



SAPIENZA  
UNIVERSITÀ DI ROMA

# **Into the Dual Financial Systems Analysis: “*Shaken, not stirred*”**

Insights of the Islamic Financial System looking for  
a more sustainable concept of finance

Faculty of Economy

Department of Management

Doctoral Program in Management, Banking and Commodity  
Sciences

Curriculum Banking and Finance – XXXIV Cycle

Candidate

Andrea Delle Foglie

ID Number 1742745

Thesis Supervisor

Prof. Ida Claudia Panetta

Academic Year 2020/2021





SAPIENZA  
UNIVERSITÀ DI ROMA

# **Into the Dual Financial Systems Analysis: “*Shaken, not stirred*”**

Insights of the Islamic Financial System looking for  
a more sustainable concept of finance

Candidate

Andrea Delle Foglie

ID Number 1742745

Thesis Supervisor

Prof. Ida Claudia Panetta

Academic Year 2020/2021

© 2021 Ph.D. Thesis Andrea Delle Foglie – All Rights Reserved

## **The journey into research: summary**

This thesis work results from the research career designed and pursued during the Doctoral Program in Banking and Finance. This thesis concerns the analysis of the financial system with a focus on the so-called *Dual Financial Systems* and consists on a research products collection published (4 papers) or submitted (1) to scientific journals and discussed during conferences or seminars (2).

As mentioned, the research work focuses on the international financial system analysis by focusing on the architecture of the Islamic Financial System (IFS), examining distinguishing features and principal components. The research highlights the principles of globalization, integration, and standardization of the international financial systems, starting from the principle of ethicality and sustainability underpinning the Islamic Finance world. In addition, in line with the principle of ethicality and sustainability characterizing modern economics, the research focuses on the possibility to combine development with fairness. Indeed, it also focuses on the ethical dimension of the financial system architecture going into the substance of the sustainability rating methodologies and the ongoing European regulation on sustainability and ESG investments towards a better standardization of the regulatory framework and the business environment.

Looking at the international financial system landscape, the IFS is one of the most globally spread and recognized financial systems alongside the conventional one. The minting of the term *Islamic Economics*, combined with its evolution in *Islamic Finance*, is born to identify the relationship between religious and economic practices in those countries defined "Islamic". This relation is complex due to the different interpretations of *Shariah*, as the Islamic law (Yaacob and Abdullah, 2012, Hussain et al., 2015). Nevertheless, due to the religious interpretation and its application in economic-financial relationships, Islamic Finance is now globally widespread, representing a growing phenomenon.

According to the Islamic Financial Services Industry Stability Report 2021, despite the difficulty due to the Covid-19 pandemic, the total worth of the IFS amounted to USD 2.7 trillion in 2020 (about 11% year-on-year growth rate). The robust expansion of the IFS can be attributed to the significant steps forward carried out by Islamic banking and the Islamic capital markets industry during the last years, moving closer to conventional financial systems. Moreover, the pandemic has confirmed the IFS stability allowing employing and experiencing innovative instruments to tackle the economic distress. All these points confirm the evolution of the Islamic Finance concept due to the globalization and the increasing of the international financial relationships passing through the frontier of those countries *Muslim-majority* and starting a process (even if only at the beginning) of integration and standardization beyond the religious borders (State of the Global Islamic Economy Report, 2019; Miglietta, 2009). Over time, this process has generated a series of norms, which have evolved into a legal order characterized by different financial instruments, activities, and institutions. Thus, it has been possible to combine the term "Islamic" with the definition of the financial system, intended as an organized set of markets, intermediaries, and financial instruments.

The complexity of the studies of the financial system makes it inevitable to deepen all the elements that characterized it. Mainly, the attention moves on those aspects of the capital market and banking system (which characterize the curriculum of studies addressed), not forgetting the dominant impact of digital and technological innovation and sustainability. In this regard, the research field has been developed by studying those financial systems defined as "Dual", referring to those where a double regulation is in force by splitting the financial system architecture into two different and parallel entities legally recognized and accepted (Beck et al. 2013; Hammoudeh et al. 2014). The presence of a double regulation is a key element that inevitably brings to life the financial system element splitting, as a double capital market or double banking and insurance system as long as the existence of different interest rates creates a double sovereign bond market. It is easy to

identify the combination of “Dual” in those financial systems where the IFS coexists with the conventional one. However, the literature has so far focused only on the mere comparison of these two systems (Masih et al. 2018; Hassan et al. 2018; Ibrahim 2015) in search of a system that performs better in terms of risk and return of the two main components such as the capital market and the banking system. Furthermore, looking at the comparison topic between different countries, banks and banking systems, the conventional-Islamic juxtaposition often does not consider the different historical and geopolitical characteristics and the differences in ethical principles between countries and the lack of regulatory uniformity characteristic of Islamic Finance. Overcoming the mere comparative approach represents a key point in deepening and researching the logic at the base of financial systems. In this regard, a different integrative approach wants to be a stimulus to a standardization process that the interconnection of financial systems has made necessary. Notably, it is not to define the best financial system in terms of organization and performance but to provide valuable elements for its continuous development and expansion. The initial definition of Dual Financial System as the combination of the conventional with the Islamic financial system model, although it paves the way for integration and standardization, may not be conclusive by referencing a concept of "different" since it is linked to religion. Therefore, the fil rouge that binds this research aims to overcome the conventional, Islamic or dual concepts in search of those elements that contribute to creating an integrated financial system. It means a system capable of capturing the best practices for better performance in terms of stability, soundness, resilience and security, ensuring a proper level playing field for all its members' thanks to a high level of inclusion. Thus, to overcome a merely comparative approach between these systems, it is essential to conduct a deep analysis of those elements that characterize the architecture of financial systems, analyzing the Islamic financial one. The work is structured, splitting it into different parts that correspond to some of the most important

elements that characterize the IFS. For each area, it presents a research paper (published or submitted to a journal). The work is then organized into Chapters.

Part 1 is related to the “*Banks and Banking Regulation in International Financial Systems*”. Since regulation is essential in defining the financial system architecture, the starting point consists of deepening the analysis of the banking regulation characterizing those countries in which Islamic Finance is most spread. Alongside the study of the banking regulation, it has been possible to build a new taxonomy of the financial systems that consider the regulation as a discriminant variable to classify the banking system architecture. The research work also analyses the problem related to the risk of regulatory arbitrage affecting dual financial systems' banking regulation (Chapter 1). Finally, the research has also deepened on the banking system analyzing the profitability and the stability of a sample of selected banks from the countries constituents of the taxonomy, intending to identify the impact of the international banking regulation. The panel data analysis has been carried out using the ANOVA and MANOVA models using STATA Data Analysis (Chapter 2). This last paper has been developed during research visiting spent at the Regent’s University London in January-March 2020.

Therefore, the research work continues with studying the “*Financial Markets*” (Part 2). Notably, it has deepened the problem related to the performance comparison of the IFS with the conventional one, focused on identifying which is the best financial market achieved the best performance. For this purpose, with the instrument of the literature review, it has made it possible to systematically carry out the Islamic and conventional stock market analysis, following the logic of identifying those elements that can provide added value in a logic of the integrated approach (Chapter 3). Similarly, the logic of the integrated approach has been applied to a specific research work resulting in a *Combined Portfolio* design to study the Shariah-Compliant stocks performance, diversification and hedging benefits, and different macroeconomic scenarios (Chapter 4). The last research work of this

part focused on the impact of financial innovation on Islamic Finance. The major countries operating alongside the IFS have for some time been channelling resources and investment into the field of technological innovation and finance, seeking to exploit the potential that emerging Distributed Ledger Technologies (DLTs) can offer with a view to integration, inclusion and expansion (Chapter 5). Finally, the research ends with the field of “*Sustainability*” (Part 3). The last work included a systematic analysis of the leading sustainability rating methodologies used by the main rating agencies and globally widespread. The attention has also been focused on studying the European regulation on this topic since the literature review revealed the necessity of standardization and comparing the ESG rating methodology (Chapter 6).



## Summary of the research products

Part	Chapter	Title	Methodology	Reference
1.	1	<b>The Regulators’ Dilemma and the Global Banking Regulation: the case of the dual Financial Systems</b>	banking regulation and banking law study and taxonomy design	<i>Paper currently submitted and under review</i>
Banks and Banking Regulation in International Financial Systems	2	<b>Islamic Finance Practice and Global Banking Regulation: Does it Matter for Stability and Performance</b>	financial statements analysis and panel data analysis using ANOVA and MANOVA models implemented on STATA	<i>Working Paper presented during a Faculty Research seminar at the Regent’s University London in February 2020 and during the ADEIMF Summer Conference in September 2020</i>
2.	3	<b>Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review</b>	systematic literature review	<i>Paper published on Pacific-Basin Finance Journal – vol. 64, December 2020, 101435 - <a href="https://doi.org/10.1016/j.pacfin.2020.101435">https://doi.org/10.1016/j.pacfin.2020.101435</a></i>
Financial Markets	4	<b>Make the best from conventional and Islamic asset classes. Designing an all-seasons Combined Portfolio</b>	Risk Parity optimization using MATLAB algorithm	<i>Paper published on Journal of Risk and Financial Management – 14(10), 484, October 2021, <a href="https://doi.org/10.3390/jrfm14100484">https://doi.org/10.3390/jrfm14100484</a></i>

				<p><i>Paper published on Technology Analysis and Strategic Management Journal – Special Issue – June 2021 -</i></p> <p><a href="https://doi.org/10.1080/09537325.2021.1939000">https://doi.org/10.1080/09537325.2021.1939000</a>  <i>and presented during the DLT Banking Virtual Conference in December 2020</i></p>
	5	<p><b>The impact of the Blockchain technology on the global Sukuk industry: smart contracts and asset tokenisation</b></p>	case studies analysis	
3. Sustainability	6	<p><b>Comparing ESG Rating: between new European regulation and the Non Financial Disclosure</b></p>	case studies analysis and taxonomy	<p><i>Paper published in Italian language on Rivista Bancaria – Minerva Bancaria – n. 5-6, October-December 2020 - offline. The paper has won the special recognition of the prize “Premio Parrillo – Prime Pubblicazioni” - 2020</i></p>

# Contents

Part 1 - Banks and Banking Regulation in International Financial Systems .....	1
1. The Regulators' Dilemma and the Global Banking Regulation: the case of the dual Financial Systems .....	1
1.1 Introduction.....	2
1.2 Literature and Regulation Background .....	7
1.2.1 Principles of international financial regulation .....	7
1.2.2 Into the Dual financial system: The Islamic Financial System.....	8
1.3 Research Methodology: how to pass the <i>dual</i> financial system definition .....	12
1.4 Results and Discussion .....	17
1.4.1 The Domestic Regulatory Frameworks Review .....	17
1.4.2 International banking standards adoption .....	23
1.4.3 The relationship between IFS architecture and international banking standards.....	26
1.5 Conclusions and further remarks .....	28
2. Islamic Finance Practice and Global Banking Regulation: Does it Matter for Stability and Performance .....	40
2.1 Introduction.....	41
2.3 Research Methodology .....	47
2.3.1 Variables description.....	48
2.3.2 Data and sample composition .....	50
2.4 Empirical Results.....	55
2.4.1 Descriptive statistics.....	55
2.4.3 Correlation analysis .....	58
2.4.4 Anova and Manova models.....	61

2.5	Conclusions and further remarks .....	65
3.	Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review .....	82
3.1	Introduction .....	83
3.2	Islamic and Conventional Stock Market: what differences.....	90
3.2.1	Fundamentals of Islamic Finance and Stock Markets.....	90
3.2.2	Market Reflections.....	91
3.3	Research Design .....	94
3.4	Results .....	98
3.4.1	Population of the sample and data extraction .....	98
3.4.1	Grouping publications and taxonomy.....	105
3.4.3	Taxonomy Discussion.....	107
3.5	Conclusions and further remarks.....	115
4.	Make the Best from Comparing conventional and Islamic Asset Classes. A Design of an <i>All-Seasons Combined Portfolio</i> .....	154
4.1	Introduction.....	155
4.2	Theoretical Background and Methodology .....	160
4.2.1	The All-Weather Philosophy and the DAMS strategy.....	160
4.2.1	The Risk-parity model and the Optimisation Problem.....	163
4.2.2	Data and Sample Selection.....	167
4.3	Empirical Results .....	169
4.3.1	Descriptive Statistics and correlation analysis .....	169
4.3.2	Conventional Portfolio ERC Optimisation.....	171
4.3.3	Combined Portfolio ERC Optimisation.....	176
4.4	Conclusions and further research .....	180
5.	The impact of the Blockchain Technology on the Global Sukuk Industry: Smart Contracts and Asset Tokenisation.....	187

5.1 Introduction .....	188
5.2 Theoretical background .....	192
5.2.1 The Sukuk Industry .....	192
5.2.2 DLTs, Blockchain and Smart Contracts in the Islamic Finance industry.....	194
5.3 Innovating Sukuk Issuances through Smart Contracts and Asset Tokenisation ....	198
5.3.1 Sukuk issuing facilities: starting point .....	198
5.3.2 Smart Sukuk and Sukuk Security Tokenisation: some experiences .....	204
5.4 Conclusions and the way forward.....	209
6. Comparing ESG Rating: between new European regulation and the Non Financial Disclosure .....	217
6.1 Introduzione.....	218
6.2 L'industria dei rating di sostenibilità: definizioni, ruoli ed opportunità.....	221
6.3 Le principali agenzie di rating e la "Sustainability Rating Methodology" .....	228
6.3.1 Standard Ethics Ratings .....	232
6.3.2 S&P Global Ratings – ESG Evaluation.....	234
6.3.3 Thomson Reuters ESG Scores.....	237
6.3.4 MSCI ESG Ratings .....	238
6.4 Un'analisi comparata dei modelli di rating sostenibili.....	240
6.5 L'applicazione della Non Financial Requirement Directive (NFRD): un approccio armonizzato tra imprese e agenzie di <i>rating</i> .....	244
6.5.1 L'integrazione del fattore Environment (E) all'interno del processo informativo della NFRD .....	249
6.6 Un nuovo approccio per l'industria del <i>Rating</i> ESG: tra regolamentazione e vigilanza. ....	258
6.7 Conclusioni .....	269

## List of Tables

Table 1.1 Sample Composition .....	16
Table 1.2 Distribution of the sampled countries along with the taxonomy .....	23
Table 1.3 Financial Systems architecture and international standards relationship .....	27
Table 2.1 Sample description .....	52
Table 2.2 Descriptive statistics (original data) .....	57
Table 2.3 Descriptive statistics by Financial System Architecture (after winsorisation) ...	59
Table 2.4 Correlation Matrix Total .....	60
Table 2.5 ANOVA and MANOVA Summary .....	63
Table 3.1 Summary of literature review on Islamic Finance.....	88
Table 3.2 Number of publications and citations/year (Web of Science) .....	99
Table 3.3 Number of publications and citations/year (Scopus) .....	100
Table 3.4 Database Journal list.....	101
Table 3.5 A taxonomy of Islamic Stock Market versus Conventional Stock Market Analysis .....	105
Table 3.6 Identification of further research.....	117
Table 4.1 Inflation-growth polarisation plan main findings.....	162
Table 4.2 Sample composition .....	168
Table 4.3 Descriptive statistics of asset returns.....	170
Table 4.4 Correlation matrix of asset returns (April 2011 – December 2020).....	171
Table 4.5 The performance of the Conventional Portfolios. ....	173
Table 4.6 Asset marginal weight contribution to the Conventional Portfolios.....	174
Table 4.7 Assets' marginal risk contributions (MRCs). ....	174
Table 4.8 The performance of the Combined Portfolios.....	177
Table 4.9 Asset marginal weight contribution to the Combined Portfolios. ....	177
Table 4.10 Assets' marginal risk contributions (MRCs). ....	178
Table 5.1 Main type of the blockchain.....	194
Table 5.2 Connecting Sukuk Demand Side criticism and Smart Contracts Benefits .....	205
Table 6.1 Il rating di sostenibilità dal lato della domanda.....	222
Table 6.2 CRAs vs SRAs: le raccomandazioni dell'HLEG.....	225
Table 6.3 Tipologia di Rating e Modello di Business utilizzato dalle SRA .....	227
Table 6.4 Elenco delle principali Sustainable Rating Agencies (SRA) .....	231
Table 6.5 I 12 fattori ESG utilizzati per la valutazione dell'ESG Profile di S&P Global Ratings.....	236
Table 6.6 Fattori di valutazione della long-term Preparedness di S&P Global Ratings ...	236

Table 6.7 Tematiche oggetto di analisi per l'individuazione del Thomson Reuters ESG Scores.....	237
Table 6.8 MSCI ESG Key Issue Scores & Weight .....	239
Table 6.9 Raccomandazioni sulle informazioni non finanziarie distinte in base alle 4 aree tematiche .....	244
Table 6.10 NFI: modello di business .....	251
Table 6.11 NFI: politiche applicate e processi di dovuta diligenza.....	252
Table 6.12 NFI: outcomes.....	252
Table 6.13 NFI: risks and risk management .....	253
Table 6.14 Indicazione di alcuni KPIs .....	255
Table 6.15 Mappatura delle corrispondenze tra NFRD e raccomandazioni TCFD.....	259
Table 6.16 Non Financial Requirement Directive (TCFD alligned) .....	267

## List of Figures

Figure 1.1 IFS structures: taxonomy framework.....	17
Figure 3.1 Growth per year (Web of Science and Scopus) .....	100
Figure 3.2 PRISMA 2009 Flow Diagram for the included studies .....	104
Figure 3.3 Taxonomy grouping category in main objective area.....	107
Figure 4.1 Quadrant of the Macroeconomic Scenario.....	162
Figure 4.2 Business Cycles 2011-2020.....	168
Figure 4.3 Conventional Portfolios Returns (in-sample w=244; out-of-sample w=262) ..	175
Figure 4.4 Conventional Portfolios Returns (in-sample w=130; out-of-sample w=132) ..	175
Figure 4.5 Combined Portfolios Returns (in-sample w=244; out-of-sample w=262) .....	179
Figure 4.6 Combined Portfolios Returns (in-sample w=130; out-of-sample w=132) .....	179
Figure 5.1 Smart Contract and Blockchain scheme .....	197
Figure 5.2 Ijarah Sukuk Structures .....	200
Figure 5.3 Mudarabah Sukuk Structures .....	201
Figure 5.4 Murabahah Sukuk Structures .....	202
Figure 5.5 Conventional Bond and Sukuk basic structure.....	203
Figure 5.6 Ijarah Smart Sukuk easy structure .....	207
Figure 6.1 Classi di rating utilizzate da Standard Ethics.....	234



# **Part 1 - Banks and Banking Regulation in International Financial Systems**

## **Chapter 1**

### **The Regulators' Dilemma and the Global Banking Regulation: the case of the dual Financial Systems**

---

**Abstract:** This paper aims to contribute to the literature debate on the regulators' dilemma affecting international financial regulations, focusing on the banking regulation of the dual financial systems. In doing so, the paper provides a new taxonomy of Islamic Financial Systems considering the banking regulation as a driver for the classification and a more detailed definition of dual financial systems. Literature review reveals the existence of different financial system structures affected by socio-cultural biases due to different characteristics of different countries and financial systems globally. The risk of regulatory

---

arbitrage or over-regulation phenomena is high, stifling the growth and the level playing field for both some systemically financial systems.

## 1.1 Introduction

*“Regulation is necessary, particularly in a sector, like the banking sector, which exposes countries and people to a risk.”*

*Christine Lagarde, International Monetary Fund Chair, 2011*

∞

Banks move in a rich and highly controlled environment facing, at the same time, the evolution of the existing framework and ever new changes due to the revolution in the way of banking. Generally, the net benefit of regulation for both micro and macro level, direct and indirect, is positive, justifying the existence of regulation itself. According to Kern (2019), the public interest theory of regulation suggests that policy and regulatory intervention can be undertaken to face negative externalities arising from market distortion and regulatory arbitrages. On the opposite, Stigler (1971), belonging to the private interest theory, believes *regulation is designed and operated by industry primarily for its own benefit*. Thus, banking regulation is undoubtedly necessary to ensure the equal level playing field inside and between financial systems, guarantee the banking systems soundness and resilience, and the ordered outgrowth of developing countries and emerging economies (Carstens, 2018 - BIS; Kahn, 2011; Pop, 2006). In this regard, more than twenty years have passed since the first wave of global banking regulatory reforms has profoundly changed the regulatory landscape, and a lot has happened. The last global financial crisis revealed the financial system regulatory and supervisory framework's weaknesses worldwide, and the global banking system *un-resilience* (Hassan and Mollah, 2018; Johnes et al., 2014). The crisis also highlighted the need to complement micro-prudential banking regulation with a

macro-prudential regulation designed to address systemic risks and the imperative to converge towards a global regulatory framework (Boissay and Cappello, 2014 - ECB). By the way, there is no doubt that after the financial downturn in 2008, the set of strict rules to comply has improved banks' capacity to absorb losses and face liquidity turmoil. Banks are more resilient to unexpected events and potential downturns than in the past.

Undercapitalised and poorly supervised banks led to excessive risk-taking, often using speculative and highly volatile financial products (Saunders and Walter 2012; Andries, 2009; Strock et al., 1998). For a long time, deregulation and liberalisation have contributed to creating a riskier financial system, as proven by empirical evidence (Fratianni and Pattison, 2002). Nevertheless, the banking systems' brittleness must be pursued right in this essence of the primary banking activity, the collection of savings, and credit granting. Hence, the banks are imperfect due to their primary scope of assuming and managing risks. It is necessary to find the right balance between capital requirement and profitability (Tutino, 2018; Van den Heuvel, 2006; Avgouleas and Goodhart, 2015; Hancock et al., 1992). As international Basel banking standards, the international soft regulation could have a different impact than those expected without preserving banking systems from systemic risk, and the last financial crisis is self-evident. It has raised scepticism about the effectiveness of existing approaches and the relationship between good regulation and bank soundness with no clear evidence that a set of common international standards is universally appropriate. Recent debates on financial regulation theory suggest policy and regulatory intervention could generate systemic distortions if not properly calibrated (Dermigüç-Kunt and Detragiache, 2011). Following the level playing field's aim, new macro and micro-prudential approaches have to consider *socio-cultural* bias and regulatory bias linked to domestic underpinnings, local Governance, financial system or economic conditions. Two issues linked together are quickly detectable. Firstly, Basel members have chiefly developed countries with highly advanced financial systems. This implies that the Basel Committee on Banking Supervision (BCBS) failed to produce effective regulations and

---

supervision since Basel members developed international regulations without consulting developing countries and emerging economies, not members of the Basel Committee (Kern, 2019). On the other side, international financial soft law, as international Basel standards, affects the domestic regulatory system amending national regulation practice. Countries as “Basel observers” could not fully receive international standards contributing to generating regulatory arbitrage phenomena since financial institutions could be interested in operating in those countries weakly regulated, creating financial instability conditions and sloppy outgrowth.

