership The existence of audit committee Number of audit committee meetings	Tobin's Q
Doğan & Yildiz (2013)	Corporate governance index Board size	Tobin's Q
Bubbico, Giorgino and & Monda	Ownership concentration	Tobin's Q
Al-Sahafi, Rodrigs & Barnes (2015)	Board size Board independence	Tobin's Q

	Role duality The size of audit committee The independence of audit committee Ownership concentration	
Trabelsi (2010)	Board independence Ownership concentration State ownership	Tobin's Q

Appendix I: The corporate governance and risk and stability variables exploited by the literature presented in Chapter Four

Study	Exploited corporate governance variables	Risk and stability measures
(Bhagat, Bolton, & Lu, 2015)	CEO ownership	Z-score Distance to default
(Grove, Patelli, Victoravich, & Xu, 2011)	Board size Proportion of inside directors Duality	NPL
(Felício, Rodrigues, Grove, & Greiner, 2018)	Board size Board meetings Role duality Directors age CEO compensation Directors business The audit or remuneration committees' chairs are affiliated director	Total risk Systemic risk Idiosyncratic risk
(Saghi-Zedek & Tarazi, Excess control rights, financial crisis and bank profitability and risk, 2015)	State ownership	Z-score Distance to default
(Vasilakopoulos, Tzovas, & Ballas, 2018)	Board size Board independence CEO-chairman role duality CEO remuneration	LLP
(Harkin, Mare, & Crook, Independence in bank governance structure: Empirical evidence of effects on bank risk and performance, 2020)	Board size Role duality Board gender diversity The existence of remuneration committee State ownership	Loan impairment ratio
(Rose, 2017)	Proportion of inside directors Board gender diversity Directors' remuneration Proportion of employee board members	Bailout
(Switzer & Wang, 2013)	Board size Board independence Institutional ownership CEO age CFO age Directors' business	Probability of default
(Faleye & Krishnan, 2017)	Board size Board independence Role duality	Long-term credit rating of bank loans

	CEO ownership	
(Leventis & Dimitropoulos, 2012)	Corporate governance index	LLP
(Ibáñez-Hernándeza, Peña-Cerezob, & Araujo-de-la-Matac, 2019)	Board size Board gender diversity Chairman tenure Political dependence	Bailout
(Berger, Imbierowicz, & Rauch, 2016)	Board size Board independence Role duality CEO remuneration CEO shareholding Shareholding of non-CEO higher management Shareholding of lower management	Probability of default
(Liang, Xu, & Jiraporn, Board characteristics and Chinese bank performance, 2013)	Board size Board independence State ownership Political connection	LLP
(Dedu & Chitan, The influence of internal corporate governance on bank performance - an emprirical analysis for Romania, 2013)	Board independence Board gender diversity	Z-score
(Bokpin, 2013)	Board size Board independence	LLP
(Berger A. , Clarke, Cull, Klapper, & Udell, 2005)	State ownership Foreign ownership	NPL ratio
(Chou & Lin, 2011)	Board ownership Management ownership State ownership Foreign ownership	Overdue loans Regulatory capital
(Bokpin G. , Bank governance, regulation and risk-taking in Ghana, 2016)	Board size Board independence State ownership	Z-score
(El-Masry, Abdelfattah, & Elbahar, 2016)	Board size Board independence Board gender diversity The existence of audit committee The existence of risk committee State ownership	LLP
(Ben Moussa, 2019)	Board size Role duality Board independence	NPL ratio

	Board gender diversity State ownership Foreign ownership Institutional ownership	
(Rachdi, Trabelsi, & Trade, 2013)	Board size Role duality Board independence CEO shareholding	Z-score Credit risk Global risk
(Haque, 2019)	Foreign ownership Ownership concentration State ownership Institutional ownership	Z-score Portfolio risk Credit risk
(Ben Zeineb & Mensi, Corporate governance, risk and efficiency: evidence from GCC Islamic banks, 2018)	Board size Role duality State ownership	Z-score
(Lassoued, 2018)	Sharia board size Board size Board independence	Z-score
(Kolsi & Grassa, 2017)	Sharia board size Board size Board independence The size of audit committee Meetings of audit committee Ownership concentration Institutional ownership	Discretionary LLP
(Grassa, Corporate governance and credit rating in Islamic banks: Does Shariah governance matter?, 2016)	Board size Board independence Role duality CEO tenure Board gender diversity Foreign directors Board expertise Sharia board expertise Directors' age Ownership concentration Foreign ownership	Bank credit rating
(Laeven & Levine, 2009)	Powerful owners	Z-score
(Chen & Lin, 2016)	Board size Board independence Role duality Ownership concentration	Credit risk (NPL ratios) Liquidity risk (LCR and NSFR) Interest rate risk
(Anginer, Demirguc-kunt, Huizinga, & Ma, 2018)	Shareholder-friendly corporate governance	Distance to default Leverage ratio Asset volatility

		Marginal expected shortfall Systemic risk
(Gaganis, Lozano-Vivas, Papadimitri, & Pasiouras, 2020)	Corporate governance index	Z-score Distance to default Probability of default
(Gallucci, Santulli, & Tipaldi, 2020)	Board size Board independence Board gender diversity Ownership concentration Director ownership Institutional ownership	Standard deviation of ROA
(Adegboye, Ojeka, & Adegboye, 2020)	Corporate governance index Board size Board independence Board meetings Director ownership The size of risk committee The risk committee meetings	NPL ratio
(Almutairi & Quttainah, 2020)	Board size External directors Foreign directors	Discretionary LLP
(Basiruddin & Ahmed, 2020)	Board size Board independence Board meetings Board compensation	Shariah non-compliance risk
(Bezawada & Adavelli, 2020)	Board size Board independence Board meetings Board business	Asset quality (net non-performing assets ratio)
(Mutarindwaa, Schäfer, & Stephan, 2020)	Board size Board independence Board gender diversity CEO duality Ownership concentration	Z-score LLP ratio NPL ratio