Therefore, a series of observations raise considering the existence of different financial system ranges influenced by different countries histories and domestic legal and institutional framework. The Islamic Financial System (IFS) is one of them since it refers to financial activities guided by Islamic law fundamentals (Shariah) (Hassan and Aliyu, 2018). Shariah refers to *a code of law or divine injunctions that regulate the conduct of human beings in their individual and collective lives* (Ayub, 2007). Thus, the Islamic finance model roots in different principles and characteristics than the conventional one (*socio-cultural bias*). Making some considerations about the IFS, some biases and issues arise, nourishing a different perspective of the regulators' dilemma and contributing to the literature debate. Notably, the regulator's dilemma concerns the conflict between the international banking framework proposed by BCBS (universally adopted) and the domestic banking law in force within different countries, leading to regulatory bias, gaps, or *over-regulation* phenomenon. Basel banking principles and standards have been thought and built for the “conventional” and “western” financial system implementation and main developed countries (IMF, 2017; IFSB, 2015; Zaher and Hassan, 2001). As mentioned before, these standards' impact could be different from those attended due to the different underpinnings of single banking systems as those dominated by ethical and religious constraints. These distortions are amplified in those financial systems characterised by parallel regulation, as the Islamic ones, where the domestic conventional banking law coexists together an Islamic

banking law governing the Islamic banking business, activities, services, and products and already suffering a domestic problem of standardisation. Globally, the regulatory conflict is dominated on the one hand by the need of Islamic banks, ever more globalised, to be compliant with Basel regulation universally accept but *conventional* designed. On the other hand, Islamic countries and regulatory authorities push banking systems to comply with the Islamic standardisation process. Thus, the typical *top-down* approach of international soft regulation should increase regulatory bias and gaps and an *over-regulation* risk, increasing the vulnerability and stifling the growth and the level playing field for both some systemically financial systems as the Islamic one but also globally (IMF, 2017). According to Beck et al. (2002), these observations draw the attention to two theories historically affected by financial development: the endowment theory, which emphasises *the roles of geography and the disease environment in shaping institutional development* and the law and finance theory which is based on country's legal tradition. Law and finance supporters believe that *historically determined legal tradition differences help explain international differences in financial development*. In this context, the dual financial systems architecture study offers a different perspective representing a deal-breaker for the regulator's dilemma. Although the literature does not provide a uniform and shared definition of a dual financial system, a first definition refers to those systems where a double regulation is in force, splitting the financial system architecture. Thus, many countries worldwide adopt a different framework to regulate the financial system (as in the United States, where national banks and state banks are chartered and supervised differently). However, the dual financial system's peculiarity is the unbundling of both the whole system and single components. In this background, the Islamic Financial System represent a good landscape to study the regulator's dilemma. Referring to the Islamic Financial System, in 2019, the IMF first defined a *dual* system, *where both conventional deposit-takers and Islamic Deposit Takers coexist*, including stand-alone entities, subsidiaries of conventional

---

banks or “Islamic Windows”.<sup>1</sup> The last paragraph reveals some bias that may be self-evident above all in those financial systems as the IFS founded on *ethical-religious* underpinnings. Overcoming the regulatory, *socio-cultural*, and country bias, this paper provides a new taxonomy of the financial system focusing on the dual financial systems from a banking regulatory perspective. Thus, this paper aims to contribute to current literature about the international banking regulation and the regulators’ dilemma since the banking systems constitute a column of the global financial system and intermediation. As said before, the IFS is a good proxy since many countries have a double banking law to regulate the Islamic and the conventional banking system. According to Zaher and Hassan (2001), which summarises the Organization of Islamic Cooperation (OIC) countries’ existing regulation and following the IMF (2019) mapping of the IFS architectures, the taxonomy selects a sample of countries considering each banking/financial system’s fundamental elements. It starts with the domestic banking law and regulation systematically reviewing and examining them, considering their relationship with the Basel Committee affiliation (applying the Basel Committee’s Core Principles) and the financial system architecture. Thus, considering the regulatory driver, a more accurate financial system taxonomy could help policymakers fathom the effects of international regulation, as soft banking regulation. The taxonomy allows capturing endogenous variables affecting the international standards and fuelling the regulators’ dilemma. In this way, this paper aims to contribute to reshaping the international regulatory *top-down* approach and debate from a different perspective.

The remainder of this paper is organised as follows. Section 2 presents the literature and regulation background focusing on international regulation principles and Islamic Financial System main features, and in section 3, the financial system taxonomy is presented. Section 4 presents the discussion of the taxonomy with some observations.

---

<sup>1</sup> IMF (2019). Financial Soundness Indicators Compilation Guide,  
<https://www.imf.org/en/Data/Statistics/FSI-guide>

Finally, we highlight and discuss the findings, results from implication, and future remarks in the conclusions.

## **1.2 Literature and Regulation Background**

### **1.2.1 Principles of international financial regulation**

The international financial architecture is founded on a balance between a set of essential elements. In this brittle balance, regulation and prudential supervision of banks and financial intermediaries in general play a challenging but significant role (Saunders et al. 1990; Beddoes, 1999). The frequency and severity of the global financial crisis (firstly the most famous 2007-2008 and then the sovereign debt crisis in Europe in 2011) have fuelled calls for a radical change of the whole global banking and financial system. Banking regulation has to prevent a bank's failure to spread to healthy institutions and protect and reassure bank depositors. Therefore, the international regulation and supervision approach followed by the Bank for International Settlement (BIS) and by its committee (BCBS) could be and is today the most promising (Barth et al., 2013; Saunders et al., 2015). The goodwill has conceived these international agencies to develop financial stability, adopting measures to improve the system and financial markets (Financial Stability Board, 1999, BCBS - BIS, 1974), promoting cooperation between central banks and other equivalent agencies. Inevitably, new banking regulation affects profitability, especially with more attention to capital requirements (Resti, 2008). Consequently, it follows that financial regulation has increased significantly, leading the way towards the best stable, efficient, and resilient financial system. However, it is hard to understand if the regulation will ever eliminate the odds of a future crisis. The literature increasingly focuses on the impact analysis of the new Basel regulatory standards on banking systems, regarding their influence in the risk and

---

regulatory capital management (Al-Hares et al., 2013; Farooqi and O'Brien, 2019, Zins and Weill, 2017; Bitar et al. 2018). The biggest challenge for prudential supervision remains to create an ideal financial system. According to Merton (1995), following the *functional perspective* in the financial intermediation analysis, it is crucial to recognise the best institutional structure to perform the related economic functions. The financial functions are more stable than financial institutions, which can change across countries histories and their legal and law institutional framework. Nevertheless, the financial institutions' competition (in bank business, for example) could cause a change in the institutional structure, contributing to improving the financial system's efficiency. Finally, Merton believed that the most efficient institutional structure for fulfilling the financial system's functions generally changes over time *differs across the geopolitical subdivision*. Indeed, it is not simple or maybe possible to find the answer since an *all-season* efficient system, for all different financial architecture, might not exist.

### 1.2.2 Into the Dual financial system: The Islamic Financial System

In 2016, the Financial Stability Board classified Islamic Banking as systemically important since it operates in more than 60 countries and 14 jurisdictions, concentrated in the Middle East and South-East Asia. Besides, countries operating in the IFS often match developing countries and emerging market economies (Hassan and Mollah, 2018).<sup>2</sup> The IFS is founded on the profit and loss sharing system linked to real assets or real economic transactions (because of *gharar*) and the prohibition of payment and receipt of *usury* (*ribah*). It is not a *debt-based* system, but it is more *asset-based* (Hassan and Aliyu, 2018). These ethical and religious underpinnings completely affected the institutional and legal architecture of those “Islamic countries” make strongly different Islamic banks' activity, as

---

<sup>2</sup> The IFSB defines the Islamic Banking systemically important if it represent 15% or more of total banking system asset.



banks operate compliant with the Shariah law. Thus, banking regulation is also needed in IFS for many reasons, ensuring compliance with Shariah and providing a level playing field in the international markets (Hassan and Dicle, 2005). Therefore, the Islamic Banking System needs to adopt additional rules compared to conventional banks' use (regulatory bias). However, previously considerations explain that Islamic Banks themselves operates in a highly tricky regulated environment spoiled by some biases. They cannot be limited to universally apply international regulatory standards as those issues by the BCBS (Bitar et al., 2020) since they do not consider conventional banks' distinctive characteristics compared to the Islamic. International financial soft law, as BCBS standards, affects the domestic regulatory system influencing local regulation practice. By the way, they are designed from “conventional” policymakers and generally not suitable for some financial systems as the Islamic one, not an *interest-based* system. Moreover, the application of international soft regulation to Islamic banks without targeted amendments may not consider the full spectrum of Islamic banking specific risks (IMF, 2017). Therefore, while the conventional banking (and financial) system is well-regulated in all aspects, the Islamic one is already too young and fragmented (Tariq, 2015). The Islamic Banking and Finance is related to a lack of harmonised rules and regulations and the non-uniformity in those countries offering Islamic banking products and services (Hassan and Mollah, 2018). It probably represents the major issue. Products fully allowed in one country, such as the repurchase agreements (*Quard Innah*), are fully acceptable in the far East, whereas it is not permissible in other Muslim countries. This lack of standardisation is due to different interpretations of the Shariah, arising from the various keys to understanding the Islamic law from many Muslim scholars (Zaher and Hassan, 2001; Smolo and Habibovic, 2012; Tahir-ul-Qadri, 2019; Yaacob and Abdullah, 2012, Hussain et al., 2015). Therefore, the result is that the Islamic Financial System is already exposed to a “*Shariah arbitrage*” phenomenon, additionally to traditional regulatory arbitrage (Zulkhibri and Ghazal, 2014). The lack of standardisation is also why it is not correct to carry out banking performance

---

and stability analysis without considering different countries regulation landscapes. Legal requirements can influence the banking business structure, profitability, and strength (Zulhibri and Ghazal, 2014). The first step toward the Islamic legal standardisation and the internationalisation of Islamic banks began in 2002 when the Islamic Financial Services Board (IFSB - an international organisation grouping several Islamic banks and banking authorities) started with common prudential standards developed for Islamic banks and financial products. They continued in 2015 since they adopted a set of Core Principles for the Regulation and Supervision of Islamic banking complementing the BCBS's existing principles. The IFSB encouraged members to use the principles as a *benchmark to assess their regulatory and supervisory systems' quality and identify future work to achieve a baseline level of sound regulations and Islamic finance practices* (IFSB, 2015). These principles are complementary to those of BCBS, but they consider peculiarities of Islamic banks business model as the treatment of Profit-Sharing Investment Account (PSIA) and Investment Account Holders (IAHs), Shariah governance framework or *Islamic Windows* operation. However, a previous study of the IMF in 2017 registered a lack of consistent application of international standards since about 60 countries have modified domestic frameworks to accommodate Islamic banking, but in most of the countries, they are optional. Finally, international soft regulation cannot overlook previous issues, and literature studies focused on comparative analysis could consider the variable “financial system” linked to differences in the regulatory environment. Previous literature contributions are also traditionally marked by a global empirical analysis that considers countries with different historical and geopolitical trim and, above all, different ethical underpinnings (Ajmi et al. 2014; Hammoudeh et al. 2014; Johnes et al., 2014, Beck et al. 2013). The last literature review on the Islamic Banking industry reveals several contributions to Islamic and conventional banks (Hassan and Aliyu, 2018). Most contributions focus on *i*) the last global financial downturn which affected differently Islamic and Conventional banking system (Johnes et al., 2014; Abedifar et al., 2013; Farooq

and Zaheer, 2015; Hassan and Sirajo, 2018, Alam et al. 2019; Alqahtani and Mayes, 2018), *ii*) the Dual financial system - as a system where Islamic Finance operates alongside their Conventional counterparts - (Salman and Nawaz, 2018; Ryu et al., 2012; Ajmi et al. 2014; Hammoudeh et al. 2014; Johnes et al., 2014, Beck et al. 2013), *iii*) the impact of Basel III Standards on the banking system without considering the divergence in financial system architecture (Al-Hares et al., 2013; Farooqi and O'Brien, 2019, Zins and Weill, 2017; Bitar et al. 2018; Harzi, 2012; Hidayat et al. 2018).

Finally, summarising the theoretical background, some strictly related remarks raised affecting the regulators' dilemma: *i*) the need and the value of the international financial regulation, particularly in the banking sector riskier and more strategic, *ii*) by scholars, growing attention to the impact of international regulation on banking business, performance and soundness, *iii*) a closer emphasis to the Islamic Financial and Banking System, as the most widespread and systemically relevant dual financial system, *iv*) the common opinion that international soft regulation, as the Basel standards, failed to produce effective regulations and supervision at global level, until now, *v*) the existence of some *biases* and gaps due to the different financial systems characteristics affected by countries history, geopolitical issues and domestic legal and institutional framework. This study aims to contribute to current literature about international banking regulation and the regulators' dilemma in this context. Previous paragraphs provide a prior definition of the dual financial systems referring to systems where a double regulation is in force since current literature has not yet defined it. However, following the IFS' principles, the dual financial system cannot be merely defined as a *binary* concept since different interpretations of ethical and religious underpinnings exist for Islamic law. Starting from the IMF (2019) definition of IFS, the taxonomy extends the Islamic Financial System architecture's *binary* concept. Different interpretations may affect domestic financial systems architecture and legal framework with various dual financial system shades because the Islamic law affected cultural, historical and legal country framework. A new

---

financial system taxonomy focusing on dual financial systems and based on banking regulatory perspective could help policymakers fathom and assess international regulation's effects, as the banking soft regulation, within different domestic systems. Differences in countries characteristics generate endogenous variables affecting international soft regulation as the Basel banking standards. In this way, this paper aims to contribute to reshaping the international regulatory *top-down* approach and debate from a different perspective.

### 1.3 Research Methodology: how to pass the *dual* financial system definition

This paper provides a new taxonomy of financial systems focusing on the “dual” financial system's different perspective with the aim of contribute to the debate about the regulators’ dilemma in those financial systems. Previous paragraphs drew attention to international banking standards since banks’ leading role in financial systems intermediation contributed to globalisation. According to Karmann (2000), banks and banking regulation as part of the legal system are essential determinants of a financial system. The literature review highlights that the IFS and Islamic Banking are dominated by *ethical* and *religious* constraints leading by the Shariah involving country legal and institutional architecture. Moreover, literature contributions identify the dual financial systems following a *binary* approach, defining them as those systems where conventional institutions and Islamic institutions coexist without considering different countries’ legal frameworks. As a matter of fact, the IMF (2019) mapping the Islamic Financial System structure into two categories:

- The *dual* system, as a financial system where a double regulation is in force and the conventional and Islamic institutions coexist. The Islamic institutions, as Islamic

Banks, could be represented by *stand-alone entities*, subsidiaries of the conventional, or “Islamic Windows”;

- the *full-fledged* Islamic financial system, where the conventional practices are not allowed, and financial business must be only compliant with the Shariah.

However, it is pretty important since the lack of standardisation affects IFS due to Shariah's different interpretations may influence socio-cultural issues. Indeed, in *Islamic-based* countries, public and private institutions (including authorities and regulators) internally constitute a *Shariah Supervisory Board*, consisting of a *board of experts* of Shariah and Islamic practices, which can provide an opinion on products services, or businesses (Hassan and Mollah, 2018). Conversely, other countries that did not find a legal environment on Islamic law leave free interpreting the Shariah without separating the Islamic Banking practices. These countries could not be included in the *binary* definition of the dual financial system. Thus, it is possible to order different financial system structure shapes, considering different legal frameworks and Shariah interpretation. The taxonomy proposed aims to extend the *binary* definition identifying a more granular level in the dual financial system structure classification. Mainly, the taxonomy uses the domestic banking law as a discriminating driver to classify the financial system, dwelling on international banking regulation as Basel standards implementation. A clearer picture of the financial system's organisation, as it happens with dual, may help authorities identify the capability and efficiency of adopting international banking standards. In line with the aim stated above, the research methodology identifies countries with conditions for developing dual financial systems, as in the Islamic Financial System. These financial systems and countries typically match with Muslim-majority countries, where there is the possibility of finding a specific domestic Islamic banking law. The research focuses on international financial systems adopting international banking standards and international economic and financial organisations to identify countries adopting Islamic finance and banking practices.

---

Therefore, referring to the objective, the first step aims to identify those countries in which the banking system is systemically significant globally, checking among those countries members of BCBS, representing the 28 jurisdictions covering 90% of the world's banking assets.<sup>3</sup> The sample also includes Malaysia and the United Arab Emirates (UAE) as observer members of the Basel Committee.<sup>4</sup> Secondly, the sample selection focuses and compare with those countries wherein the IFS presence has spread, by considering those jurisdictions members of the Organization Islamic Cooperation, the Arab League and the IFSB (as the Islamic counterpart of the BCBS), to consider Muslim-majority countries. Thus, the sample cross-checks shows that:

- According to the IFSB Report 2020 and the State of the Global Islamic Economic Report 2019/20, some BCBS/IFSB members are included in the top 10 countries by Islamic finance assets and banking (2019): Malaysia, UAE, Saudi Arabia, Indonesia, and Turkey. Singapore is in the top 15. India and Brazil are only observers of the Arab League, but there are no Islamic banks in Brazil. However, Iran and Sudan, the most important Islamic countries leading Islamic finance, are not BIS and BCBS members and do not apply Basel standards, but they are included since their leadership role in Islamic banking and finance globally, and Iran is the first in the top 10 rankings of IFSB.
- As one of the most relevant banking systems, the European Union is not a major Islamic international organisation member. However, some European countries are working in “Islamic finance” activities: the first European Islamic bank operates in

---

<sup>3</sup> BCBS, RCAP on consistency: jurisdictional assessments,

[https://www.bis.org/bcbs/implementation/rcap\\_jurisdictional.htm](https://www.bis.org/bcbs/implementation/rcap_jurisdictional.htm)

<sup>4</sup> Malaysia and UAE central banks, as banking supervisor authorities, are full members of the BIS but they are outside observers on the BCBS. They implement Basel standards voluntary.

Germany, and the Federal Financial Supervisory Authority of Germany (*BaFin*) is an associate member of the IFSB; France holds the highest number of Islamic banks in the EU, with eight banks offering Shariah-Compliant products and services. United Kingdom (ex-EU Member - 2020) is an associate member of the IFSB and has more Islamic banks and lenders than any other Western country. Finally, as advanced financial services countries, Luxembourg and Ireland are leading Islamic fund centers in Europe. Luxembourg central bank is the first European Bank associate member of IFSB.

Thus, the final sample consists of 10 countries representing advanced and developing conventional and/or Islamic banking systems. These countries are summarised in Table 1.1, considering the Islamic Finance Country Index (IFCI) provided by the Cambridge Institute of Islamic Finance.<sup>5</sup> The IFCI is the oldest index for ranking different countries concerning Islamic banking and finance. The countries selected represent a data sample that includes different taxonomy classes and different grades of the Shariah-compliance.

---

<sup>5</sup> Global Islamic Finance Report 2020, Cambridge Institute of Islamic Finance, <http://gifr.net/publications/gifr2019/ifci.pdf>

Table 1.1 Sample Composition

Country	Bank Assets (million USD - 2019)	Bank Assets %GDP (2019)	Bank Credit to private sector %GDP (2019)	State Bank Ownership (in top 5)	Islamic Banking	IFSB Ranking 2020	IFCI 2019	Global Relevance (IFCI)	Membership in international organisations			
									BCBS	IFSB	OIC	Arab League
<i>India</i>	2.290.000	80%	50%	5	Yes	-	35	-	Full Member	-	-	Observer
<i>Singapore</i>	1.024.000	275%	121%	1	Yes	-	29	-	Full Member	Full Member	-	-
<i>EU</i>	38.208.593	245%	85%	-	Yes	-*	-*	-	Full Member	*	-	-
<i>Turkey</i>	700.000	92%	62%	1	Yes	20	13	Moderate	Full Member	Full Member	Full Member	-
<i>Saudi Arabia</i>	701.635	88%	n.a.	2	Yes	3	4	Exceptional	Full Member	Full Member**	Full Member	Full Member
<i>Malaysia</i>	n.a.	n.a.	121%	2	Yes	6	2	Exceptional	Observer	Full Member	Full Member	-
<i>UAE</i>	832.410	198%	75%	4	Yes	8	7	Exceptional	Observer	Full Member	Full Member	Full Member
<i>Indonesia</i>	627.600	56%	32%	3	Yes	18	1	Highest/Exceptional	Full Member	Full Member	Full Member	-
<i>Iran</i>	869	n.a.	n.a.	n.a.	Yes	1	3	Exceptional	-	Full Member	Full Member	-
<i>Sudan</i>	n.a.	n.a.	10%	n.a.	Yes	2	5	Exceptional	-	Full Member	Full Member	Full Member

\*Only Germany and Luxemburg are Associate Members. Al-Rajhi Bank (Saudi Arabia) is the first world Islamic bank, Dubai Islamic Bank (UAE) the second one, and Maybank (Malaysia) the fourth are state-owned banks. Source: authors' own compilation. Data: World Bank, Islamic Financial Services Board (IFSB), Islamic Finance Country Index (DDCAP Group)

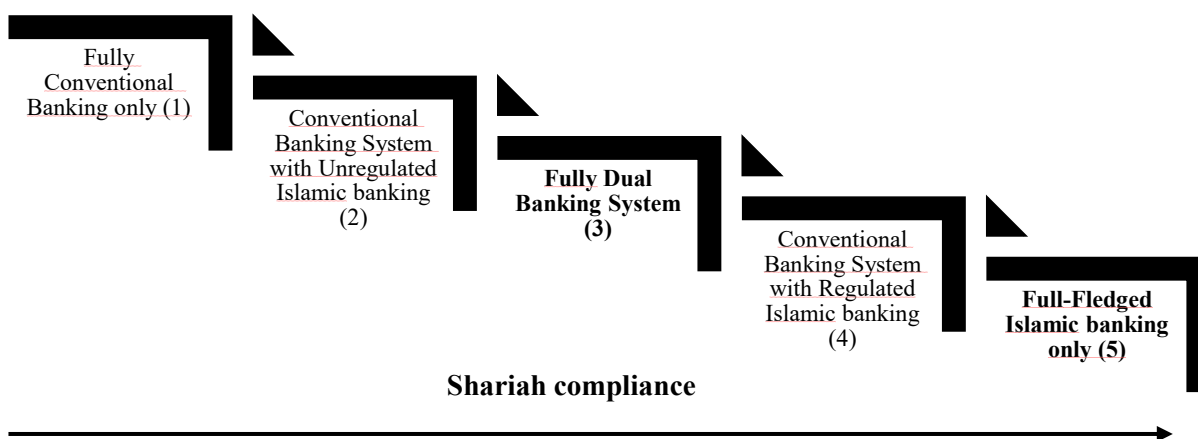


## 1.4 Results and Discussion

### 1.4.1 The Domestic Regulatory Frameworks Review

This paragraph lies in a regulatory review, examining banking law and fundamentals of the selected countries, focusing on Islamic Banking and practice, to build the taxonomy. Previous paragraphs highlighted the lack of a standard definition of the dual financial system and the opportunity to extend the *binary* definition, like the IMF's. Systematically analysing and examining countries' domestic banking law in the sample, this study identifies five different shapes of the banking system structure ordered according to their “*Shariah-Compliance*”, displayed in Figure 1.1 and referred below. The taxonomy extends the *IFS structures' binary definition* (detected in classes 3 and 5), filling its granularity gap.

**Figure 1.1 IFS structures: taxonomy framework**



Source: authors own compilation

Notably, the first-class (1) identifies as "*Fully Conventional Banking only*" system. This kind of financial system structure provides a specific definition of the banking business, not allowing the Islamic Banking business. It is the case of India, where recently, the central bank (as the regulator and supervisory authority of the banking system) has decided to not pursue a proposal for the introduction of interest-free banking in India after considering

---

*the wider and equal opportunities* available to all citizens to access to banking and financial services. Thus, the Reserve Bank of India does not grant the licence for banking activity if it consists of *interest-free* banking business since it is different from conventional banking activity. However, India's Muslim population is about the world's third-largest estimate in 195 million people in 2020<sup>6</sup>, and on the sidelines of the debate, the Indian central bank has recently started to consider opening "Islamic windows" in conventional banks for a gradual introduction of *interest-free* banking in the country. Nevertheless, the *Fully Conventional Banking only* system is considered a *Shariah non-compliant* system under the regulatory perspective not included in the IMF map of the IFS' structures since it is not possible to carry out Islamic banking. Therefore, we define class (2) as "*Fully Conventional System Unregulating Islamic Banking*". Generally, in this financial system architecture, the banking law and regulation not referring to the Islamic banking business, identifying a neutral position to Islamic practices. However, following the taxonomy regulatory perspective, in this category, it is possible to locate some features discoverable with two examples, identifying different shades:

- *Fine-tuning approach*: Singapore is a *fully* conventional financial system currently has no specific law on Islamic Finance. Moreover, the Singaporean government and the Monetary Authority of Singapore (MAS), as central bank and banking authority, have adopted a "*fine-tuning approach*" to accommodate Islamic and conventional banking within a common legal framework. Thus, the aim is to integrate the Islamic Banking system into the current financial system rather than making a new separate regulatory framework. The MAS has started this process by issuing in 2009 the "*Guidelines on the Application of Banking Regulations to Islamic Banking*" to facilitate the growth of Islamic Banking. In the end, along with the Conventional

---

<sup>6</sup> United Nation, Revision of the World Population Prospect 2019, <https://population.un.org/wpp/>

banks, Islamic banks can carry out the banking business observing the same requirements enshrined in the Banking Act and under prudential supervision by the MAS (Ginting et al., 2019).

- *No objection to Islamic banking:* in this subcategory, it is possible to include two examples that could appear completely different, but they are very similar to the law and regulation point of view. Sure, Saudi Arabia is known as one of the most famous Muslim countries globally since it is founded on Islamic law, affecting political, economic, and social lives. Unexpectedly, Saudi Arabia banking system is regulated by the Banking Control Law act of 1966, without any references to Islamic Banking. Saudi Arabia does not explicitly recognise the concept of Islamic banking, but the Islamic Banking business is allowed in all shapes and cannot be assimilated with the conventional. Islamic Banks can carry out the business based on Shariah principles merely following the general banking regulation. Thus, Saudi Arabia banking law considers Islamic banks as *stand-alone* entities, and Islamic banking cannot be “a part” of the conventional bank. Suddenly, in the same way, we can consider the Islamic Banking business in the European Union. The EU and the European Banking Union law and regulation officially do not prohibit the Islamic Banking business, noting that Islamic banks already exist in some countries like Germany and France. In these circumstances, each country could grant the banking business license considering the domestic banking law. Islamic banks can carry out *interest-free* banking activities in these countries that comply with domestic banking law.

According to the IMF map of the IFS structure above, the dual financial system definition may not include these conventional financial systems because, in these systems, Islamic banking is allowed but not regulated. Generally, in this kind of financial system, Islamic banking business is conducted under the conventional banking licence. This kind of financial system can be defined as Shariah-compliant since it is possible to carry out

---

banking business comply with Islamic law. Thus, we identify the class (3) as "*Fully Dual Banking System*". This kind of financial system structure is the only correspondent with the definition of the IMF. The dual financial system can not merely be defined as a financial system where IFS operates alongside its conventional counterparts. In the *dual* structure, the IFS and the conventional counterpart coexist side-by-side since the national financial authority totally separates the financial system from the law, regulation, banking and financial business, sovereign funding, and monetary market. Accordingly, we identify the Malaysia financial system as the world only dual financial system (at least in the developing economies). Notably, the "*Central Bank of Malaysia Act 2009*" regulates the central bank, promoting monetary and financial stability. Sub-session 27, Chapter 1, Part VI defines the dual financial system in Malaysia, consisting of the IFS and the conventional. In this country, the regulatory framework includes Islamic banks as *stand-alone* entities or subsidiaries of conventional institutions, with specific regulation and banking licenses. As a matter of fact, in the Central Bank Act, the national authority nominated a Shariah Advisory Council as well as a sub-authority to ascertain Islamic law for Islamic financial business (defined compliant with the Shariah). The central bank splits Islamic Money Market Operations to ensure compliance from the Shariah perspective to ensure enough liquidity for the Islamic interbank market's efficient functioning. The liquidity is managed by the *Commodity Murabahah Programme* (crude palm oil-based) and longer-term liquidity management. Islamic Banking and Takaful are under their separate regulation. Afterwards, the *Islamic Financial Services Act 2013* provides for the regulation and supervision of Islamic financial institutions, payment systems, and other entities to promote financial stability and compliance with the Shariah. Thus, by reviewing domestic financial regulation and banking law among most developed international banking systems and economies, Malaysia financially complies with the dual financial system's IMF definition. It is a unique case in which a national authority and government recognise the *financial system's duality*.

Class (4) "*Conventional Banking System Regulating Islamic banking*" is halfway between the previous one and the "*Full-Fledged Islamic Banking only*". Notably, this architecture is different from that *dual* since the financial system is not fully separated into two parallel structures. Once again, the IMF definition of IFS map the dual financial system as a *binary* concept. However, several financial systems are qualified as conventional ones regulating Islamic banking with appropriate banking law and licence in different ways, which cannot be assimilated with the *fully dual*, identifying a *hybrid* structure. Looking at countries in the sample, Indonesia, UAE, and Turkey fit good with this class. In the first case, *Syariah* (Islamic) banking is regulated by the Indonesia Government act of 1998, allowing Commercial and Rural banks to base their activity on conventional and/or *Syariah* principles. In this way, Conventional and Islamic banking have single common regulation, supervised by the Central Bank. Thus, Act n.21 of 2008 enhanced the Islamic Banking regulation, better defining the *Syariah* (Islamic) banking and Business Unit. This act allows to carry out Islamic Banking as a part (business unit) or a branch of the Conventional banking or "*full-fledged*". Shariah principles are verified by the Indonesian Ulama Council, which recommend the banks Shariah Supervisory Boards. Bank of Indonesia also released a codification of Islamic banking products well defined the different contracts. Thus, Indonesia's framework is a conventional financial system that has regulated Islamic banking and licenses with a specific domestic law but is not comparable with the previously *Fully Dual Banking System*. Islamic banking cannot carry out with *stand-alone* entities or Islamic windows but only in conventional banks' subsidiaries. In UAE, Islamic banks and Investment Companies are regulated by the Federal Law n.6 of 1985. They shall mean those whose articles and statutory law includes a commitment to abide by the provision of the Shariah. Thus, Islamic banks shall have the right to carry on all or part of banking, commercial, financial and investment services and operations. The higher supervisory function is assigned to the Higher Shariah Authority, formed by a cabinet decision, incorporating Shariah, legal and banking personnel. This authority, related to the Ministry

---

of Justice and Islamic Affairs, ensures the legitimacy of their transactions according to the provisions of Islamic Shariah law. Thus, UAE is a conventional financial system in which financial regulation has regulated Islamic banking and licenses with a specific domestic law. Finally, in Turkey, *Participation banking* is the name given to banks that carry out *interest-free* banking business, such as Islamic banking. Turkey is also a primarily conventional financial system. The banking system of Turkey is mainly regulated by the Banking Law N. 5411/2013, which does not clearly regulate "Islamic" banking. However, they have introduced the concept of *Participation Banking* which operates alongside traditional banking. Participation Banks (as well as participation funds, accounts, and so on) is "an institution operating primarily to collect funds through special current accounts and participation accounts and grant loan according to the Banking Law and the branches in Turkey of such institutions established abroad (window)." Participations Banks are members of the Participation Banks Association of Turkey. Participation banking fundamentals are quite similar to the most common Islamic banking principles and contracts, based on interest-free and profit and loss sharing systems. Turkey's banking framework is quite close to the Indonesian framework since it provides specific regulations for Islamic banks and other Islamic finance institutions. These kinds of financial systems can be defined as Shariah-Compliant too.

The last class (5) identified as "*Fully Islamic Banking only*" is totally "*Shariah-compliant*". This financial system is covered in the IFS structure definition of the IMF since conventional practices are not allowed, and financial business must be only compliant with the Shariah. In this financial system, the banking business is fully *interest-free*, and the domestic banking law and licenses permit only Islamic banks. Looking at the country in the sample and as confirms by IFSB, in this category, only two countries can be placed: Iran and Sudan. Indeed, for the first one, IFSB data confirms that Iran is the most extensive Islamic financial and economic system globally. The Islamic banking law of 1983 sets out that Islamic banks can only engage in *interest-free* transactions and regulates banking

system, instruments and supervisory. Similarly, Sudan (the second world's most extensive Islamic financial and economic system) is a fully IBS. The banking business act provides that banking business must not be inconsistent with Shariah. The Central Bank of Sudan introduced Islamic laws in 1984. Table 1.2 displayed the distribution of countries in the sample according to the proposed taxonomy.

**Table 1.2 Distribution of the sampled countries along with the taxonomy**

Country	Financial System structure					
	Fully Conventional Banking only (1)	Conventional Banking System unregulating Islamic banking (2)		Fully Dual Banking System (3)	Conventional Banking System regulating Islamic Banking (4)	Full-Fledged Islamic Banking only (5)
		Fine-Tuning Approach	No objection to Islamic Banking			
India	X					
Singapore		X				
EU			X			
Saudi Arabia			X			
Malaysia				X		
Turkey					X*	
UAE					X	
Indonesia					X*	
Iran						X
Sudan						X

\*Participation Banking is the name given to Islamic banks in Turkey. Syariah banks are Islamic banks in Indonesia.

Source: authors own compilation

### 1.4.2 International banking standards adoption

Previously, we highlighted the top-down approach's issue that characterises international soft regulation as banking standards and the regulators' dilemma. As a matter of fact, different interpretations of Islamic law, different domestic legal country frameworks, and different *interest-free* banking practices make Islamic banks different from their conventional counterparts, causing a lack in the comparability of different

---

financial systems. In this regard, Basel standards could use some adjustments, like those proposed by the IFSB but not commonly adopted. According to a survey of IMF (2014), there are two approaches followed by different jurisdiction: in the first, Basel standards are directly applicable to all bank, including Islamic banks; in the second, the Basel standards are complemented by IFSB standards. It is a key issue since some countries involved in the IFS are global-significant, like those considered in the taxonomy. Notably, some of them as India, Singapore, and the European Union, integrate the Basel framework into domestic banking regulation and supervisory approach and no distinction is made regarding the framework between conventional and Islamic banks. On the contrary, some countries adopt Basel standards differently:

- Indonesia financial system does not apply the Basel framework to *Shariah banks* or *rural banks*. The regulatory framework of *Shariah banks* is similar to the Basel framework since the difference of *interest-free* banking, and it is compliant with the IFSB standards. Therefore, *Shariah* commercial banks can be subsidiaries of conventional commercial banks, and the framework is applicable on a consolidated basis. According to the Basel monitoring report on Regulatory Consistency Assessment Programme (RCAP), rural banks are not connected to the payment and clearing system and operate in a restricted regime. They are classified no global systemically important (G-SIBs) and no domestic systemically important banks (D-SIBs). *Rural banks* comprise less than 2% of the total banking assets and can take *Shariah rural banks'* legal form.
- Saudi Arabia has no specific regulation for Islamic banks and regulates these banks in the same way as conventional. According to the RCAP report, this does not currently lead to Basel standards deviation, with no special treatment for Islamic banks, services, and products.



- Turkey declared participation banks (as Shariah-compliant banks) no global systemically important, but seven banks are systemically relevant from a domestic point of view. This kind of banks operates compliant with conventional counterparts' framework but considers the unique features that *interest-free* banking required. They apply the Basel framework, but they follow the standard of IFSB too.
- Malaysia and UAE are not full members of the BCBS and does not apply the Basel framework mandatorily. Nevertheless, Malaysia financial authorities have completed the domestic implementation of the relevant Basel III prudential reforms, and it is considered compliant with Basel III and following.<sup>7</sup> Malaysia banking system follows a hybrid approach, also implementing IFSB standards for Islamic banks. On the contrary, according to the last UAE Financial Stability Report 2019, Emirates' banking system is almost totally compliant with the Basel framework, but national authorities do not provide official disclosure about IFSB standards application for Islamic banks.
- Finally, Iran and Sudan are not members of the BCBS, but they are the observer of the IFSB. There is no extensive official disclosure for these countries, but the Iranian banking system has voluntarily adopted Basel I standards until now, and Sudan Central Bank (the banking authority) has started to work to facilitate the implementation of the international standards.<sup>8</sup>

---

<sup>7</sup> Bank Negara Malaysia, Central Bank of Malaysia, Financial Stability and Payment Systems Report 2018

<sup>8</sup> Central Bank of Sudan, Annual Report 2018, <https://cbos.gov.sd/en/content/annual-report-2018>

### 1.4.3 The relationship between IFS architecture and international banking standards

Previously, we provided the regulatory principles useful for new financial system taxonomy, highlighting different countries' legal frameworks adopting Islamic banking practices. Results are summarised in Table 1.3. Firstly, the taxonomy identifies several differences compared to the IMF (2019) map of IFS structures. The *dual* definition of the IFS refers to those countries where a double regulation is in force and the conventional and Islamic institutions coexist, allowing Islamic banks represented by *stand-alone* entities. The taxonomy highlights the weakness of the *IMF definition's binary approach*, which may tend to not consider the standardisation issue of Islamic banking and finance due to different interpretation of Shariah. The *dual* definition excludes those countries in which the regulatory framework is *neutral* to Islamic banking practices, like Singapore and the European Union. Unexpectedly, the domestic regulatory review also reports Saudi Arabia's case, as an *Islamic-founded* country in the first positions of all Islamic banking and finance ranking and hosting Al-Rajhi Bank, the world largest Islamic bank.<sup>9</sup> As said before, Saudi Arabia legal framework does not require specifics for Islamic banking practices, with a single banking legal framework for Islamic and conventional banks. Regarding international banking framework adoption, Saudi Arabia fully applies Basel standards without distinguishing Islamic banking and does not provide national disclosure about IFSB formal adoption. Therefore, going towards those financial system structures “more” Shariah-compliant, the taxonomy categories are closer to the dual financial system's IMF definition. However, the international banking standards review records the inverse relationship between the *Shariah-compliance* of the financial system structure and the

---

<sup>9</sup> S&P Global 2020, Here is how the GCC's 10 largest Islamic banks rank,

<https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/here-is-how-the-gcc-s-10-largest-islamic-banks-rank-57687584>

international banking framework adoption. This is the case of Malaysia, UAE, Indonesia, Iran, and Sudan as Shariah-compliant financial systems, which generally regulate Islamic banking, but they do not apply international Basel standards to the Islamic banks with a *top-down* approach. Turkey is the exception since they regulate participation banks separately but declare they implement Basel and IFSB standards. Furthermore, several issues arise. Firstly, the lack of standardisation of Islamic finance practices and the differences in Shariah interpretations make it difficult for banks to compare within and between different countries. Many differences generate many endogenous and exogenous variables to be considered in comparative analysis and implications in the level playing field of international Islamic banks that have to comply with different domestic legal requirements impacting the business model. The mismatch between Islamic banking regulations may generate over-regulation phenomena affecting efficiency, profitability, and soundness. Moreover, most issues arise due to the lack of implementation of international banking standards, with implications for the clearness of banking sector disclosure and the banking system stability. Differences in the Shariah interpretations, the lack of standardisation and the uneven application of international standards could generate *regulatory arbitrage*. Islamic and conventional banks carrying out Islamic subsidiaries or Islamic windows could be encouraged to move or increase activities in those countries with fewer regulatory constraints. These phenomena increase the risk of jeopardising the orderly outgrowth of those developing countries adopting Islamic finance practices and the inefficient impact of international banking standards.

**Table 1.3 Financial Systems architecture and international standards relationship**

	Islamic Banking domestic law	IMF (2019) definition	Taxonomy classes	International standards adoption	
				BCBS	IFSB
<i>India</i>	x	Fully Conventional	(1)	✓	x
<i>Singapore</i>	x	Fully Conventional	(2)	✓	x

<i>EU</i>	✗	Fully Conventional	(1)	✓	✗
<i>Turkey</i>	✓	Dual	(4)	✓ (also for Participation banks)	✓
<i>Saudi Arabia</i>	✗	Fully Conventional	(2)	✓ (no difference for Islamic banks)	✗
<i>Malaysia</i>	✓	Dual	(3)	Discretionary	✓
<i>UAE</i>	✓	Dual	(4)	Discretionary	✗
<i>Indonesia</i>	✓	Dual	(4)	✓ (not for Islamic banks)	✓
<i>Iran</i>	✓	Fully Islamic	(5)	✗	✗
<i>Sudan</i>	✓	Fully Islamic	(5)	✗	✗

Source: authors' own compilation

## 1.5 Conclusions and further remarks

This paper contributes to the literature debate on the regulators' dilemma affecting international policymakers concerning the conflict between international banking standards (as Basel framework) and the domestic banking law in force within different countries. Notably, this paper focuses on the dual financial system, as the IFSs, highlighting some biases and issues typical in those countries underpinned by ethical and religious principles. These countries often suffer regulatory biases, socio-cultural biases, over-regulation phenomenon and standardisation issues. Literature contributions demonstrate that the need for regulation is fundamental in those sectors characterised by systemic risk, as the banking sector, justifying the massive law-making run after the 2008 financial crisis born from the banking system. The growing banking regulation amplified the regulators' dilemma due to no clear evidence about the suitability of a set of common international standards universally applied with a *top-down* approach. The international Basel standards are thought and built for conventional banking systems without considering the possibility

of different structures as those financial systems in which double banking regulation is in force. Thus, dual financial systems are generally analysed and considered following a *binary* approach. The *binary* approach is not always adequate to capture the difference in various financial systems' characteristics, highlighting a gap of the granularity of different shades of the financial system and without considering the impact may have the international regulation, as Basel framework. By reviewing the domestic and international banking regulation of a sample of countries members of the BCBS and globally relevant in the IFS practices, this paper provides a new financial system taxonomy overcoming the dual financial system definition of the IMF (2019) and by the banking regulation perspective. The taxonomy highlights the impact of those *socio-cultural* and regulatory biases linked to the Islamic Financial Systems' historical and geopolitical underpinnings and identifies some issues. Firstly, the dual financial system cannot be defined as a *binary* concept since different Shariah interpretations and the lack of standardisation affecting Islamic finance. Looking at countries in the sample in which the banking system is systemically relevant at the domestic and global level, there are different approaches in Islamic banking regulation with different shades of the *IMF's dual concept* (2019). At the same time, the domestic banking regulation combining with local Governance and political aspects also affected the implementation of international standards. The taxonomy highlights that those countries in which the IFS is developed and Islamic banking is systemically relevant generally does not fully implement the Basel framework (formally). However, the taxonomy also identifies some virtuous countries representing a role model (as Turkey), in which Islamic banking (*participation banking*) is regulated, and the Basel framework is implemented by Islamic banks, which also follow IFSB standards. In this country, the risk of regulatory arbitrage and instability is lower since domestic and international banking regulation ensures the level playing fields to all the actors involved. Once again, it is confirmed how and how much is positive the role of financial regulation and the essential positive role and benefits of financial regulation and which are the benefits.

---

Furthermore, the taxonomy could help contribute to the literature debate of the regulators' dilemma since it provides a more granular classification of the dual financial systems. The taxonomy does not consider the *binary* concept (Islamic yes/no, regulated yes/no) and considering the different Shariah interpretations based on different countries' religious, historical, political, and legal underpinnings. As a matter of fact, the regulators cannot but consider different domestic banking laws and countries' legal characteristics in the *top-down* approach of international soft-regulation. The risk of regulatory arbitrage grows both within and between different countries since banks could exploit the regulation mismatch. However, this phenomenon may undermine international banking standards and create the conditions for the banking system instability. Therefore, in countries with a solid international relationship and globally interconnected banking systems, over-regulation, socio-cultural and regulatory bias may generate regulatory arbitrage phenomena becoming a vehicle in financial distress transmissions. Finally, researchers and policymakers could consider taxonomy results and discussion and the financial system variable as a new discriminating variable in financial systems and banking systems analysis and regulation. Notably, it is helpful for policymakers to arrange international standards that consider the effect and impact on the domestic country level. On the other hand, the researchers and practitioners' point of view could be possible analyses and assesses Islamic and conventional banking systems performances and soundness comparing them also considering new financial system variables. The last decades demonstrated the Islamic Financial Systems and the Islamic model resilience in dealing with conventional-generated financial crisis hit financial markets and banking. However, the opposite is unclear since the effects of the Islamic model breakdown globally are unknown.

## References

- Abedifar, P., Molyneux, P., Amine, T. (2013). Risk in Islamic Banking. *Review of Finance*, Vol. 17, 6, pp.- 2035-2096.
- Ajmi, A.N., Hammoudeh, S., Nguyen, D.K., Sarafrazi, S. (2014). "How strong are the causal relationships between Islamic stock markets and conventional financial systems? Evidence from linear and nonlinear tests," *Journal of International Financial Markets, Institutions and Money*, Elsevier, vol. 28(C), pages 213-227.
- Alam, N., Binti Zainuddin, S.S., Rizvi, SAR, (2019)."Ramifications of varying banking regulations on performance of Islamic Banks," *Borsa Istanbul Review*, Research and Business Development Department, Borsa Istanbul, vol. 19(1), pp. 49-64, March.
- Al-Hares, O. M., AbuGhazaleh, N. M., & El-Galfy, A. M. (2013). Financial Performance And Compliance With Basel III Capital Standards: Conventional vs. Islamic Banks. *Journal of Applied Business Research (JABR)*, 29(4), 1031-1048.
- Alqahtani, F., Mayes, D.G., (2018). "Financial stability of Islamic banking and the global financial crisis: Evidence from the Gulf Cooperation Council," *Economic Systems*, Elsevier, vol. 42(2), pp. 346-360.
- Andries, A.M. (2009). "What Role Have Banks in Financial Crises?" *Review of Economic and Business Studies*, Alexandru Ioan Cuza University, Faculty of Economics and Business Administration, issue 3, pages 149-159, May.
- Avgouleas, E.; Goodhart, C. (2015)."Critical Reflections on Bank Bail-ins," *Journal of Financial Regulation*, Oxford University Press, vol. 1(1), pages 3-29.
- Ayub, M. (2007). "Understanding Islamic Finance", John Wiley & Sons, LTD., 516 pp.
- Bank for International Settlement (BIS), [www.bis.org](http://www.bis.org)
- Bank Indonesia, (2008). Acts Nr. 21/2008 on Sharia (Islamic) Banking. [https://www.bi.go.id/en/tentang-bi/uu-bi/Documents/act\\_21\\_2008.pdf](https://www.bi.go.id/en/tentang-bi/uu-bi/Documents/act_21_2008.pdf)

- 
- Bank Negara Malaysia, (2009). Central Bank of Malaysia Act. [https://www.bnm.gov.my/index.php?ch=en\\_legislation&pg=en\\_legislation\\_act&ac=486&full=1&lang=en](https://www.bnm.gov.my/index.php?ch=en_legislation&pg=en_legislation_act&ac=486&full=1&lang=en)
  - Bank Negara Malaysia, Central Bank of Malaysia, Financial Stability and Payment Systems Report 2018
  - Barth, J.R., Lin, Chen & Ma, Yue & Seade, Jesús & Song, Frank M., (2013). "Do bank regulation, supervision and monitoring enhance or impede bank efficiency?" *Journal of Banking & Finance*, Elsevier, vol. 37(8), pp. 2879-2892.
  - BCBS, RCAP on consistency: jurisdictional assessments, [https://www.bis.org/bcbs/implementation/rcap\\_jurisdictional.htm](https://www.bis.org/bcbs/implementation/rcap_jurisdictional.htm)
  - Beck, T., Demirguc-Kunt, A., & Levine, R. (2003). "Law, endowments, and finance", *Journal of Financial Economics*, 70, 137-181.
  - Beck, T., Demirguc-Kunt, A., Merrouche, O. (2013). "Islamic vs. conventional banking: business model, efficiency and stability," *Journal of Banking & Finance*, Elsevier, vol. 37(2), pages 433-447.
  - Beddoes, Z.M. (1999). *The International Financial System*. *Foreign Policy*, 166, pp.16-27
  - Bitar, M., Hassan, M. K. and Pukthuanthong, K., and Walker, T.J. (2018). *The Performance of Islamic vs. Conventional Banks: Evidence on the Suitability of the Basel Capital Ratios*. Forthcoming *Open Economic Review*. Available at SSRN: <https://ssrn.com/abstract=3138225>
  - Bitar, M., Kabir Hassan, M., Hippler, W.J., 2018. "The determinants of Islamic bank capital decisions," *Emerging Markets Review*, Elsevier, vol. 35(C), pp. 48-68.
  - Bitar, M., Naceur, S.B., Ayadi, R. (2020). "Basel Compliance and Financial Stability: Evidence from Islamic Banks", *Journal of Financial Services Research*.



- Boissay, F. and Capiello, L. (2014). "Micro- versus Macro-Prudential Supervision: Potential Differences, Tensions and Complementarities," *Financial Stability Review*, European Central Bank, vol. 1.
- Carstens, A. (2018). "A level playing field in banking", Bank International Settlement management speech, <https://www.bis.org/speeches/sp180130.htm>
- Central Bank of Sudan, Annual Report 2018, <https://cbos.gov.sd/en/content/annual-report-2018>
- Central Bank of the UAE, (1983). Islamic Banking Law of 1983. <https://www.centralbank.ae/en/laws-and-regulations/legislation>
- Demirgüç-Kunt, A. and Detragiache, E. (2011). "Basel Core Principles and bank soundness: Does compliance matter?," *Journal of Financial Stability*, Elsevier, vol. 7(4), pages 179-190, December.
- Farooqi, M. and O'Brien, J. (2019), "A comparison of the impact of the Basel standards upon Islamic and conventional bank risks in the Gulf state region", *Journal of Islamic Accounting and Business Research*, Vol. 10 No. 2, pp. 216-235.
- Farooqi, M. and Zaheer, S. (2015). Are Islamic banks more resilient during financial panics? *Pacific Economic Review*, Vo. 20, 1, pp. 101-124.
- Financial Stability Board, [www.fsb.org](http://www.fsb.org)
- Fratianni, M. and Pattison, J. (2002). International Financial Architecture and International Financial Standards. *The Annals of American Academy of Political and Social Science*. Vol. 579, Exchange Rate Regimes and Capital Flows, pp. 183-199
- Ginting, L. M.; Ruhana, N.; Abdul Halim, N. H. H. and Finieli, S. T. (2019), "Legal and Regulatory Framework of Islamic Banking and Finance: A Study in Singapore", *International Journal of Management and Applied Research*, Vol. 6, No. 4, pp. 234-244.
- Global Islamic Finance Report 2020, Cambridge Institute of Islamic Finance, <http://gifr.net/publications/gifr2019/ifci.pdf>

- 
- Hammoudeh, S., Mensi, W., Reboredo, J.C., Nguyen, D.K. (2014). "Dynamic dependence of the global Islamic equity index with global conventional equity market indices and risk factors," *Pacific-Basin Finance Journal*, Elsevier, vol. 30(C), pages 189-206.
  - Hancock, D., Berger, A.N., Humphrey, D.B. (1992). "Bank efficiency derived from a profit function," *Finance and Economics Discussion Series 211*, Board of Governors of the Federal Reserve System (U.S.), revised 1992.
  - Harzi, A. (2012). The impact of Basel III on Islamic banks: A theoretical study and comparison with conventional banks. Paper presented first time at the research chair "ethics and financial norms" of University Paris.
  - Hassan, A. and Mollah, S. (2018). *Islamic Finance. Ethical Underpinnings, products and Institutions. Palgrave Macmillan, Springer Nature.*
  - Hassan, M.K. and Aliyu, S. (2018), A contemporary survey of islamic banking literature, *Journal of Financial Stability*, 34, issue C, p. 12-43.
  - Hassan, M.K. and Dicle, M.F (2005). "Basel II and Corporate Governance in Islamic Banks", Dept of Econ & Finance, Uni of New Orleans LA working paper.
  - Hassan, M.K., Aliyu, S., Paltrinieri, A., Khan, A. (2018). A review of Islamic Investment Literature. Special Section: Understanding Indonesia's Economic and Financial Systems. *Economic Papers. The economic papers of Australia*, 2018.
  - Hassan, MK, Sirajo, A. (2018). A contemporary survey of Islamic banking literature. *Journal of Financial Stability*, Vo. 34, pp. 12-43.
  - Hidayat, S.E., Nadeem, M.M., AlMadaifa, A.J., Ali, Z. (2018). Impacts of Basel III on Islamic Finance. *Journal of Islamic Financial Studies*, 4, No. 2, pp. 122-123
  - Hussain, M., A. Shahmoradi, R. Turk. (2015). "Overview of Islamic Finance," *IMF Working Paper*, International Monetary Fund, Washington, DC.
  - International Monetary Fund (2017). "Ensuring Financial Stability in countries with Islamic Banking", *Policy Papers*, <https://www.imf.org/en/Publications/Policy->

[Papers/Issues/2017/02/21/PP-Ensuring-Financial-Stability-in-Countries-with-Islamic-Banking](#)

- Islamic Financial Services Board (2015). "Core Principles for Islamic Finance Regulation", Public Standards, April 2015, <https://www.ifsb.org/published.php>
- Johnes, J., Isseldin, M., Pappas, V. (2014). A comparison of performance of Islamic and conventional banks 2004-2009. *Journal of Economic Behavior & Organization*, Vo. 103, Special Issue, pp. S93-S107.
- Karmann, A. (2000). *Financial Structure and Stability*. Physica-Verlag. Heidelberg.
- Kern, A. (2019). "Principle of Banking Regulation", Cambridge: Cambridge University Press.
- Khan, H.R. Deputy Governor of the Reserve Bank of India, at Bancon 2011, organised by the Indian Bankers Association and Indian Overseas Bank, Chennai, 4 November 2011. "Financial inclusion and financial stability: are the two sided of the same coin?"
- Merrouche, O., Detragiache, M. and Demirgüç-Kunt, A. (2010). "Bank Capital; Lessons From the Financial Crisis," IMF Working Papers 10/286, International Monetary Fund.
- Merton, R.C. (1995). A Functional Perspective of Financial Intermediation. *Financial Management*, Vol. 24, No. 2, Silver Anniversary Commemoration (Summer, 1995), pp. 23-41.
- Monetary Authority of Singapore – MAS (2009). *Guidelines on the Application of Banking Regulations to Islamic Banking*. <https://www.mas.gov.sg/regulation/guidelines/guidelines-on-application-of-banking-regulations-to-islamic-banking>
- Nguyen, QTT, Gan, C. and Li, Z. (2019). "Bank capital regulation: How do Asian banks respond?". *Pacific-Basin Finance Journal*, Elsevier, vol. 57(C).
- Pop, A. (2006). Market Discipline in International Banking Regulation: Keeping the Playing Field Level. *Journal of Financial Stability*, Vol. 2, No. 3, pp. 286-310, October 2006. Available at SSRN: <https://ssrn.com/abstract=935587>

- 
- Resti, A. (2008). Pillar II in the New Basel Accord – The Challenge of Economic Capital. Risk Books, London, 2008
  - Ryu, KP., Piao, SZ., Nami, D. (2012). A comparative study between the Islamic and Conventional banking systems and its implications. Scholarly Journal of Business Administration, Vol. 2(5), pp. 48-54.
  - S&P Global (2020), Here is how the GCC's 10 largest Islamic banks rank, <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/here-is-how-the-gcc-s-10-largest-islamic-banks-rank-57687584>
  - Salman, A., Nawaz, H. (2018). Islamic financial system and conventional banking: A comparison. Arab Economic and Business Journal, Vo. 13, 2, pp. 155-167.
  - Saudi Arabian Monetary Authority, (1966). Banking Control Law act of 1966. <http://www.sama.gov.sa/en-US/Laws/BankingRules/%D9%86%D8%B8%D8%A7%D9%85%20%D9%85%D8%B1%D8%A7%D9%82%D8%A8%D8%A9%20%D8%A7%D9%84%D8%A8%D9%86%D9%88%D9%83.pdf>
  - Saunders, A. (2015). "Is Basel Turning Banks into Public Utilities?". Journal of Financial Perspectives, Vol. 3, No. 1, 2015. Available at SSRN: <https://ssrn.com/abstract=3080250>
  - Saunders, A. and Walter, I. (2012). "Financial architecture, systemic risk, and universal banking," Financial Markets and Portfolio Management, Springer; Swiss Society for Financial Market Research, vol. 26(1), pages 39-59, March.
  - Saunders, A., Strock, E, Travlos, N.G. (1990), Ownership Structure, Deregulation, and Bank Risk Taking. The Journal of Finance, 45, pp. 643-654
  - Siraj, K & Pillai, P. (2012). Comparative Study on Performance of Islamic Banks and Conventional Banks in GCC Region. Journal of Applied Finance and Banking, Vol. 2 n.3, 123-161

- Smolo, E. and Habibovic, E. (2012). Barriers to Growth of Islamic Finance: Issue of Standardisation. In book: Islamic Banking and Finance: Principles, Instruments and Operations, Edition: 1st, Chapter: 29, Publisher: The Malaysian Current Law Journal, Editors: Adnan Trakic, Hanifah Haydar Ali Tajuddin, pp.715-737
- Strock, E., Saunders, A., Travlos, N.G. (1988). "Ownership structure, deregulation, and bank risk taking," Proceedings 199, Federal Reserve Bank of Chicago.
- Tahir-ul-Qadri, M. (2019). Standardisation in the Islamic banking & financial system. In book: The Growth of Islamic Finance and Banking, pp. 6-31. Innovation, Governance and Risk Mitigation. Edited By Hussain Mohi-ud-Din Qadri, M. Ishaq Bhatti
- Tariq, A. (2015). Islamic Finance and the New Financial System: An Ethical Approach to Preventing Future Financial Crises. Wiley Finance, John Wiley & Sons, 2015
- The Bank Association of Turkey, (2013). Banking Law N. 5411/2013. [https://www.tbb.org.tr/en/Content/Upload/Dokuman/130/Banking\\_Law\\_No\\_5411-3bsm.pdf](https://www.tbb.org.tr/en/Content/Upload/Dokuman/130/Banking_Law_No_5411-3bsm.pdf)
- Tutino, F. (2018). The imperfect bank: risks, regulation and the possible change. *Bancaria*, 9, 2018
- United Nation, *Revision of the World Population Prospect 2019*, <https://population.un.org/wpp/>
- Van den Heuvel, S. (2006). "The Bank Capital Channel of Monetary Policy". Meeting Papers 512, Society for Economic Dynamics.
- Yaacob, H. and A. Abdullah. (2012). Standards Issuance for Islamic Finance in International Trade: Current Issues and Challenges Ahead, International Congress on Interdisciplinary Business and Social Sciences 2012 (ICIBSoS 2012) 65, pp. 492-497.
- Zaher, T.S., & Hassan, M. (2001). A Comparative Literature Survey of Islamic Finance and Banking. *Financial Markets, Institutions and Instruments*, 10, 155-199.

- 
- Zins, A. and Weill, L. (2017). Islamic banking and risk: The impact of Basel II. *Economic Modelling*, Elsevier, vol. 64(C), pages 626-637.
  - Zulhibri, M. and Ghazal, R. (2014). "Standardisation of Islamic banking practices: a regulatory perspective" *Afro-Asian Journal of Finance and Accounting*, Inderscience Enterprises Ltd, vol. 4(1), pp. 1-25.



## Chapter 2

# Islamic Finance Practice and Global Banking Regulation: Does it Matter for Stability and Performance

---

**Abstract:** A limited number of studies from a global perspective systematically review and examine banking systems that offer Islamic Finance products and services by focusing on the dual, conventional and Islamic Banking System. This paper aims to identify which banking system is a better landscape that provides the best fit with the Basel III regulation in terms of stability and profitability. In this regard, this paper analyses the profitability and the stability relationship by running the ANOVA and MANOVA models across a reflective and inclusive sample of banks at a global level. This paper aims to fill this gap since banking prudential regulation is under ongoing development and looking for an innovative and effective approach to tackle any systemic global crisis. Fully-fledged Islamic Banking System (IBS), as well as Dual Banking System, or other models



with their own features, could provide or not a potential opportunity to improve banking capital requirement and profitability.

## 2.1 Introduction

*"A too-big-to-fail firm is one whose size, complexity, interconnectedness, and critical functions are such that, should the firm go unexpectedly into liquidation, the rest of the financial system and the economy would face severe adverse consequences."*

*Ben Bernanke, Federal Reserve Chair, 2010*

∞

The 2007-2008 global financial crisis affected heavily and deeply the international financial system heavily and deeply around the globe, demonstrating the weakness of the financial systems but above all, the global banking system's *un-resilience* (Hassan and Mollah, 2018; Johnes et al., 2014). The global financial crisis, or probably more accurately the global banking crisis, has shown a strong interconnection between the different banking sectors, which unfortunately allowed the crisis a quick contagion like '*a fire spreading*' (Bank of England, 2020). The Bank of England tried to explain the financial turmoil compared it with the Great Fire of London spread from home to home in 1666. If banks' activities are very interconnected and built on shaky foundations, the *fire* grows and spreads.<sup>10</sup> However, the brittleness of the banking systems must be pursued right in this essence of the primary banking activity, the collection of savings and the granting of credit. Hence, the banks are imperfect due to their main scope for assuming and managing risks. It is necessary to find the right balance between capital requirement and profitability (Tutino, 2018; Van den Heuvel, 2006; Avgouleas and Goodhart, 2015; Hancock et al., 1992). As a result, the weakness and the mismanagement of the banking system is the root cause

---

<sup>10</sup>Bank of England, <https://www.bankofengland.co.uk/knowledgebank/are-financial-crises-like-fires-rapidly>

---

of the financial crisis in general or at least a throttle, which contributes to the spread themselves. In the past, undercapitalised and poorly supervised banks led to excessive banks risk-taking, often using speculative and highly volatile financial products (Saunders and Walter 2012; Andries, 2009; Strock et al., 1998). Corruption, cronyism of the banks' manager has only bread and encouraged a race for greed and amassing wealth granting loans and, more specifically, extremely risky mortgages without proper due diligence. Furthermore, governments and supervisory authorities also encouraged moral hazard behaviours keeping alive a faulty banking standard. They had been unintentionally partners when they bail out insolvent banks in times of crisis (Beddoes, 1999). For a long time, deregulation and liberalisation have contributed to creating a riskier financial system, and there is some empirical evidence to prove it (Fратиanni and Pattison, 2002). Following, since the 2007-2008 global financial crisis, the global financial system has been expanding rapidly and widespread. Globalisation and modernisation of financial systems have also supported capital market liberalisation, free capital movement, technology advancement and financial innovation. In 2019, the total world wealth grew by \$9.1 trillion to \$360.6 trillion, which amount to a 2.6% increase over the previous year<sup>11</sup>. In this regard, the Islamic Financial System (IFS) as one of the most widespread, refers to financial activities which are guided by the Islamic law fundamentals (Shariah). It is basically founded on the profit and loss sharing system linked to real assets or real economic transaction (as a result of *gharar*) and on the prohibition of payment and receipt of *usury (ribah)*. Islamic Finance and Economy are present across the world with 1,396 institutions. Indeed, Islamic Financial institutions have also overgrown, especially in Islamic Banking (which cover 70% of the total Islamic finance)<sup>12</sup>. The State of Global Islamic Economy Report estimates a global

---

<sup>11</sup> Global Wealth Report 2019, October 2019, Credit Suisse Research Institute

<sup>12</sup> Islamic Financial Services Board. 2019. Islamic Financial Services Industry Stability Report.

expenditure of \$2.2 trillion in 2018 across the food, pharmaceutical and lifestyle sectors and besides, Islamic Finance assets were reported to have reached \$2.5 trillion in 2018. Islamic Banking contributed to the economic growth of developing countries, proving a fundamental role in increasing microfinance and financial inclusion (Hassan and Mollah, 2018). Indeed, Islamic Finance fundamentals are strongly correlated with the ethical principles of microfinance: equity, fairness and transparency. The Islamic finance model is rooted in different principles and characteristics than the Conventional one (*sociocultural bias*). Therefore, IBS needs to adopt additional rules compared to those used by Conventional banks (*regulatory bias*). However, the need for the international financial systems to break down the *regulatory bias* (which are those behaviours deriving from *sociocultural bias*) and to guarantee a correct "*level playing field*" to all the subjects involved presents some issues (Kahn, 2011; Pop, 2006). While the Conventional Banking (or financial) system (CBS) is well-regulated in all aspects, the Islamic one is already too young and fragmented (Tariq, 2015).

The literature review reveals two strictly related problems. Firstly, comparative analysis among financial systems, in terms of features, performance, stability, has always drawn the attention of the academic and practitioner community, as mentioned below. The world's economies exhibit a wide range of financial systems related to the countries' histories and legal and institutional frameworks. Literature contributions have traditionally been marked by a global empirical analysis that considers countries with different historical and geopolitical trim and, above all, different ethical underpinnings (Ajmi et al. 2014; Hammoudeh et al. 2014; Johnes et al., 2014, Beck et al. 2013). The second issue of the Islamic Banking and Finance is related to a lack of harmonised rules and regulations and the non-uniformity in those countries offering Islamic banking products and services. Products fully allowed in one country, such as the repurchase agreements (*Quard Innah*), are fully acceptable in the far East, whereas it is not permissible in other Muslim countries. Thus, there is, in general, a lack of standardisation due to the existence of different

---

interpretations of the Shariah, arising from the various keys to understanding the Islamic law from many Muslims scholars (Smolo, and Habibovic, 2012; Tahir-ul-Qadri, 2019; Yaacob and Abdullah, 2012, Hussain et al., 2015). Therefore, the result is that the Islamic Financial System is exposed to a “*Shariah arbitrage*” phenomenon (Zulhibri and Ghazal, 2014). The lack of standardisation is also the reason why it is not correct to carry out banking performance and stability analysis without considering different countries regulation landscapes. Legal requirements can influence the banking business structure, profitability, and strength (Zulhibri and Ghazal, 2014).

Systematically reviewing and examining banking systems that offer Islamic Finance products and services by focusing on the Dual Financial System (DBS), Conventional (CBS) and Islamic Banking System, this paper aims to highlights previous issues. Starting from the new financial system taxonomy presented in Chapter 1 this paper aims to identify the presence of the best banking system landscape that fits right with the Basel III regulation in terms of stability and profitability. We provide some results by carrying out a comparative analysis considering the regulatory perspective and the banking system structure (identified in previous taxonomy) and running the ANOVA and MANOVA model testing profitability and capital ratio significance relationship. Finally, we try to answer the principal research question, “Does the financial system architecture affect the relationship between the *profitability and stability of Islamic and Conventional banks?*”. The remainder of this paper is organised as follows. Section 2 presents the literature background to highlight the two issues mentioned before, and section 3 explains the research design. Section 4 presents the result. Finally, in the conclusions, we highlight and discuss the findings results implication and future remarks.

## 2.2 Literature and Regulation Background

The international financial architecture is founded on a balance between a set of essential elements. In this brittle balance, regulation and prudential supervision of banks and financial intermediaries in general play a challenging but significant role (Saunders et al. 1990; Beddoes, 1999). The frequency and severity of global financial crisis (firstly the most famous 2007-2008 and then the sovereign debt crisis in Europe in 2011) have fuelled calls for a radical change of the whole global banking and financial system. Banking regulation has to prevent the failure of a bank from spreading to healthy institutions and to protect and to reassure bank depositors. Therefore, the international regulation and supervision approach followed by the Bank for International Settlement (BIS) and by its Basel Committee on Banking Supervision (BCBS) could be and is today the most promising (Barth et al. 2013; Saunders et al. 2015). The goodwill has conceived these international agencies to develop financial stability, adopting measures aimed at continuously improving the system and financial markets (Financial Stability Board, 1999, BCBS - BIS, 1974), promoting cooperation between central banks and other equivalent agencies. Inevitably, new banking regulations, especially with more attention to capital requirements, inevitably affect profitability (Resti, 2008).

Consequently, it follows that financial regulation has increased significantly, trying to lead the way towards the best stable, efficient, and resilient financial system. However, it is hard to understand if the regulation will ever eliminate the odds of a future crisis. The literature is increasingly focusing on the impact analysis of the new Basel regulatory standards on banking systems regarding their influence on the risk and capital management banking world. The biggest challenge for prudential supervision remains to create an ideal financial system. According to Merton (1995), following the *functional perspective* in the financial intermediation analysis, it is crucial to recognise what is the best institutional structure to perform the related economic functions. The financial functions are more stable

---

than financial institutions, which can change across countries histories and their legal and law institutional framework.

Nevertheless, the financial institutions' competition (in bank business, for example) could cause a change in the institutional structure, contributing to improving the efficiency in the financial system performance. Following this perspective and trying to combine an interdisciplinary approach and develop a resilient and better financial system, this paper attempts to overcome the correct idea that *the most efficient institutional structure for fulfilling the functions of the financial system generally changes over time and differs across the geopolitical subdivision*. Indeed, it is not simple or maybe possible to answer this question since, according to Merton (1995), an 'all-season' efficient system might not exist for all different financial architecture. Literature findings provide good findings showing that the last global financial downturn affected differently Islamic and Conventional banking system (Johnes et al., 2014; Abedifar et al., 2013; Farooq and Zaheer, 2015; Hassan and Sirajo, 2018, Alam et al. 2019; Alqahtani and Mayes, 2018). Moreover, they have simply considered the Dual financial system as a system where Islamic Finance operates alongside its Conventional counterparts (Salman and Nawaz, 2018; Ryu et al., 2012; Ajmi et al. 2014; Hammoudeh et al. 2014; Johnes et al., 2014, Beck et al. 2013). They also simply analysed the impact of Basel III Standards on the banking system without considering the divergence in financial system architecture (Al-Hares et al., 2013; Farooqi and O'Brien, 2019, Zins and Weill, 2017; Bitar et al. 2018; Harzi, 2012; Hidayat et al. 2018). Consequently, we also try to contribute to answering the following issue '*How would one go about designing a completely new financial system for a country?*', starting with a new financial system taxonomy based on a banking regulatory perspective, as a critical element of the balance of a system.

Following the literature background, the research question of this paper is related to the possibility to identify, among the global financial systems offering Islamic Finance

services and products, a better banking system landscape that fits right with the Basel regulation. In this regard, we contribute to previous issues related to the missing system variable that considers the financial system architecture during banking performance and stability analysis and hence the lack of standardisation in the IFS. Then, we try to answer the following hypothesis (*H0*): "*Does the financial system architecture affect the relation between profitability and stability of Islamic and Conventional banks?*". It is in line with the need for international standard regulation to improve the financial system's stability without affecting profitability and to follow an integrated and inclusive approach.

## **2.3 Research Methodology**

This paper aims to identify the best financial system offering Islamic Banking practice that serves the best landscape that fits best with the Basel III regulation. To do so, the authors had to review, examine and identify in a standardised way the practice of Islamic Banking across different systems and therefore develop a taxonomy framework that classifies the application of Islamic Banking globally following a clear, coherent rationale. The second stage is to test the relationship between banks stability and profitability of banks offering Islamic Finance from different frameworks identified in the taxonomy.

Therefore, in line with the aim stated above, the research methodology is organised as follow. Firstly, we start with a regulatory and banking law review. Sample selection identifies banking systems structures by checking them by the BCBS members (and members of the *Islamic Financial Services Board* – IFSB), considering the correlation between the financial system organisation and the Basel III Standards adoption and implementation. Therefore, we focus on examining banking law and fundamentals of these countries, focusing when possible on Islamic Banking practice. Finally, we provide a distinctive and original taxonomy of the financial system structure from the corporate

---

banking perspective and under a regulatory perspective. In this taxonomy, we both consider the banking system architecture, highlights the effects of Islamic Finance services and products, and Basel compliance.

Following, firstly, we answer earlier issues related to the different financial system architecture and the lack of standardisation in the IFS. We continue testing the relation between capital ratios and banks' profitability/efficiency. We start analysing financial statements data of previous selected countries representative of different financial system structures in the taxonomy, also presenting the main descriptive statistics and Pearson correlation coefficient of the whole sample. Then, after a winsorisation process, we remove some outliers, improving the data analysis (to solve the heteroskedasticity issue), providing a qualitative analysis of the data and highlighting the main features. Following, we run the ANOVA and MANOVA models to test the significant differences in profitability and stability, first considering the statistical significance between *ROE* and *CET1* Basel ratio and the binomial relation among financial system architecture and banks business model (Islamic or Conventional). All data analyses are performed with Stata Data Analysis.

### 2.3.1 Variables description

Now, keeping in mind the previous taxonomy, we proceed with the financial statements data analysis. Firstly, we selected several financial statements variables to identify and calculate some banks' profitability and regulatory capital ratios (as risk-based and stability markers), generally Basel-based. We consider the following items from the Balance Sheet and the Income Statements reported and explained in Appendix A. In summary, we measure the:

- asset and liability composition computing the *Deposit to Liability ratio* (*Dep/Liab*);



- *Net Interest and Dividend Income and Net Fee and Commissions (NID-NFC)* testing the bank funding strategy and business model;
- *Loan to Deposit ratio (LD)* to assess the bank's liquidity capability (Van Den End, 2013);
- *Cost to Income ratio (CI)* is settled to measure the bank operational efficiency and productivity, to enforce the performance analysis (Alzamari, 2013);
- *Net Income before taxes*, to excluded bias from different countries fiscal policy;
- *Texas Ratio* to evaluate the good health of the bank, considering the Non-Performing Loans (NPL) a good proxy to identify potential bank failure (Jesswein, 2009).

Following, in order to assess stability and profitability, we consider the:

- *Return on Equity (ROE)* and *Return on Asset (ROA)* ratio are used as profitability measures (Siraj and Pillai, 2012; Nguyen et al. 2019 and Bitar et al. 2018);
- *CAR* (also known as *Solvency Ratio*) and *CET1* ratio are used to proxy for the risk-based and regulatory capital (Basel III), respectively;
- *Leverage Ratio (Basel\_Lev)* - Basel III-based - as an equal leverage ratio which is not risk-weighted based (Dermine, 2015);

Following the literature on income diversification, we add firm-specific variables to control other profitability and stability effects. The natural logarithm of Total Asset (*Size*) is calculated to capture the differences in bank characteristics that could affect bank stability and performance, and the *GDP's* year growth rate (*GDPg\_year*) as bank performance exogenous control variables. Finally, the next three key factors represent a control variable for the classification and the distinction for each pillar of the taxonomy. As mentioned in the taxonomy, the difference across various models is based on three components. The first

---

one is the *Financial System Architecture (FinSys)* explaining variable, which reports how conventional banking fits with Islamic banking, grouping by macro-category. The second one who is depending on the first one is the *Business Model (Busmod)* explanatory variable which considers how Islamic Banks deliver the Islamic banking products and services in practice. This is the business model of Islamic banks or banks offering Islamic banking products and services.

The third one is *Islamic Banking Activities (IBA)* which represents the product mentioned in the business model within the financial system. The three developed variables will empirically test the validity of the observed taxonomy, following a *top-down* approach. In the ANOVA and MANOVA tables, we also consider *Countries* as a variable that allow splitting the number of banks for each country to test any relationship with other variables, particularly with taxonomy variables. All variables and their definitions are also summarised in Appendix A.

### 2.3.2 Data and sample composition

Starting from the seven Basel III compliant countries selected before (Indonesia, UAE, Malaysia, Singapore, Turkey, Saudi Arabia, India), we cover almost all the financial system structures available in the taxonomy. As a matter of fact, 5 of these countries (also members of IFSB) are included in 28 countries that cover 90% of the world's banking assets, according to BCBS.<sup>13</sup> We use annual financial statements data from the Thomson Reuters Eikon Database, particularly considering the Balance Sheet and Income Statement data. It is impossible to include the taxonomy category "*Fully Islamic Banking only*", Iran and Sudan, since there are no members of the BCBS, and the banking systems data are not available in Thomson Reuters Eikon Database. Therefore, we start with a sample of 38 banks as a good proxy of taxonomy interpretation, which includes the first bank companies

---

<sup>13</sup> BCBS, [https://www.bis.org/bcbs/implementation/rcap\\_jurisdictional.htm](https://www.bis.org/bcbs/implementation/rcap_jurisdictional.htm)

representing 50% of the banking USD Total Asset for each country, based on the ranking provided by Reuters.

We find a high concentration level in all these countries, where the average concentration degree is about 75%, excluding India, where the banking sector composition is very granulated (Table 3). This assumption provides greater strength to our sample. Afterwards, for Malaysia and Indonesia, where Islamic Banking is allowed to carry out an "Islamic Subsidiary", we consider each bank selected the Islamic counterparts, in line with the research question. Data are collected annually considering the last available five-year Financial Statement data, using USD as currency for consistency and better comparison. Generally, we consider 2015-2019 annual data for each bank in the sample, except for four banks that did not publish last year's Financial Statements yet. If necessary, we consider the last available five years, too, from 2014 to 2018. Therefore, considering the latest available five years, we capture the implementation of banks Basel III capital regulation (2012-2016) and the full Basel II compliance. Macroeconomic data as GDP's year growth rate is extracted from the World Bank Open Data. Table 3 shows the sample composition ordered by the banks Total Assets and considering ownership, bank business model, and whether the Islamic Banking services supply, obtained by annual reports analysis. We note that in this first stage of this work, our tests and the significance of our results could be sometimes limited by data availability and restriction criteria.

Table 2.1 Sample description

Country	Name	Code	State-Owned (Ownership)	Business Model		Total Asset (USD)	Concentration	
				Conv. Banking	Islamic Banking			
Indonesia	Bank Rakyat Indonesia	BBRI.JK	x	x		103.715.874.084	65%	
	Bank Mandiri	BMRI.JK	x	x		96.504.124.084		
	Bank Central Asia	BBCA.JK		x		61.903.748.755		
	Bank Negara Indonesia	BBNI.JK	x	x		60.379.790.922		
	<i>Islamic Subsidiaries</i>							
	Bank Bri Syariah	BRIS.JK				x		3.156.917.130
	Bank Syariah Mandiri	BSMR.JK				x		6.841.000
	Bank Bca Syariah	BBCS.JK				x		n.a.
	Bank Bni Syariah	BBNS.JK				x		2.586.000
Saudi Arabia	National Commercial Bank Sjsc	1180.SE	x		x	135.252.313.558	63%	
	Al Rajhi Banking & Investment Corp. Sjsc	1120.SE	x		x	102.409.432.342		
	Riyad Bank Sjsc	1010.SE			x	70.867.585.121		
	Samba Financial Group Sjsc	1090.SE			x	68.151.926.676		

53 Islamic Finance Practice and Global Banking Regulation: Does it Matter for Stability and Performance

<b>Malaysia</b>	Malayan Banking BHD	MBBM.K L	x	x	194.268.579.92 2	80%
	Public Bank Bhd	PUBM.KL		x	128.572.229.89 8	
	Cimb Group Holdings Bhd	CIMB.KL	x	x	101.033.529.610	
	Hong Leong Bank Bhd	HLBB.KL		x	49.920.417.669	
	<i>Islamic Subsidiaries</i>					
	Maybank Islamic Bhd	MBIBM.K L			x 54.531.490	
	Cimb Islamic Bank Bhd	CIMBI.KL			x 23.641.100	
	Public Islamic Bank Bhd	PUIBM.K L			x 15.054.000	
	Hong Leong Islamic Bank	HLISB.KL			x 8.508.000	
<b>United Arab Emirates</b>	First Abu Dhabi Bank Pjsc	FAB.AD	x	x	223.798.740.74 2	76%
	Emirates Nbd Bank Pjsc	ENBD.DU	x	x	186.048.944.67 4	
	Abu Dhabi Commercial Bank Pjsc	ADCB.AD	x	x	110.306.762.415	
	Dubai Islamic Bank Pjsc	DISB.DU	x		x 63.111.422.892	
<b>Singapore</b>	Dbs Group Holdings Ltd	DBSM.SI	x	x	395.540.792.87 5	99%

	Oversea-Chinese Banking Corporation Ltd	OCBC.SI		x	335.782.095.662	
	United Overseas Bank Ltd	UOBH.SI		x	278.721.886.670	
	Sing Investments & Finance Ltd	SINV.SI		x	2.020.998.994	
<b>Turkiye</b>	Turkiye Is Bankasi As	ISCTR.IS	x	x	92.943.800.970	57%
	Turkiye Halk Bankasi As	HALKB.IS		x	77.083.942.264	
	Turkiye Garanti Bankasi As	GARAN.IS		x	70.491.676.618	
	Yapi Ve Kredi Bankasi AS	YKBNK.IS		x	67.636.322.065	
<b>India</b>	State Bank Of India	SBI.NS	x	x	543.309.635.755	50%
	Hdfc Bank Ltd	HDBK.NS		x	173.891.394.439	
	Icici Bank Ltd	ICBK.NS	x	x	134.757.460.919	
	AxIs Bank Ltd	AxBK.NS	x	x	111.917.916.948	
	Bank Of Baroda Ltd	BOB.NS	x	x	109.122.174.779	
	Punjab National Bank	PNBK.NS	x	x	108.278.533.142	
	Canara Bank Ltd	CNBK.NS	x	x	97.075.127.916	

## 2.4 Empirical Results

### 2.4.1 Descriptive statistics

Table 2.2 and Table 2.3 estimate primary descriptive statistics for all variables over the whole sample population also grouped by *FinSys* variables. Particularly Table 2.3. summarises the descriptive statistics considering the data from the winsorisation process of the LD ratio to remove outliers in the observation. In this way, we capture each variable's mean values and volatility for the whole sample of banks and groups of countries by *FinSys*.

Firstly, the macroeconomic conditions measured with the mean and standard deviation of *GDPg\_year* for the whole sample indicate the potential growth of banks profit relies on endogenous variables. *IBA* dummy demonstrates that 50% of the banks' sample are Islamic banks or conventional banks that carry out Islamic Banking business. Looking at the liability side of the balance sheet, we note the high aggregate amount of the banks capital and equity (*CAR* and *CET1*) with an average of 17% and 15%. Particularly in *Double Regulated* financial systems and in those countries where Islamic Banking is not regulated but is widespread mainly, with an average *CAR* of 18% and 17%. Simultaneously, the ratio of *DepLiab*, on average close to 70%, indicates a low-cost funding strategy. Indeed, the expense in interest rates linked to the deposit amount is generally lower than the cost of debt capital related to bond issues (generally not allowed in Islamic Banking business). Since the total amount of deposits is significant, we analysed the Loan to Deposit Ratio, which is on average of 100%. The *LD* is used to assess the bank liquidity by comparing the total bank loans to total deposits for the same period. If the ratio is too high, it means that the bank may not have enough liquidity to cover any unforeseen fund requirements. Thus, this funding strategy could positively affect the NID (which represents on average the 75% of the total return for the whole sample) and the total Net Income before tax.

---

Therefore, the entire sample shows a right level of *ROE*, on average close to 14%, slightly higher in the *Double Regulated* financial system where it is closed to 16%. This data is in line with literature that suggests that high capitalised banks have a lower cost of funding and better efficiency (Bitar et al., 2018). According to Swamy (2018), the global banking regulation, particularly last Basel III standards, affects the bank business model and decision-making regarding lending, funding, and capital, which necessarily affects bank profitability. Higher capitalised banks could reduce the opportunity cost of shareholders to take excessive risks implying lower debt costs for banks, henceforth higher *ROE*. Particularly Swamy (2018) reports that the effect of the capital ratio on banks performance suggests that highly capitalised banks gain market share and have a higher probability of survival (Calomiris and Mason, 2003; Kim et al., 2005; Mehran and Thakor, 2011). Furthermore, it reveals that bank responses to increasing capital policy are different and could depend on various ownership patterns. For instance, in Table 3, we note that the major component of the sample is based on state-owned banks, and there is a high level of concentration except in the case of India. In our sample, state-owned banks (prevalent in Islamic banks) present a right level of capital and profitability, differently than some strands of the literature (Williams and Nguyen, 2005; Cornett et al., 2010). Moreover, according to Yanikkaya et al. (2018), a positive effect of market conditions mainly refers to concentration is that it leads to persistency in profitability. For these reasons, the descriptive statistics explain this funding strategy favouring a significant profit for banks stakeholders saving on the cost of debt generated by the harmful component of *NID*. At the same time, the growth of equity capital requirement contributed to increasing the value of capital (also in terms of profit for the stakeholders), would have to pass on the increase of the lending interest rates for the borrowers. Inevitably, banks measure of efficiency has also a positive impact on banks profitability since we highlight a real low level of the *CI* ratio with an average of 35%.

The *Basel\_Lev* ratio is on average of 10% for the whole sample. The BCBS (2009) introduced the Leverage Ratio as a non-risk-weighted indicator that "would help contain



the build-up of excessive leverage in the banking system, introduce additional safeguards against attempts to game the risk-based requirements, and help address model risk". Generally, we note that the Leverage Ratio of the whole sample is slightly high than the Basel requirement of 3%. The BCBS (2017)<sup>14</sup> requires the implementation of the Leverage ratio requirement starting from 2018. Finally, we built the *Texas Ratio* to assess the bank financial position. This ratio considers the amount of NPL or Non-Performing exposure and the bank's tangible common equity. If it is more than 100%, it indicates that NPL is greater than the capital the bank needs to cover potential losses. The results reveal that the *Texas Ratio* is on average of 25% and is relatively high for those systems where Islamic Banking is not allowed. Probably the high capitalised banks overall in those countries where Islamic Banking is allowed press down the ratio, but during the analysis, we also register a low level of NPL in those countries.

**Table 2.2 Descriptive statistics (original data)**

Variable	Obs	Mean	Std. Dev.	Min	Max
Countries	189	3.513228	1.958637	1	7
FinSys	189	1.820106	.8869131	1	3
Busmod	189	.2592593	.4393921	0	1
IBA	189	.4973545	.501321	0	1
Year	189	2016.884	1.446638	2014	2019
Size	189	11.02226	1.32843	7.420435	13.2394
GDPg_year	189	.0434508	.0212222	-.0075	.08
CAR	181	.1704309	.0320302	.0982	.2972
CET1	179	.1485318	.0353493	.0769	.238
Basel_Lev	189	.101008	.0348413	.0468121	.1961036
DepLiab	189	.7233374	.1521783	.115288	.9306371
LD	189	.9983043	.8404122	.0209846	6.310591
ROE	187	.1395033	.0767666	-.1754674	.2970731
ROA	189	.014653	.0100326	-.0257923	.0401152
NFC	189	.2418653	.1652213	-.0380328	.8683387
NID	189	.7581347	.1652213	.1316613	1.038033
CI	189	.3470234	.1375442	.0155416	.7587031
TexasRatio	168	.2593742	.2833574	0	1.296962

Source: authors own elaboration with Stata

<sup>14</sup> BCBS December 2017. "Basel III: Finalising post-crisis reforms".

### 2.4.3 Correlation analysis

Following, we evaluated whether linear relationships exist between different variables by running the Pearson correlation coefficient analysis. As a result, bivariate-correlation analysis is performed in Table 2.4, and Pearson correlation coefficients are generated to measure the direction and size of the relationship between every single variable (Bananuka et al. 2020). According to previous literature on Islamic and Conventional Banks (Ryu et al., 2012; Harzi, 2012; Beck et al. 2013; Al-Hares et al., 2011; Johnes et al., 2014; Farooq and Zaheer, 2015; Zins and Weill, 2017; Hassan and Sirajo, 2018; Alqahtani, 2018; Salman and Nawaz, 2018; Bitar et al. 2018; Hidayat et al. 2018; Alam et al. 2019; Farooqi and O'Brien, 2019) we find a positive and sometimes strong significant relationship ( $r=0.566$ ,  $r=0.647$ ) between profitability ratios (*ROE* and *ROA*) and solvency and stability *Basel III* ratio (as *CAR*, *CET1* and *Basel\_Lev*) with  $p=0.05$  significance. Moreover, *ROE* and *ROA* variables are positively significant related with the *CI* ratio ( $r=-0.299$ ,  $r=-0.176$ ,  $p=0.05$ ) and Texas Ratio confirms that higher capitalised banks are less risky with a good quality of loans, since there is a significant negative relationship with solvency ratios ( $r=-0.348$ ,  $r=-0.426$ ,  $r=-0.392$ ,  $p=0.05$ ). This result started substantiates *H0* hypothesis since there is an evident positive significant relationship between the profitability performance of the banks in the sample and the capital ratio required by Basel III regulation, with positive effects on efficiency and loan portfolio risk performance.

**Table 2.3 Descriptive statistics by Financial System Architecture (after winsorisation)**

-> FinSys = DoubleReg					
Variable	Obs	Mean	Std. Dev.	Min	Max
Size	94	10.50304	1.331545	7.420435	12.3185
GDPg_year	94	.0438234	.0131737	.005	.06
CAR	91	.1811495	.0306875	.123	.2972
CET1	91	.1589209	.0329965	.1038	.238
Basel_Lev	94	.1014226	.0322394	.0468121	.1858024
DepLiab	94	.7247384	.1839948	.115288	.9306371
LD	94	.8683847	.2733192	.0209846	1.5
ROE	94	.1564204	.0611597	-.0051751	.2970731
ROA	94	.0164461	.009281	-.0003569	.0401152
NFC	94	.2137246	.1523467	-.0281551	.5679505
NID	94	.7862754	.1523467	.4320495	1.028155
CI	94	.3717338	.1621265	.0155416	.7587031
TexasRatio	80	.1666983	.1827716	0	.9718058
-> FinSys = NotAllowed					
Variable	Obs	Mean	Std. Dev.	Min	Max
Size	35	11.86565	.5691114	11.22553	13.2394
GDPg_year	35	.0696	.011144	.05	.08
CAR	35	.1402914	.0222354	.0982	.1842
CET1	35	.1142971	.0217364	.0769	.1592
Basel_Lev	35	.0747902	.0223656	.0498576	.1267443
DepLiab	35	.7377381	.1145336	.4672134	.8639348
LD	35	.7966856	.172051	.3516362	1.138795
ROE	33	.0840956	.1263571	-.1754674	.266155
ROA	35	.0065581	.0132756	-.0257923	.0269965
NFC	35	.3241509	.243398	-.0000261	.8683387
NID	35	.6758491	.243398	.1316613	1.000026
CI	35	.3513084	.1570204	.0755551	.7109503
TexasRatio	30	.5703697	.3978031	.0468109	1.296962
-> FinSys = Unregulated					
Variable	Obs	Mean	Std. Dev.	Min	Max
Size	60	11.34372	1.298169	7.524637	12.97302
GDPg_year	60	.0276133	.0207139	-.0075	.075
CAR	55	.1718764	.0274669	.125	.2329
CET1	53	.1533019	.0329109	.0949	.222
Basel_Lev	60	.1156523	.0362676	.0633953	.1961036
DepLiab	60	.7127421	.1123803	.4792341	.8698212
LD	60	.9096632	.175582	.639801	1.302138
ROE	60	.143474	.0428196	.0498435	.2246434
ROA	60	.0165658	.0059726	.0053879	.029493
NFC	60	.2379523	.1047164	-.0380328	.4230114
NID	60	.7620477	.1047164	.5769886	1.038033
CI	60	.3058108	.0439417	.1991956	.3981448
TexasRatio	58	.2263433	.2106185	.0452573	.9397371

Source: authors own elaboration with Stata. Note: since in some case the LD ratio maximum value was too high we limited it at 150% with a light winsorisation.

Table 2.4 Correlation Matrix Total

Variables	Size	GDPg_year	CAR	CET1	Basel_Lev	DepLiab	LD	ROE	ROA	NFC	NID	CI	TexasRatio
Size	1.000												
GDPg_year	-0.020	1.000											
CAR	-0.117	-0.412*	1.000										
CET1	-0.075	-0.479*	0.939*	1.000									
Basel_Lev	-0.037	-0.478*	0.650*	0.755*	1.000								
DepLiab	0.082	-0.030	-0.010	-0.063	-0.049	1.000							
LD	0.019	0.030	-0.134	-0.053	-0.001	-0.756*	1.000						
ROE	0.076	-0.083	<b>0.287*</b>	<b>0.303*</b>	<b>0.242*</b>	0.013	0.207*	1.000					
ROA	0.096	-0.241*	<b>0.566*</b>	<b>0.647*</b>	<b>0.647*</b>	-0.047	0.162*	0.818*	1.000				
NFC	0.587*	0.060	0.087	0.090	0.057	-0.147*	0.104	0.065	0.085	1.000			
NID	0.587*	-0.060	-0.087	-0.090	-0.057	0.147*	0.104	-0.065	0.085	1.000	1.000		
CI	0.212*	0.114	0.072	0.069	0.049	-0.114	0.168*	<b>0.299*</b>	<b>0.176*</b>	0.158*	0.158*	1.000	
TexasRatio	0.047	0.294*	<b>0.348*</b>	<b>0.426*</b>	<b>-0.392*</b>	-0.100	0.215*	-0.569*	-0.531*	-0.110	0.110	0.291*	1.000

\*shows significance at the .05 level

#### 2.4.4 Anova and Manova models

Finally, we performed an ANOVA and MANOVA test used to investigate the mean differences between groups that split on different couples of independent variables (factors). Notably, we run a two-way ANOVA to understand if there is an interaction between each couple of independent variables (*FinSys*, *Busmod*, *Countries*, *IBA*) on the dependent variables representing profitability (*ROE*) and stability (*CET1*) (Table 2.5). Formerly, using the Shapiro-Wilk test of normality, we verified the normality hypothesis of our dependent variables since the ANOVA assumes whether the dependent variable should be approximately normally distributed for each combination of the groups of the two independent variables. The Shapiro-Wilk test confirms the normality hypothesis with a high level of significance ( $p=0.01$ ). Then, we tested the two-way ANOVA considering *ROE* as dependent variables of profitability on *FinSys* and *Busmod* factors as well as their interaction. There is a significant relationship between the effects of *FinSys* on *ROE*,  $F(2,182)=10,76$ ,  $p=0.01$ , but we did not find statistical significance differences between *Busmod* and independent variables interaction ( $p>0.05$ ). Going on two-way ANOVA, we continued to test profitability, firstly to *Countries*, *Busmod* and their interaction, and then to *FinSys*, *IBA*, and their interaction. In this way, we verify a relationship between our *FinSys* variables, the different countries in the sample, the possible *Busmod* influence, and *IBA* as Islamic Banking control variables. Moreover, there are simple main effects between *ROE* and *Countries*,  $F(2,176)=6.24$ ,  $p=0.01$ , and the interaction between *Countries* and *Busmod*,  $F(3,176)=14.75$ ,  $p=0.01$ . Conversely, the effects of factor *IBA* is not statistically significant.

Following, the same evaluations are processed for *CET1* as dependent variables, leaving unchanged factors and their interactions. These effects are more robust than the previous ones since we found simple main effects in all three cases. There is a significant interaction between *FinSys* and *Busmod*, *Countries* and *Busmod*, and *FinSys* and *IBA*

---

( $p=0.01$ ) except for the relation between *CET1* and *Busmod*,  $F(1,174)=3.31$ ,  $p=0.07$ . Thus, ANOVA two-way confirms the hypothesis *H0*, since the main effects of *FinSys* and *Countries* factors are significant and can contribute to the banks' profitability. Moreover, there is a significant effect of the interaction between *Countries* and *Busmod*, but we did not find a positive direct relationship between *Islamic Finance* control variables and the performance of the banks. The results are similar regarding solvency and stability, continuing to confirm the *H0* hypothesis. Even in this case, the main effects of *FinSys* and *Countries* factors are significant. They can contribute to the banks' stability and capital performance but with other significant relationships from the interaction of *FinSys*, *Busmod* and *IBA* as well as the interaction between *Countries* and *Busmod*.

Continuing the analysis of variance, we perform the one-way MANOVA as an extension of one-way ANOVA. The MANOVA model is a multivariate analysis of variance used to determine whether there are any differences between two or more independent groups of a categorical independent variable in terms of two or more continuous dependent variables. Thus, we can continue to test the *H0* hypothesis considering both the dependent variable of stability and profitability. Table 2.5 also reports the MANOVA one-way model for ROE and CET1 dependent variables, respectively, for *FinSys* and *Busmod* and *FinSys* and *IBA*. Notably, we look at Wilk's Lambda to consider the likelihood ratio test,  $W=0.7372$ ,  $p=0.01$ , which indicates statistically significant results in both the interaction. Thus, there is a difference in combined profitability and capital ratios between the different *FinSys* structures, the bank *Busmod* concerning also the Islamic Banking activity (*IBA*). Finally, the one-way MANOVA is an omnibus test, which means that it indicates that there are differences in the groups, but it does not indicate the nature of those differences. Then, we use a MANOVA post hoc in STATA, which provides multivariate tests and linear combinations of the underlying design matrix of the MANOVA model. In this case, the MANOVA post hoc does not reveal distinct differences in testing multivariate terms. All models calculation and statistics are reported in Appendix B.

**Table 2.5 ANOVA and MANOVA Summary**

<i>ANOVA two-way</i>					
<i>Dependent Variables</i>		<i>ROE</i>			
<b>Factors</b>	<b>Partial SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Prob&gt;F</b>
Model	.13046439	4	.0326161	6.15	0.0001
FinSys	.11418591	2	.05709295	<b>10.76</b>	<b>0.0000</b>
Busmod	1,62E-03	1	1,62E-03	0.00	0.9861
Interaction	.00106082	1	.00106082	0.20	0.6553
Model	.35247063	10	.0352476	8.34	0.0000
Countries	.1582128	6	.0263688	<b>6.24</b>	<b>0.0000</b>
Busmod	.00149498	1	.00149498	0.35	0.5527
Interaction	.18699691	3	.0623323	14.75	0.0000
Model	.09881633	4	.02470408	34.78	0.0000
FinSys	.01252391	2	.00626196	<b>8.81</b>	<b>0.0002</b>
IBA	.04439297	1	.04439297	<b>62.49</b>	<b>0.0000</b>
Interaction	.00519745	1	.00519745	7.32	0.0075
<i>Dependent Variables</i>		<i>CET1</i>			
<b>Factors</b>	<b>Partial SS</b>	<b>df</b>	<b>MS</b>	<b>F</b>	<b>Prob&gt;F</b>
Model	.08283352	4	.02070838	25.81	0.0000
FinSys	.04851128	2	.02425564	<b>30.23</b>	<b>0.0000</b>
Busmod	.00265754	1	.00265754	<b>3.31</b>	<b>0.0705</b>
Interaction	.02983962	1	.02983962	37.20	0.0000
Model	.15695683	10	.01569568	40.28	0.0000
Countries	.13539519	6	.02256586	<b>57.91</b>	<b>0.0000</b>
Busmod	.00269314	1	.00269314	<b>6.91</b>	<b>0.0094</b>
Interaction	.00662534	3	.00220845	5.67	0.0010
Model	0.09881633	4	.02470408	34.78	0.0000
FinSys	.01252391	2	.00626196	<b>8.81</b>	<b>0.0002</b>

---

IBA	0.04439297	1	.04439297	<b>62.49</b>	<b>0.0000</b>
Interaction	.00519745	1	.00519745	7.32	0.0075

---



---



---

**MANOVA one-way**

---

<i>Dependent Variables</i>		<i>ROE, CET1</i>				
	<b>Statistic</b>	<b>df</b>	<b>F(df1)</b>	<b>F(df2)</b>	<b>F</b>	<b>Prob&gt;F</b>
<b>Wilks-Lambda</b>						
Model	0.7246	3	6.0	344.0	10.02	0.0000
FinSys	0.7372	2	4.0	344.0	<b>14.16</b>	<b>0.0000</b>
Busmod	0.9939	1	2.0	172.0	0.52	0.5929

<i>Dependent Variables</i>		<i>ROE, CET1</i>				
	<b>Statistic</b>	<b>df</b>	<b>F(df1)</b>	<b>F(df2)</b>	<b>F</b>	<b>Prob&gt;F</b>
<b>Wilks-Lambda</b>						
Model	0.5478	3	6.0	344.0	20.13	0.0000
FinSys	0.8631	2	4.0	344.0	<b>6.57</b>	<b>0.0000</b>
IBA	0.7515	1	2.0	172.0	<b>28.44</b>	<b>0.0000</b>

---

Source: authors own elaboration



## 2.5 Conclusions and further remarks

Few studies systematically review and examine banking systems that offer Islamic Finance products and services by focusing on the Dual, Conventional and Islamic Banking System. Particularly, the literature review in paragraph 2 reveals two related issues. Scholars have traditionally focused their studies on mere comparative analysis without considering different features between countries and systems analysed. Islamic Banking and Finance are marked by a lack of harmonisation and non-uniformity of rules and regulations in those countries offering Islamic banking products and services. This issue is related to the existence of different interpretations of Shariah. Studying banking stability and performance analysis in these countries is not correct because the banking system regulation structure can affect banks performance. Furthermore, current literature does not focus the attention also on the Double Financial System structure, where banking regulation is completely split. Following the taxonomy previously presented, this paper aims to identify the presence of the best banking system landscape that fits right with the Basel III regulation in terms of stability and profitability.

Looking at the whole sample, we found a well-supported level of *ROE*, slightly higher in *Double Regulated* financial system. This data is in line with literature that suggests that high capitalised banks have a lower cost of funding and better efficiency, which we found very low. Therefore, these findings are consistent with the existing literature since Basel III standards affect the banks business model and decision-making in terms of lending, funding, and capital, which necessarily affect banks profitability. Higher capitalised banks could reduce the opportunity cost of shareholders to take excessive risks implying lower debt costs for banks, henceforth higher *ROE*, and in line with Basel III regulation. This assumption is also confirmed by a favourable and sometimes strong significant relationship resulted by Pearson correlation analysis. Then, ANOVA and

---

MANOVA models highlight a significant statistical relationship between the financial system structure, countries analysed, and business model adopted with the banks' capital and profit performance. This preliminary analysis confirms the H<sub>0</sub> hypothesis. As a matter of fact, in those countries where the footprint of Islamic Banking is significant, there is a positive relationship with the profitability and stability of the banks. Notably, banks (Islamic and Conventional) carrying out an “*Islamic*” business model in the shape of “Islamic windows” or “Islamic Subsidiary” increase liquidity, profitability and stability with a good contribution to the risk-weighted capital, which necessarily affects the whole banking system resilience. Meanwhile, a preliminary analysis of the taxonomy also favourably those banking systems in which Islamic banking practice is regulated, going towards double-regulated financial systems like the Malaysia case.

Finally, regulators, bank managers and scholars could consider data provided in this paper, starting from the taxonomy. Further research could also consider the financial system related variables in the quantitative analysis to provide a strong relationship between banking regulation, countries characteristics, banking business model, and finally, banking stability and profit performance. They could more consider alternative financial system architecture as well as Dual Financial System, which could be more stable in terms of capital and profit performance. Dual Financial System principles and features could also help policymakers and regulators developing a better financial system solving the standardisation issue which characterised Islamic Finance Systems.

### Appendix A. Description of Variables

	<b>Variable</b>	<b>Definition</b>	<b>Code</b>
<b>Taxonomy Variables</b>	<b>Financial System Architecture</b>	Based on the Financial System taxonomy in table 2 this variable can take three values: 1 - Double Regulated, where Islamic Banking Business is Regulated, particularly Islamic Banking law lives side by side the Conventional 2 - Not Allowed, refers to a Fully Conventional Banking System where Islamic Banking is not allowed, 3 – Unregulated, where Islamic Banking Business is not regulated and not prohibited	FinSys
	<b>Business Model</b>	A dummy variable that equals to 0 for banks which carry out Shariah <i>non-compliant</i> business model and 1 for others	BusMod
	<b>Islamic Banking Activity</b>	A dummy variable that equals 1 for banks (also Conventional) carrying out Islamic Banking activity offering products and services Shariah Compliant and 0 for any other	IBA
<b>Performance Variables</b>	<b>Growth of GDP</b>	The annual percentage growth rate of a country's GDP	GDPg_year
	<b>Size</b>	The natural logarithm of total asset, calculated to capture the differences in bank characteristics which could affect bank stability and performance	Size
	<b>Deposit to Liability</b>	Deposit Ration, the ratio of the total amount of bank's deposits to the total liability	DepLiab
	<b>Capital Adequacy Ratio</b>	The ratio is a measurement of a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures. The capital adequacy ratio, also known as capital-to-risk weighted assets ratio (CRAR)	CAR
	<b>Common Equity Tier 1</b>	Common Equity Tier 1 (CET1) is a component of Tier 1 capital that consists mostly of common stock held by a bank or other financial institution	CET1
	<b>Return on Equity</b>	The ratio of income before taxes (to avoid countries fiscal policy bias) to the total common equity is a measurement of profitability	ROE
	<b>Return on Asset</b>	The ratio of income before taxes (to avoid countries fiscal policy bias) to the total asset is a measurement of profitability	ROA
	<b>Cost to Income</b>	The ratio of Total Selling, General and Administrative Expenses (as total bank business core costs) and the Net Income before taxes	CI

<b>Basel Leverage</b>	This is a non-risk-based leverage ratio and is calculated by dividing Tier 1 capital by the bank's average total consolidated assets (sum of the exposures of all assets and non-balance sheet items). The banks are expected to maintain a leverage ratio in excess of 3% under Basel III	Basel_Lev
<b>Loan to Deposit</b>	The loan-to-deposit ratio (LDR) is used to assess a bank's liquidity by comparing a bank's total loans to its total deposits for the same period	LD
<b>Texas Ratio</b>	The Texas Ratio takes the amount of a bank's and divides this number by the sum of the bank's <b>tangible common equity</b> and its loan <b>loss reserves</b> .	TexasRatio
<b>Net Fee and Commissions</b>	The ratio is the total amount of Net Fee and Commission to the Net operational income	NFC
<b>Net Interest and Dividend Income</b>	The ratio is the total amount of Net Interest and Dividend Income to the Net Operational Income to test the bank funding strategy and business model related to the profitability and stability assessment	NID

**Appendix B. Anova and Manova Stata Tables**

**Table B1 – Anova two-way for ROE – FinSys and Busmod**

Number of obs = 187      R-squared = 0.3216  
 Root MSE = .065002      Adj R-squared = 0.2830

Source	Partial SS	df	MS	F	Prob>F
Model	.35247063	10	.03524706	8.34	0.0000
Countries	.1582128	6	.0263688	6.24	0.0000
Busmod	.00149498	1	.00149498	0.35	0.5527
Countries#Busmod	.18699691	3	.0623323	14.75	0.0000
Residual	.74364818	176	.00422527		
Total	1.0961188	186	.00589311		

Source: authors own elaboration with Stata

**Table B2 – Anova two-way for ROE – Countries and Busmod**

	Number of obs =	187	R-squared =	0.1190	
	Root MSE =	.072841	Adj R-squared =	0.0997	
Source	Partial SS	df	MS	F	Prob>F
Model	.13046439	4	.0326161	6.15	0.0001
FinSys	.11418591	2	.05709295	10.76	0.0000
Busmod	1.620e-06	1	1.620e-06	0.00	0.9861
FinSys#Busmod	.00106082	1	.00106082	0.20	0.6553
Residual	.96565442	182	.00530579		
Total	1.0961188	186	.00589311		

Source: authors own elaboration with Stata

**Table B3 – Anova two-way for ROE – FinSys and IBA**

	Number of obs =	187	R-squared =	0.1228	
	Root MSE =	.072686	Adj R-squared =	0.1035	
Source	Partial SS	df	MS	F	Prob>F
Model	.13455432	4	.03363858	6.37	0.0001
FinSys	.0681996	2	.0340998	6.45	0.0020
IBA	.00446339	1	.00446339	0.84	0.3592
FinSys#IBA	.00061989	1	.00061989	0.12	0.7323
Residual	.96156449	182	.00528332		
Total	1.0961188	186	.00589311		

Source: authors own elaboration with Stata

**Table B4 – Anova two-way for CET1 – FinSys and Busmod**

	Number of obs =	179	R-squared =	0.3724	
	Root MSE =	.028324	Adj R-squared =	0.3580	
Source	Partial SS	df	MS	F	Prob>F
Model	.08283352	4	.02070838	25.81	0.0000
FinSys	.04851128	2	.02425564	30.23	0.0000
Busmod	.00265754	1	.00265754	3.31	0.0705
FinSys#Busmod	.02983962	1	.02983962	37.20	0.0000
Residual	.13959023	174	.00080224		
Total	.22242375	178	.00124957		

Source: authors own elaboration with Stata

**Table B5 – Anova two-way for CET1 – Countries and Busmod**

	Number of obs =	179	R-squared =	0.7057	
	Root MSE =	.01974	Adj R-squared =	0.6881	
Source	Partial SS	df	MS	F	Prob>F
Model	.15695683	10	.01569568	40.28	0.0000
Countries	.13539519	6	.02256586	57.91	0.0000
Busmod	.00269314	1	.00269314	6.91	0.0094
Countries#Busmod	.00662534	3	.00220845	5.67	0.0010
Residual	.06546692	168	.00038968		
Total	.22242375	178	.00124957		

Source: authors own elaboration with Stata

**Table B6 – Anova two-way for CET1 – FinSys and IBA**

	Number of obs =	179	R-squared =	0.4443	
	Root MSE =	.026653	Adj R-squared =	0.4315	
Source	Partial SS	df	MS	F	Prob>F
Model	.09881633	4	.02470408	34.78	0.0000
FinSys	.01252391	2	.00626196	8.81	0.0002
IBA	.04439297	1	.04439297	62.49	0.0000
FinSys#IBA	.00519745	1	.00519745	7.32	0.0075
Residual	.12360742	174	.00071039		
Total	.22242375	178	.00124957		

Source: authors own elaboration with Stata

**Table B7 – Manova one-way for ROE and CET1 – FinSys and Busmod- interaction**

	Number of obs =	177				
	W = Wilks' lambda	L = Lawley-Hotelling trace				
	P = Pillai's trace	R = Roy's largest root				
Source	Statistic	df	F(df1,	df2) =	F	Prob>F
Model	W 0.7246	3	6.0	344.0	10.02	0.0000 e
	P 0.2763		6.0	346.0	9.24	0.0000 a
	L 0.3789		6.0	342.0	10.80	0.0000 a
	R 0.3756		3.0	173.0	21.66	0.0000 u
Residual		173				
FinSys	W 0.7372	2	4.0	344.0	14.16	0.0000 e
	P 0.2628		4.0	346.0	13.09	0.0000 a
	L 0.3564		4.0	342.0	15.23	0.0000 a
	R 0.3562		2.0	173.0	30.81	0.0000 u
Busmod	W 0.9939	1	2.0	172.0	0.52	0.5929 e
	P 0.0061		2.0	172.0	0.52	0.5929 e
	L 0.0061		2.0	172.0	0.52	0.5929 e
	R 0.0061		2.0	172.0	0.52	0.5929 e
Residual		173				
Total		176				

e = exact, a = approximate, u = upper bound on F

Source: authors own elaboration with Stata

**Table B8 – Manova post-test for ROE and CET1 – FinSys and Busmod- interaction**

W = Wilks' lambda      L = Lawley-Hotelling trace  
P = Pillai's trace      R = Roy's largest root

Source	Statistic	df	F(df1,	df2) =	F	Prob>F
FinSys Busmod	W	0.7246	3	6.0	344.0	10.02 0.0000 e
	P	0.2763		6.0	346.0	9.24 0.0000 a
	L	0.3789		6.0	342.0	10.80 0.0000 a
	R	0.3756		3.0	173.0	21.66 0.0000 u
Residual		173				

e = exact, a = approximate, u = upper bound on F

Source: authors own elaboration with Stata

**Table B9 – Manova one-way for ROE and CET1 – FinSys and IBA - interaction**

Number of obs =      177

W = Wilks' lambda      L = Lawley-Hotelling trace  
P = Pillai's trace      R = Roy's largest root

Source	Statistic	df	F(df1,	df2) =	F	Prob>F
Model	W	0.5478	3	6.0	344.0	20.13 0.0000 e
	P	0.4735		6.0	346.0	17.89 0.0000 a
	L	0.7864		6.0	342.0	22.41 0.0000 a
	R	0.7334		3.0	173.0	42.29 0.0000 u
Residual		173				
FinSys	W	0.8631	2	4.0	344.0	6.57 0.0000 e
	P	0.1393		4.0	346.0	6.48 0.0000 a
	L	0.1558		4.0	342.0	6.66 0.0000 a
	R	0.1351		2.0	173.0	11.69 0.0000 u
IBA	W	0.7515	1	2.0	172.0	28.44 0.0000 e
	P	0.2485		2.0	172.0	28.44 0.0000 e
	L	0.3307		2.0	172.0	28.44 0.0000 e
	R	0.3307		2.0	172.0	28.44 0.0000 e
Residual		173				
Total		176				

e = exact, a = approximate, u = upper bound on F

Source: authors own elaboration with Stata



**Table B10 – Manova post-test for ROE and CET1 – FinSys and IBA - interaction**

		W = Wilks' lambda		L = Lawley-Hotelling trace			
		P = Pillai's trace		R = Roy's largest root			
Source	Statistic	df	F(df1,	df2) =	F	Prob>F	
FinSys IBA	W	0.5478	3	6.0	344.0	20.13	0.0000 e
	P	0.4735		6.0	346.0	17.89	0.0000 a
	L	0.7864		6.0	342.0	22.41	0.0000 a
	R	0.7334		3.0	173.0	42.29	0.0000 u
Residual		173					

e = exact, a = approximate, u = upper bound on F

Source: authors own elaboration with Stata

## References

- Abedifar, P., Molyneux, P., Amine, T. (2013). Risk in Islamic Banking. *Review of Finance*, Vol. 17, 6, pp.- 2035-2096.
- Ahmad Aref Almazari, 2013. "Capital Adequacy, Cost Income Ratio and the Performance of Saudi Banks (2007-2011)," *International Journal of Academic Research in Accounting, Finance and Management Sciences*, Human Resource Management Academic Research Society, *International Journal of Academic Research in Accounting, Finance and Management Sciences*, vol. 3(4), pages 284-293, October.
- Ajmi, A.N., Hammoudeh, S., Nguyen, D.K., Sarafrazi, S. (2014). "How strong are the causal relationships between Islamic stock markets and conventional financial systems? Evidence from linear and nonlinear tests," *Journal of International Financial Markets, Institutions and Money*, Elsevier, vol. 28(C), pages 213-227.
- Alam, N., Binti Zainuddin, S.S., Rizvi, SAR, (2019). "Ramifications of varying banking regulations on performance of Islamic Banks," *Borsa Istanbul Review*, Research and Business Development Department, Borsa Istanbul, vol. 19(1), pp. 49-64, March.

- 
- Al-Hares, O. M., AbuGhazaleh, N. M., & El-Galfy, A. M. (2013). Financial Performance And Compliance With Basel III Capital Standards: Conventional vs. Islamic Banks. *Journal of Applied Business Research (JABR)*, 29(4), 1031-1048.
  - Almazari, A.A. (2013), Capital adequacy, cost-income ratio and the performance of Saudi banks (2007-2011). *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3(4), 284-293.
  - Alqahtani, F., Mayes, D.G., (2018). "Financial stability of Islamic banking and the global financial crisis: Evidence from the Gulf Cooperation Council," *Economic Systems*, Elsevier, vol. 42(2), pp. 346-360.
  - Andries, A.M. (2009). "What Role Have Banks in Financial Crises?" *Review of Economic and Business Studies*, Alexandru Ioan Cuza University, Faculty of Economics and Business Administration, issue 3, pages 149-159, May.
  - Avgouleas, E.; Goodhart, C. (2015). "Critical Reflections on Bank Bail-ins," *Journal of Financial Regulation*, Oxford University Press, vol. 1(1), pages 3-29.
  - Bananuka, J., Mukyala, V., Tumwebaze, Z., Ssekakubo, J., Kasera, M. and Najjuma, M.S. (2020), "The intention to adopt Islamic financing in emerging economies: evidence from Uganda", *Journal of Islamic Accounting and Business Research*, Vol. 11 No. 3, pp. 610-628.
  - Bank for International Settlement (BIS), [www.bis.org](http://www.bis.org)
  - Bank Indonesia, (2008). Acts Nr. 21/2008 on Sharia (Islamic) Banking. [https://www.bi.go.id/en/tentang-bi/uu-bi/Documents/act\\_21\\_2008.pdf](https://www.bi.go.id/en/tentang-bi/uu-bi/Documents/act_21_2008.pdf)
  - Bank Negara Malaysia, (2009). Central Bank of Malaysia Act. [https://www.bnm.gov.my/index.php?ch=en\\_legislation&pg=en\\_legislation\\_act&ac=486&full=1&lang=en](https://www.bnm.gov.my/index.php?ch=en_legislation&pg=en_legislation_act&ac=486&full=1&lang=en)
  - Bank of England, available on-line <https://www.bankofengland.co.uk/knowledgebank/are-financial-crises-like-fires>

- Barth, J.R., Lin, Chen & Ma, Yue & Seade, Jesús & Song, Frank M., (2013). "Do bank regulation, supervision and monitoring enhance or impede bank efficiency?" *Journal of Banking & Finance*, Elsevier, vol. 37(8), pp. 2879-2892.
- Beck, T., Demirguc-Kunt, A., Merrouche, O. (2013). "Islamic vs. conventional banking: business model, efficiency and stability," *Journal of Banking & Finance*, Elsevier, vol. 37(2), pages 433-447.
- Beddoes, Z.M. (1999). *The International Financial System*. *Foreign Policy*, 166, pp.16-27
- Bitar, M., Hassan, M. K. and Pukthuanthong, K., and Walker, T.J. (2018). *The Performance of Islamic vs. Conventional Banks: Evidence on the Suitability of the Basel Capital Ratios*. Forthcoming *Open Economic Review*. Available at SSRN: <https://ssrn.com/abstract=3138225>
- Bitar, M., Kabir Hassan, M., Hippler, W.J., 2018. "The determinants of Islamic bank capital decisions," *Emerging Markets Review*, Elsevier, vol. 35(C), pp. 48-68.
- Calomiris, C. W. and Mason, J. R. (2003). Consequences of bank distress during the great depression. *American Economic Review*, 93(3), 937–947.
- Central Bank of the UAE, (1983). *Islamic Banking Law of 1983*. <https://www.centralbank.ae/en/laws-and-regulations/legislation>
- Cornett, M.M, Guo, L., Khaksari, S., Tehranian, H. (2010). "The impact of state ownership on performance differences in privately-owned versus state-owned banks: An international comparison," *Journal of Financial Intermediation*, Elsevier, vol. 19(1), pages 74-94, January.
- Credit Suisse Research Institute, 2019 (October), *Global Wealth Report 2019*, available on-line <https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html>
- Dermine, J. (2015). Basel III leverage ratio requirement and the probability of bank runs. *Journal of Banking & Finance*, Vol. 53, page 266-277
- Farooq, M. and Zaheer, S. (2015). Are Islamic banks more resilient during financial panics? *Pacific Economic Review*, Vo. 20, 1, pp. 101-124.

- 
- Farooqi, M. and O'Brien, J. (2019), "A comparison of the impact of the Basel standards upon Islamic and conventional bank risks in the Gulf state region", *Journal of Islamic Accounting and Business Research*, Vol. 10 No. 2, pp. 216-235.
  - Financial Stability Board, [www.fsb.org](http://www.fsb.org)
  - Fratianni, M. and Pattison, J. (2002). *International Financial Architecture and International Financial Standards*. *The Annals of American Academy of Political and Social Science*. Vol. 579, Exchange Rate Regimes and Capital Flows, pp. 183-199
  - Ginting, L. M.; Ruhana, N.; Abdul Halim, N. H. H. and Finieli, S. T. (2019), "Legal and Regulatory Framework of Islamic Banking and Finance: A Study in Singapore", *International Journal of Management and Applied Research*, Vol. 6, No. 4, pp. 234-244.
  - Hammoudeh, S., Mensi, W., Reboredo, J.C., Nguyen, D.K. (2014). "Dynamic dependence of the global Islamic equity index with global conventional equity market indices and risk factors," *Pacific-Basin Finance Journal*, Elsevier, vol. 30(C), pages 189-206.
  - Hancock, D., Berger, A.N., Humphrey, D.B. (1992). "Bank efficiency derived from a profit function," *Finance and Economics Discussion Series 211*, Board of Governors of the Federal Reserve System (U.S.), revised 1992.
  - Harzi, A. (2012). *The impact of Basel III on Islamic banks: A theoretical study and comparison with conventional banks*. Paper presented first time at the research chair "ethics and financial norms" of University Paris.
  - Hassan, A. and Mollah, S. (2018). *Islamic Finance. Ethical Underpinnings, products and Institutions*. *Palgrave Macmillan, Springer Nature*.
  - Hassan, M.K., Aliyu, S., Paltrinieri, A., Khan, A. (2018). *A review of Islamic Investment Literature. Special Section: Understanding Indonesia's Economic and Financial Systems*. *Economic Papers*. The economic papers of Australia, 2018.
  - Hassan, MK, Sirajo, A. (2018). *A contemporary survey of Islamic banking literature*. *Journal of Financial Stability*, Vo. 34, pp. 12-43.

- Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica* 46: 1251–1271.
- Hidayat, S.E., Nadeem, M.M., AlMadaifa, A.J., Ali, Z. (2018). Impacts of Basel III on Islamic Finance. *Journal of Islamic Financial Studies*, 4, No. 2, pp. 122-123
- Hussain, M., A. Shahmoradi, R. Turk. (2015). "Overview of Islamic Finance," IMF Working Paper, International Monetary Fund, Washington, DC.
- Jan Willem van den End, 2013. "A macroprudential approach to address liquidity risk with the Loan-to-Deposit ratio," DNB Working Papers 372, Netherlands Central Bank, Research Department.
- Jesswein, K. R. (2009). Bank Failure Models: A Preliminary Examination of the "Texas" Ratio. Paper presented at the Allied Academies International Conference, New Orleans.
- Johnes, J., Isseldin, M., Pappas, V. (2014). A comparison of performance of Islamic and conventional banks 2004-2009. *Journal of Economic Behavior & Organization*, Vo. 103, Special Issue, pp. S93-S107.
- Khan, H.R. Deputy Governor of the Reserve Bank of India, at Bancon 2011, organised by the Indian Bankers Association and Indian Overseas Bank, Chennai, 4 November 2011. "Financial inclusion and financial stability: are the two sided of the same coin?"
- Kim, K., Kristiansen, E. G., Vale, B. (2005). Endogenous product differentiation in credit markets: What do borrowers pay for? *Journal of Banking & Finance*, 29(3), 681–699.
- Mehran, H., and Thakor, A. V. (2011). Bank capital and value in the cross-section. *Review of Financial Studies*, 24(4), 1019–1067.
- Merrouche, O., Detragiache, M. and Demirgüç-Kunt, A. (2010). "Bank Capital; Lessons From the Financial Crisis," IMF Working Papers 10/286, International Monetary Fund.
- Merton, R.C. (1995). A Functional Perspective of Financial Intermediation. *Financial Management*, Vol. 24, No. 2, Silver Anniversary Commemoration (Summer, 1995), pp. 23-41.

- 
- Monetary Authority of Singapore – MAS (2009). *Guidelines on the Application of Banking Regulations to Islamic Banking*. <https://www.mas.gov.sg/regulation/guidelines/guidelines-on-application-of-banking-regulations-to-islamic-banking>
  - Nguyen, QTT, Gan, C. and Li, Z. (2019). "Bank capital regulation: How do Asian banks respond?". *Pacific-Basin Finance Journal*, Elsevier, vol. 57(C).
  - Pop, A. (2006). Market Discipline in International Banking Regulation: Keeping the Playing Field Level. *Journal of Financial Stability*, Vol. 2, No. 3, pp. 286-310, October 2006. Available at SSRN: <https://ssrn.com/abstract=935587>
  - Resti, A. (2008). *Pillar II in the New Basel Accord – The Challenge of Economic Capital*. Risk Books, London, 2008
  - Ryu, KP., Piao, SZ., Nami, D. (2012). A comparative study between the Islamic and Conventional banking systems and its implications. *Scholarly Journal of Business Administration*, Vol. 2(5), pp. 48-54.
  - Salman, A., Nawaz, H. (2018). Islamic financial system and conventional banking: A comparison. *Arab Economic and Business Journal*, Vo. 13, 2, pp. 155-167.
  - Saudi Arabian Monetary Authority, (1966). Banking Control Law act of 1966. <http://www.sama.gov.sa/en-US/Laws/BankingRules/%D9%86%D8%B8%D8%A7%D9%85%20%D9%85%D8%B1%D8%A7%D9%82%D8%A8%D8%A9%20%D8%A7%D9%84%D8%A8%D9%86%D9%88%D9%83.pdf>
  - Saunders, A. (2015). "Is Basel Turning Banks into Public Utilities?". *Journal of Financial Perspectives*, Vol. 3, No. 1, 2015. Available at SSRN: <https://ssrn.com/abstract=3080250>
  - Saunders, A. and Walter, I. (2012). "Financial architecture, systemic risk, and universal banking," *Financial Markets and Portfolio Management*, Springer; Swiss Society for Financial Market Research, vol. 26(1), pages 39-59, March.
  - Saunders, A., Strock, E, Travlos, N.G. (1990), Ownership Structure, Deregulation, and Bank Risk Taking. *The Journal of Finance*, 45, pp. 643-654

- Siraj, K & Pillai, P. (2012). Comparative Study on Performance of Islamic Banks and Conventional Banks in GCC Region. *Journal of Applied Finance and Banking*, Vol. 2 n.3, 123-161
- Smolo, E. and Habibovic, E. (2012). Barriers to Growth of Islamic Finance: Issue of Standardisation. In book: *Islamic Banking and Finance: Principles, Instruments and Operations*, Edition: 1st, Chapter: 29, Publisher: The Malaysian Current Law Journal, Editors: Adnan Trakic, Hanifah Haydar Ali Tajuddin, pp.715-737
- Strock, E., Saunders, A., Travlos, N.G. (1988). "Ownership structure, deregulation, and bank risk taking," *Proceedings 199, Federal Reserve Bank of Chicago*.
- Swamy, V. (2018). Basel III capital regulations and bank profitability. *Review of Financial Economics*, 00, 1–14.
- Tahir-ul-Qadri, M. (2019). Standardisation in the Islamic banking & financial system. In book: *The Growth of Islamic Finance and Banking*, pp. 6-31. Innovation, Governance and Risk Mitigation. Edited By Hussain Mohi-ud-Din Qadri, M. Ishaq Bhatti
- Tariq, A. (2015). *Islamic Finance and the New Financial System: An Ethical Approach to Preventing Future Financial Crises*. Wiley Finance, John Wiley & Sons, 2015
- The Bank Association of Turkey, (2013). Banking Law N. 5411/2013. [https://www.tbb.org.tr/en/Content/Upload/Dokuman/130/Banking\\_Law\\_No\\_5411-3bsm.pdf](https://www.tbb.org.tr/en/Content/Upload/Dokuman/130/Banking_Law_No_5411-3bsm.pdf)
- Tutino, F. (2018). The imperfect bank: risks, regulation and the possible change. *Bancaria*, 9, 2018
- Van den End, Jan Willem, A Macroprudential Approach to Address Liquidity Risk with the Loan-to-Deposit Ratio (2013). De Nederlandsche Bank Working Paper No. 372. Available at SSRN: <https://ssrn.com/abstract=2228599> or <http://dx.doi.org/10.2139/ssrn.2228599>
- Van den Heuvel, S. (2006). "The Bank Capital Channel of Monetary Policy". Meeting Papers 512, Society for Economic Dynamics.

- 
- Williams, J., Nguyen, N., (2005). Financial liberalisation, crisis, and restructuring: A comparative study of bank performance and bank governance in South East Asia. *Journal of Banking & Finance*
  - Yaacob, H. and A. Abdullah. (2012). Standards Issuance for Islamic Finance in International Trade: Current Issues and Challenges Ahead, *International Congress on Interdisciplinary Business and Social Sciences 2012 (ICIBSoS 2012)* 65, pp. 492-497.
  - Yanikkaya, H., Gumus, N., Pabuccu, YU, (2018). "How profitability differs between conventional and Islamic banks: A dynamic panel data approach," *Pacific-Basin Finance Journal*, Elsevier, vol. 48(C), pages 99-111.
  - Zins, A. and Weill, L. (2017). *Islamic banking and risk: The impact of Basel II. Economic Modelling*, Elsevier, vol. 64(C), pages 626-637.
  - Zulhibri, M. and Ghazal, R. (2014). "Standardisation of Islamic banking practices: a regulatory perspective," *Afro-Asian Journal of Finance and Accounting*, Inderscience Enterprises Ltd, vol. 4(1), pp. 1-25.





## **Part 2 – Financial Markets**

### **Chapter 3**

# **Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review**

---

**Abstract:** Focusing on the comparison of Islamic Stock Market (ISM) and Conventional counterparts, this paper tries to answer to the following questions: “Are Islamic indexes a ‘Safe Haven’ for investors?”, and “Does Islamic equity investment provide diversification benefits to Conventional investors?”. Performing a systematic literature review on a sample of articles published in academic journals from 2009 to 2019, we show a lack of consensus on the answers. Until the present day, most contributions focused on contraposition of the two systems, trying to verify the presence of decoupling, contagion, interdependence or relationship between these two realities. The taxonomy provided suggests a need to change of mindset which could supply several implications in financial

decisions, including asset allocation strategies of individual and institutional investors as well as policymakers' decisions, in order to contribute developing a more resilient, inclusive and sustainable financial system. Finding results can be used to define a better financial system (in the stock market component), which is both more resilient to unexpected financial shocks and support the inception of a sustainable financial system.

---

*“It is necessary while formulating the problems of which in our advance we are to find the solutions, to call into council the views of those of our predecessors who have declared an opinion on the subject, in order that we may profit by whatever is sound in their suggestions and avoid their errors.”*

*Aristotle, De Anima, Book 1, chapter 2*

∞

### **3.1 Introduction**

The globalization, the modernization and the more frequent re-organization of the financial markets lead the reshaping and the reforms of all the global financial systems increasingly. More and more frequent financial turmoil generates the need for more resilient systems in which, among others, investors could focus on *ethically-oriented* and alternative investments. After the global financial crisis (2007-2009) and the European sovereign debt crisis in 2011, the global financial system faced a growth period supported by the economic recovery. Despite the resumption, according to the Global Financial Stability Report (2019), it persists an increase in the level of public and corporate debt, which have led to financial vulnerabilities phenomena. How to limit similar financial downturns in the future is thus a crucial relevant question. During the last decade, most of

the academics look at Islamic Financial System (IFS) (as *faith-based* financial system adherent to Islamic law), as an interesting touchstone displayed by elements of:

- i) *impact toughness and stability*: while the so-called Conventional Financial System emerged struggling from the last global financial crisis, the Islamic Financial System (IFS) has instead recorded a significant growth and resounding recovery, in the past three years.
- ii) *ethicality and sustainability*: the IFS has played a meaningful role in the global ethical economy, considering that the high proposition of social and ethical challenges is core in Islamic underpinnings (State of the Global Islamic Economy Report, 2019).

As a matter of fact, in 2018, Islamic Finance rapidly grew, taking advantage of the rebound in the price of oil and other export commodities as well as a notable improvement in sustainable and ethical finance. According to the Islamic Financial Services Industry (IFSI) Stability Report 2019, the total worth of Islamic Banking, Islamic Capital Market (ICM) and Takaful, which surpassed the considerable landmark USD 2 trillion for the first time in 2017, has further increased to USD 2.19 trillion in 2018 on the back of significant improvement across all the three sectors of the Islamic Financial Services Industry. Notably, the ICM sector continues to record improved developments in 2018, accounting for 27% of global IFSI asset, worth about USD 591.9 billion. A plausible reason could be that, after the global financial crisis up to the present day, investors and portfolio managers are eagerly exploring alternative forms of investments (Usman et al. 2019). Islamic Finance practices may provide new instruments for portfolio risk management. The underlying assumption is that Islamic instruments could be used to deploy a diversification strategy. There is a part of 'eliminable risk' called specific risk, which can be removed by optimum diversification, the systematic risk is intrinsic and naturally presents in any investment (Jawadi et al. 2019). Since Islamic Finance acts compliant with the application of Shariah rules (or Islamic laws),

## 85 Islamic stock market versus conventional: Are Islamic investing a 'Safe Haven' for investors? A systematic literature review

---

it can be considered an alternative financial landscape for investors who aim to reduce the systematic risk and thereby uncertainty effects (Jawadi et al. 2019). As a matter of fact, Islamic investing based on philosophical, religious and moral convictions, represents an interesting opportunity for "alternative investors" (Elmelki and Ben Arab, 2009) Using Islamic Finance principles, portfolio managers and investors may exploit the ethical dimension, also paying attention to the social and environmental performance and linked risks. The Islamic Finance framework consists of an *ethically oriented* trade system and boasts the presence of social and responsible investments as well as sustainable finance and banking, on a highly regulated financial system. These ethical and moral assumptions and high caution of Islamic investments make this alternative financial system a "*safe haven*" (Jawadi et al. 2014) to improve performance, especially in stormy times with high conventional financial risk. Furthermore, Islamic Finance compliant with the religious principles, is based on the idea of a portfolio screening allocation according to a set of ethical constraints (Wilson, 1997; Forte e Miglietta, 2011).

These aspects provide the opportunity to improve the global financial system by both enhancing the completeness of financial markets (integrating the Islamic one), and better-supporting countries where double financial systems are already in force. The IFS was closed within borders marked by the religion so far. Therefore, they were not economic-financial choices problems (Miglietta, 2009). Today, Islamic finance has been developing so quickly evolving from a nascent industry to a global market, where Islamic and non-Islamic people are working together and learning from each other for the development of new products and services (Hassan and Mollah, 2018). However, Islamic Finance is no longer just a way to allow Islamic people to exploit financial services, observing Shariah laws. Islamic Finance is thus a full-fledged widespread and organized financial system, easily accessible to all operators, which coexists alongside the Conventional one. Therefore, the Islamic Financial System, has been registered activity not only in the Muslim countries

but also in some important financial and business centres, could provide alternative practices and instruments to the Conventional peer.

Starting from the renewed attention of the academics, investors, and policymakers on IFS, this paper is focused on the Islamic Stock Market (ISM) compared with the Conventional one. In particular, we perform a systematic literature review (Abatecola et al. 2013; Crossan and Apaydin, 2010; David and Han, 2004; Tranfield et al. 2003), We aim to capture pieces of evidence contributing to define a better financial system (in the stock market component), which is both more resilient to unexpected financial shocks and support the inception of a Sustainable Financial System. In this context, a systematic review approach could provide a more comprehensive understanding of the knowledge in the field. The systematic review improves the quality of the review process and outcome by employing a transparent and reproducible procedure. It contributes to emphasize the main strands of interpretations provided by scholars as well as endogenous and exogenous variables which affected them. Recently growth and expansions of Islamic Finance and therefore of the literature may entail to a radical change in the approach to the research. In addition, the systematic review process is less exposed to the subjectivity of the author and the findings offer various directions of the research by uncovering gaps in the literature (Corbet et al. 2019, Tranfield et al. 2003). Previous literature reviews on this field are mere *theory-based* (Paul and Criado, 2020). They provide a comprehensive overview of literature related to the IFS focusing on the Islamic investments, like mutual funds, *Sukuk* and equity investments (Hassan et al. 2018), the Islamic Financial System stability (Belouafi et al. 2015) and the performance during the Global Financial Crisis of 2008 (Diaw, 2015), and on Islamic equities performance and diversification benefits (Masih et al. 2018). Thus, as summarized in Table 1, all literature reviews excluding Paltrineri et al. 2018, who provide an extensive bibliometric literature review of *Sukuk*, use a *narrative* approach. Differently from previously reviews, we would like to verify if more recent literature on ISM has reached a unanimous conclusion in terms of benefits and capability. Following this aim, we try to

## **87 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review**

---

observe different financial systems like the Islamic one, in order to develop a resilient, sustainable and better financial system. Therefore, the time span observed start from 2009 to 2019, looking at before, during and after various global financial shocks.

Afterwards, with the support of previous contributions, we try to answer to these two questions: “*Are Islamic indexes a ‘Safe Haven’ for investors?*”, and “*Does Islamic equity investment provide diversification benefits to Conventional investors?*”. Considering their comparability, it is possible to verify the presence of a decoupling or contagion effect, above all in order to try to find new opportunities in portfolio management diversification and providing new approach of research. In doing so, this paper would firstly contribute to the debate by ordering the existing literature in the last decade and, secondly, aims at providing an extensive taxonomy of the main findings, highlighting the approaches and methodologies used. Finally, the suggested taxonomy makes it possible to identify a new approach to study Islamic Stock Market and the Conventional counterparts overcoming the comparative. Moreover, this paper considers the Islamic and Conventional stock market component also involving the most relevant indexes and mutual funds. We also consider different timespan covering more recent studies than previous literature papers. In this way, we try to capture the most relevant papers on this field systematically. Furthermore, as we mentioned before, summarizing in Table 3.1 several literature reviews studies in Islamic Finance topic, we highlight a lack under the methodology perspective. According to Paul and Criado (2020), review manuscripts must have *rigour* and *relevance*, which are not simple to ensure.

The remainder of this paper is organized as follows. In paragraph 2, Islamic and Conventional Stock Market differences and features are defined and explained. After having synthesized in paragraph 2.1, the fundamentals of Islamic Finance, section 2.2 highlights the reflections on the capital market. Research design and the data sample are described in paragraph 3, presenting a systematic review process of existing literature on ISM compared

with Conventional, reporting authors, journals, data and data span, methodology as well as final main results. Paragraph 4 presents the result. All the articles are thus classified aggregating them on the finding results categories. Finally, in the concluding remarks discussion of the results, and finding results implications and literature gaps are discussed.

**Table 3.1 Summary of literature review on Islamic Finance**

<b>Title</b>	<b>Authors</b>	<b>Topic</b>	<b>Methodology</b>
A bibliometric review of sukuk literature	Paltrinieri, Hassan, Bahoo, Khan (2019)	<ul style="list-style-type: none"> <li>analyse sukuk market with bibliometric review approach</li> </ul>	Bibliometric
A survey on Islamic Finance and accounting standards	Hassan, Aliyu, Huda, Rashid (2019)	<ul style="list-style-type: none"> <li>focus on Islamic financial accounting standards and their impact</li> </ul>	Narrative
Issues in Islamic Equities: A Literature Survey	Masih, Kamil and Bacha (2018)	<ul style="list-style-type: none"> <li>analyses comparative performances of Islamic equities and their conventional counterparts during and after last Global Financial Crisis 2008</li> <li>comparative performance of Islamic portfolio with SRI funds and portfolio diversification benefit</li> </ul>	Narrative
A Review of Islamic Investment Literature	Hassan, Aliyu, Paltrinieri and Khan (2018)	<ul style="list-style-type: none"> <li>focus on mutual funds, sukuk and equity investments</li> </ul>	Narrative
A contemporary survey of Islamic banking literature	Hassan, Aliyu (2018)	<ul style="list-style-type: none"> <li>focus on Islamic banking</li> </ul>	Narrative
The global financial crisis and Islamic finance: a review of selected literature	Diaw (2015)	<ul style="list-style-type: none"> <li>analyses the writings of Islamic economists and</li> </ul>	Narrative



**89 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review**

		Shariah scholars on the GFC.	
Islamic Finance and Financial Stability: A Review of the Literature	Belouafi, Bourakba and Saci (2015)	<ul style="list-style-type: none"> <li>analyse the stability of IFS and conventional counterparts before, during and after the GFC 2008</li> </ul>	Narrative
Issues in Islamic banking and finance: Islamic banks, Shari’ah-compliant investment and sukuk	Ibrahim (2015)	<ul style="list-style-type: none"> <li>comparative review on Islamic banking and Islamic Capital Market</li> </ul>	Narrative
A synthesis of theoretical and empirical research on sukuk	Zulkhibri (2015)	<ul style="list-style-type: none"> <li>theoretical and empirical literature review on sukuk, focusing on features, structures, and their role on economic development</li> </ul>	Narrative
A Comparative literature survey of Islamic finance and banking	Zaher and Hassan (2001)	<ul style="list-style-type: none"> <li>comparative review on Islamic Finance and Banking focusing on features, instruments, and performance</li> </ul>	Narrative

Source: authors own elaboration

## 3.2 Islamic and Conventional Stock Market: what differences

### 3.2.1 Fundamentals of Islamic Finance and Stock Markets

Based on Shariah Law, IFS, particularly ISM, incorporates several significant differences compared to the Conventional (Arouri et al. 2013). Islamic Finance fundamentals, better known as Shariah rules, are rooted on five main principles which include the prohibition of i) interest (*Riba*), ii) excessive uncertainty (*Gharar*), iii) speculation (*Maysir*), iv) risk and return sharing and v) investing in ‘unethical’ industries (Hayat and Kraeusl, 2011). Thus, these features lie in a set of contracts and rules, setting up the main difference between Conventional and IFS. Nevertheless, there are other differences between the Islamic Stocks Markets compared to the Conventional. Firstly, the presence of sectoral restrictions distinguishes the Islamic industry, which concentrates its investments in innovation, technology, telecommunications, raw materials, health care, consumer goods, construction and real estate. Therefore, “*Shariah-compliant*” investments in the capital market include stocks of the real sector and exclude the financial one (particularly the Conventional financial sector does not consider ‘*Shariah-compliant*’). In compliance with the ban on the interest rate (*Riba*), Islamic Finance is defined as ownership-based and asset-driven finance, compared the Conventional system, interest-based and debt-driven. Consequently, the low leverage ratio of Islamic equities implies that firms require low-interest rates and have a lower level of volatility and risk compared to the Conventional ones. Additionally, low levels of accounts receivable theoretically imply a low bad debt in asset structure, which in deference with the Total Receivables ratio (Hoque et al. 2016). However, Islamic and Conventional stocks investments are similar under one aspect: investors purchase shares and sell them at an (hopefully) increased price (Hassan et al. 2018).

Generally, Islamic Finance instruments tend to minimize and manage systematic risk, compared to those of Conventional ones, which often separate risk from the underlying assets. According to Hassan and Mollah (2018), distinctive characteristics of Islamic Finance, resulting in competitiveness and efficiency, may contribute consistently to global development. Authors identify some other critical key drivers:

- 1) Shariah principles and injunctions are more flexible and practical than the past;
- 2) Regulators and supervisor scattered in all over the world started to support Islamic Finance industry;
- 3) IFS started to cooperate and converge towards standard corporate governance principles, prudential regulation and supervisory guidance, overall. The approach of IFS to the Conventional and the standardisation of some principles contribute to reducing “religious” borders;
- 4) The presence of innovative products, tailor-made constructed, as stock-options or warrants.

### 3.2.2 Market Reflections

Previously listed restrictions lay the foundations for screening criteria which firms admitted to the stock markets must respect in order to be classified as “*Shariah Compliant*” (permissible according to Islamic Law): Sector-based Screening Criteria and Financial Screening Criteria. The first ones check and ensure that the business activity is not involved in any “*Shariah non-compliant*” activities (sector exclusion). Financial ratio criteria feature the ISM, contributing to creating Islamic Stock Indices (Ho et al. 2011). The accounting ratio inclusion threshold and the non-permissible income threshold:

- 
- Total debt divided by the trailing 12-month average market capitalization has to be less than 33% (as Total Debt ratio);
  - Cash plus interest-bearing securities divided by the trailing 12-month average market capitalization has to be less than 33% (as Total Cash/Investment ratio);
  - Accounts receivable divided by the 12-month average market capitalization has to be less than 33% (as Total Receivables ratio);
  - Revenues from non-compliant activities are permissible as non-permissible Income to revenue if they comply with certain threshold: a maximum of 5% is permitted.

This screening methodology are able to ensure the sustainability of portfolio management activity, ensuring a new approach to maximize the return minimising the risk, adopting a “sustainable and ethical approach”, considering ethical investing “*as the use of ethical and social criteria to select and manage investment portfolio*” (Hussain et al. 2019; Cowton, 1994). The Dow Jones Islamic Market Index (DJIMI), was the first Islamic index, launched in 1999 in Bahrain. The Islamic Stock index foundation, as a “*Shariah-compliant*” index firstly addressed to Muslims' investors, was considered an epochal turning point. Afterwards, the “*Shariah standard on Financial Paper (Shares and Bonds)*” was adopted by the Shariah Board of the AAOIFI (Accounting and Auditing Organization for Islamic Financial Institution) in 2004. Recently, the development of Islamic capital markets has gathered a strong attraction from both Muslims and non-Muslims international investors. These events have promoted the birth of some other indices as FTSE Islamic Index and MSCI Islamic Index. These principles cover shares with respect to their issuance, flotation and trading. All these important features affect Islamic capital market, which could be considered a “safe haven” than Conventional peer in general and during financial downturns since their behaviour should be different during financial instability because they are not subject to the same type of risks, like financial and banking related risks (Abbes, 2012). According to the theory of fundamentals, “*stock returns comove due to either*

*correlated changes in cash flows or correlated changes in discount rate*”, resulting in a generally strong cointegration stock market. Instead, the discount rates variance is affected by the information set available about expectations in interest rates or asset risks perceptions. Therefore, the aggregate demand is the only possible cause of price movements (Hoque et al. 2016). Islamic economics and business tend to “stress” a fair socio-economic and more ethical system (Hassan and Mollah, 2018). It is founded to comply with Shariah guidelines, trying to integrate profitability and efficiency. This is one of the main distinctive features between conventional and Islamic economy and finance. Fundamentals of modern capitalism in Conventional system are built on the “*maximization of individual utility postulate*” while the Islamic principles require “*a balanced satisfaction of both material and spiritual needs of the human personality*” (Ben Rejeb, 2017). The high degree of ethical rules and features of Islamic investments and financial market involve that Islamic finance could be a good alternative to improve investments performance. Conventional financial assets have been accused of the excessive risk introduced into the financial systems by the implementation of innovative financial products (Arouri et al. 2012). As a matter of fact, Islamic investing origins are not very different from Socially Responsible Investment (SRI) or ethical investing. IFS is oriented towards an equitable financial system. According to Hassan and Mollah, 2018 “*Banks should look at the rules of Islamic Finance to restore confidence among their clients at a time of global economic crisis*”. Islamic Finance principles are born to be a helpful tool for the development process of Islamic Finance. As in the microfinance world, Islamic practices can contribute to creating a new inclusive financial system, reducing the distance to the poor and vulnerable groups (*inclusive finance*). Islamic Finance is not only a mere “selective” financial system based on religious criteria.

While ethical investment can be the result of a “negative screening process” (companies and market screening selection of companies not considered “E, S, or G” factors), the concept of “ethical” provided by Islamic investing could be the result of “positive screening criteria”. Islamic investments approach faces in good practices following the religious underpinnings (Elmelki and Ben Arab, 2009). In this way, Islamic investing respects the concept of ethicality, being at the same time inclusive, selective and compliant (La Torre and Vento, 2006). Islamic Screening Criteria certainly have something in common with classical SRI Screening Criteria, ethical and modern microfinance products, and services. They are some likeness in these financial mechanisms. For example, the presence of *zakah* (a tax deduction of 2,5% on Muslims' assets), as a donation from rich people to poor. IFS uses the *zakah* to guarantee the allocation and distribution of wealth and resources and non-profit organizations often collect it to finance inclusive and sustainable projects. Today Islamic economics has become a very important instrument to the economic growth of underdeveloped countries.

### 3.3 Research Design

The main objective of this paper is to analyse more recent literature on the Islamic Stock Market compared with the Conventional peer, trying to capture pieces of evidence of new opportunities in investors' portfolio management and diversification. In this way we intend to contribute to the debate on the definition of a better financial system which is both more resilient to unexpected financial shocks and support the inception of a Sustainable Financial System. The research methodology lies in a “*systematic literature review*” method, a process which synthesizes the previous results of research, with reproducible criteria in the selection of articles, limiting bias and random error (Cook et al. 1997; Brogi and Lagasio, 2019). Systematic literature reviews have become very useful and recognized

in many different disciplines (Paul and Criado, 2020). We resume main findings observed in a tidy and detailed taxonomy which allows to identify different literature results trying to reply to the need of a different point of view. The taxonomy is founded on a judgement process relied on the data analysis collected by different contributions and not the result of a qualitative meta-analysis. Following the systematic assessments process of the management literature (Abatecola et al. 2013; Crossan and Apaydin, 2010; David and Han, 2004; Tranfield et al. 2003), according to PRISMA Statement (Moher et al. 2009) showed below (Figure 2), and relying on Paul and Criado (2020) suggestions for developing an impactful review article, the research design is carried out as follow:

First stage: *planning*

1. Topic selection, definition of the objectives of the research: the aim of the research is trying to systematically answer to these two questions, “*Are Islamic indexes a “Safe Haven” for investors?*”, and “*Does Islamic equity investment provide diversification benefits to Conventional investors?*”. Research questions allow to identify differences and opportunities for Islamic and Conventional finance instruments in portfolio diversification strategy;
2. Database definition: Web of Science and Scopus Elsevier are selected as the research engines, as two of the most comprehensive bibliometric databases of peer-reviewed journals. Web of Science Core Collection includes the world’s leading scholarly journals, books, in the sciences, social sciences, and arts and humanities and navigate the full citation network (Science Citation Index Expanded (SCI-EXPANDED), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI), Conference Proceedings Citation Index- Social Science & Humanities (CPCI-SSH), Emerging Sources Citation Index (ESCI));

3. Inclusion criteria and time period: the selection process is settled by choosing all articles published from 2009 to 2019 (October) in top financial journals, written in English language and using the basic keywords combination for the following topic (TS, as title, keywords or abstract) with “and” and “or” Boolean operator: “Islamic” and “stock”, “index”, “mutual fund” and its derivatives (i.e. TS=stock\*, index\*, mutual fund\*)<sup>15</sup> and “Conventional”.<sup>16</sup> Keywords choice is supported by a pre-simulation test, performed to capture all the existing literature in the dataset. Previous words appear as the most suitable for this purpose, ensuring a large sample of relevant papers. Using “Islamic” and “Conventional” we capture both the financial system and comparative studies and “stock”, “index” and “mutual funds” words we include synonymous of “stock market” or “stock indexes” or “mutual funds” (often used in performance analysis of the stock market). Moreover, double database analysis allows involving the vast bulk of scientific papers in this field. The whole sample is also limited to economics, finance, business and management (ECON-BUSI) subject area. Finally, the sample is refined, including only scientific articles and excluding Conference Papers, Books or Book chapters.

Second stage: *execution*

4. Removing off-topic papers: topics exclusion is settled to focus about stock market issues and to ensure the comparability of the results: “Bank” and its derivatives, “Bonds” and “Sukuk”, “Takaful”, “REITs”, “Raw materials” (such as oil), various contractual forms (as *musharakah* and others) and all articles which analyse stock indices’ forecast and predictability, efficiency and investors’ behaviour;

---

<sup>15</sup> The asterisk at the end of a search word allowed for different suffixes (e.g. stock, stocks).

<sup>16</sup> Data sample is extracted on 24<sup>th</sup> September 2019. Second research is running on 9<sup>th</sup> July 2020.



5. Sample assessment: starting from the refined sample achieved in the previous phase, we ensure the relevance of the articles and avoid selection bias, by firstly read all abstracts checking for a discussion related to ISM compared with the Conventional (contagion, decoupling, stochastic dominance, risk-performance analysis, volatility). Ensuring the comparability of the results specific sectoral and country analysis have not been considered, regarding only to global and large compose indices;
6. Double Sample check: following the first sample check and assessment, we check and select the abstract of all the articles and then focusing on the full text. We also focus on papers aim and findings in order to ensure the relevance of the final sample. Sometimes the articles are the same included when main findings are evident in the abstract. This is allowed for the conclusive alignment between the chosen works and the research goals avoid selection bias;
7. Grouping: the sample check allows to ensure the systematic of the implemented process, which concern a substantial analysis (not meta-analytical based). "*Main objective*" and "*category*" used in the taxonomy, are processed following the previous step, analysing the articles text, particularly abstract and methodology, to identify the most relevant aim.

Third Stage: reporting

8. Consolidate results: previous stages allow to identify 4 categories in order to provide a taxonomy of literature (as Performance, Contagion or Decoupling Hypothesis, Relationship, and Others); combining them to 5 groups of publications corresponding to the macro-categories of articles' objective and main finding results (as 'Safe Haven', Determinants which affected the market, Islamic Stock Markets perform better than Conventional Counterparts, Rejection of Decoupling

9. Hypothesis, No significant differences in performance). Then, the taxonomy discussion is performed following 4 categories identify and referring to single paper analysed.

## 3.4 Results

### 3.4.1 Population of the sample and data extraction

According to the implemented methodology, this paper firstly provides a systematic review of current literature about Islamic Stock Market and Conventional counterparts. After the previous review process, the dataset is composed of an initial population of 196 papers extracted by Web of Science Database and 238 papers extracted by Scopus Database. Finding results are processed based on the application of selection criteria. Keywords (i.e. *Islamic, stock, index, mutual funds* and *Conventional*) and the data span are chosen considering the main objective of this paper, which contributes to putting in order the existing literature about performances, features and differences of the ISM compared with the Conventional. The first stage allows identifying a sample of articles filtering by Web of Science and Scopus Research Databases. After the global financial crisis of 2007-2008, and more after sovereign debt crises of 2011, interest for Islamic Finance topic, particularly for the Islamic Stock Market and the Conventional, is sizable grown up. This issue is recordable consider both the number of the publication per year and reporting the citation for each Database. Table 3.2 and Figure 3.1 presents some evidence of the increasing of research studies, based on Science Citation Index – Expanded (SCI-Expanded), Social Science Citation Index (SCII), Art and Humanities Citation Index (A&HCI), Social Science and Humanities (CPCI-SSH) and Emerging Sources Citation Index (ESCI), according to Web of Science Core Collection Database. They chart the growth of both publications and the increase of citations per year to documents including the

**99 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review**

keywords considered, during the period, and this number of citations divided by the total number, including the ‘*WoS h-index*’. These shreds of evidence confirm the growth of interest in Islamic Finance from academics in line with the massive expansion of IFS. Figures indicate that since 2013, the number of publications and citations has risen exponentially without exception, according to Islamic Financial Service Industry data.

**Table 3.2 Number of publications and citations/year (Web of Science)**

<b>Year</b>	<b>Number of publications</b>	<b>%</b>	<b>Citations</b>
2009	-	-	-
2010	-	-	-
2011	4	2,04%	3
2012	-	-	5
2013	4	2,04%	13
2014	8	4,08%	60
2015	23	11,73%	127
2016	29	14,80%	205
2017	41	20,91%	410
2018	33	16,83%	479
2019	53	27,04%	734
<b>Total</b>	196		2.036
<b>h-index*</b>			23
<b>Average Citation per item</b>			12,39

\*Note: Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI. Source: author’s own compilation on Web of Science Core Collection data

Further remarks are possible since the Scopus Database assessment presents the same features too. Table 3.3 and Figure 3.1 again, present the number of publications and citations even more significant. These results confirm a higher increase in the number of publications in recent years and an exponential increase in the number of citations after 2013, especially in the past three years. Particularly, in 2017-2019 the number of publications on this field grew by 20% with +123 papers than previous years and ever-increasing number of citations in this topic. In 2019 it records a record in the number of

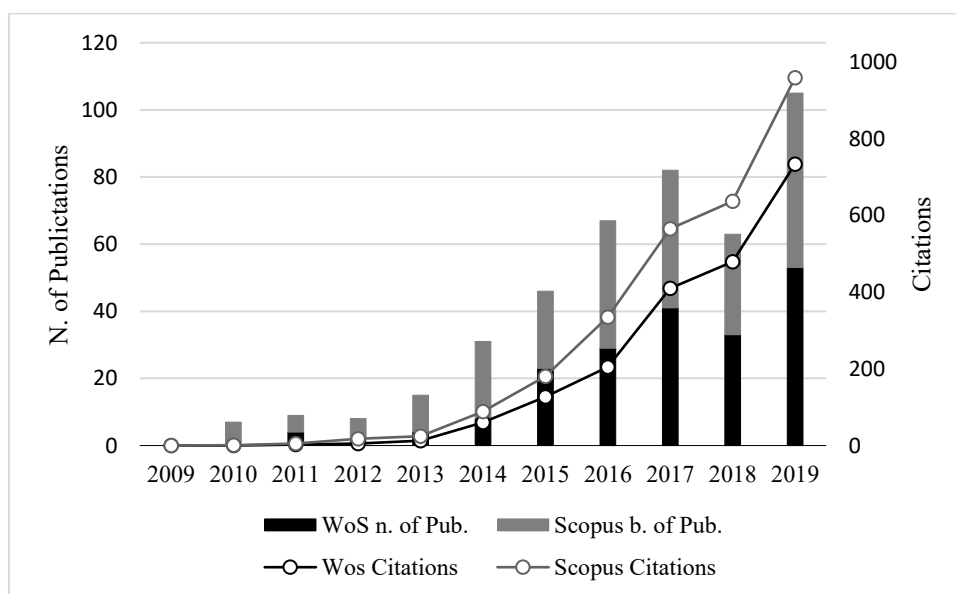
published papers. This is relevant since previous literature review time sample stopped in 2017.

**Table 3.3 Number of publications and citations/year (Scopus)**

Year	Number of Publication	%	Citations
2009	-	-	-
2010	7	2,94%	1
2011	5	2,10%	5
2012	8	3,36%	18
2013	11	4,62%	24
2014	23	9,66%	89
2015	23	9,66%	180
2016	38	15,97%	335
2017	41	17,23%	565
2018	30	12,60%	637
2019	52	21,86%	959
<b>Total</b>	<b>238</b>		<b>2.813</b>
<b>h-index</b>			<b>29</b>

Source: author’s compilation on Scopus data

**Figure 3.1 Growth per year (Web of Science and Scopus)**



Source: author’s compilation on Web of Science Core Collection and Scopus Database data

Formerly, the application of exclusion criteria allows ensuring results' comparability paying attention to just the share component of the capital market. In this regard articles concerning bonds (and *sukuk*), insurance (and *takaful*), and REITs market are excluded limiting the perimeter of the capital market. In the same way, terms like 'Bank' and its derivatives are removed not to consider bank performance analysis or similar. To avoid selection bias and to ensure and focus on the comparability of the results, specific country and sectoral analysis are removed from the data sample. In this way, the literature review process focuses the attention on the large and world market indices try to catch global trends. In sum, the final dataset is both composed by a final population of 74 papers from Web of Science Database and 86 papers from Scopus Database, all published between 2009 and 2019 (October). There are 60 papers present in both databases. Finally, the full sample consist of 100 papers. Afterwards, this leads to building a database of articles published in top business, financial and economics journals from 2009 to 2019 (October), summarized in Appendix A. The distribution of articles by journals is also reported in Table 3.4.

**Table 3.4 Database Journal list**

<b>Name of the journal (number of publications/journal)</b>	<b>Abbreviation</b>
Annals of Operations Research (1)	AOR
Applied Economics (4)	AE
Applied Economics Letters (2)	AEL
Asian Academy of Management Journal of Accounting and Finance	JAF
Borsa Istanbul Review (4)	BIR
Business Etichs-A European Review	BEER
DLSU Business and Economics Review	DLSU
Economic Modelling (2)	EM
Economic Systems (1)	ES
Economics Bulletin (1)	EB

---

Emerging Markets Finance and Trade (3)	EMFT
European Journal of Finance (1)	EJF
European Journal of Management and Business Economics	EJMBE
Financial Markets Institutions and Instruments (1)	FMII
Financial Research Letters	FRL
International Economics (2)	IE
International Journal of Applied Business and Economic Research (1)	JABER
International Journal of Business and Society (1)	IJBS
International Journal of Economic Research (1)	IJER
International Journal of Emerging Markets (1)	IJEM
International Journal of Euro-Mediterranean Studies (1)	IJEMS
International Journal of Financial Studies (1)	IJFS
International Journal of Islamic and Middle Eastern Finance and Management (3)	IJIMEF
International Research Journal of Finance and Economics (1)	IRJFE
International Review of Economics and Finance (1)	IREF
International Review of Finance (1)	IRF
International Review of Financial Analysis (3)	IRFA
Investment Management and Financial Innovations (1)	IMFI
Istanbul Business Research (1)	IBR
Journal of Advanced Research in Law and Economics (1)	JARLE
Journal of Applied Business Research (2)	JABR
Journal of Asia-Pacific Business (1)	JAPB
Journal of Asset Management (1)	JAM
Journal of Business Ethics (1)	JBE
Journal of Economic Behavior Organization (3)	JEBO
Journal of International Financial Markets, Institutions & Money (6)	JFMIM
Journal of Islamic Marketing (1)	JIM
Journal of King Abdulaziz University (1)	JKAU
Journal of Management and Governance (1)	JMG
Journal of Multinational Financial Management (1)	JMFM
Journal of Risk (1)	JoR
Journal of Theoretical and Applied Information Technology (1)	JTAIT

### **103 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review**

---

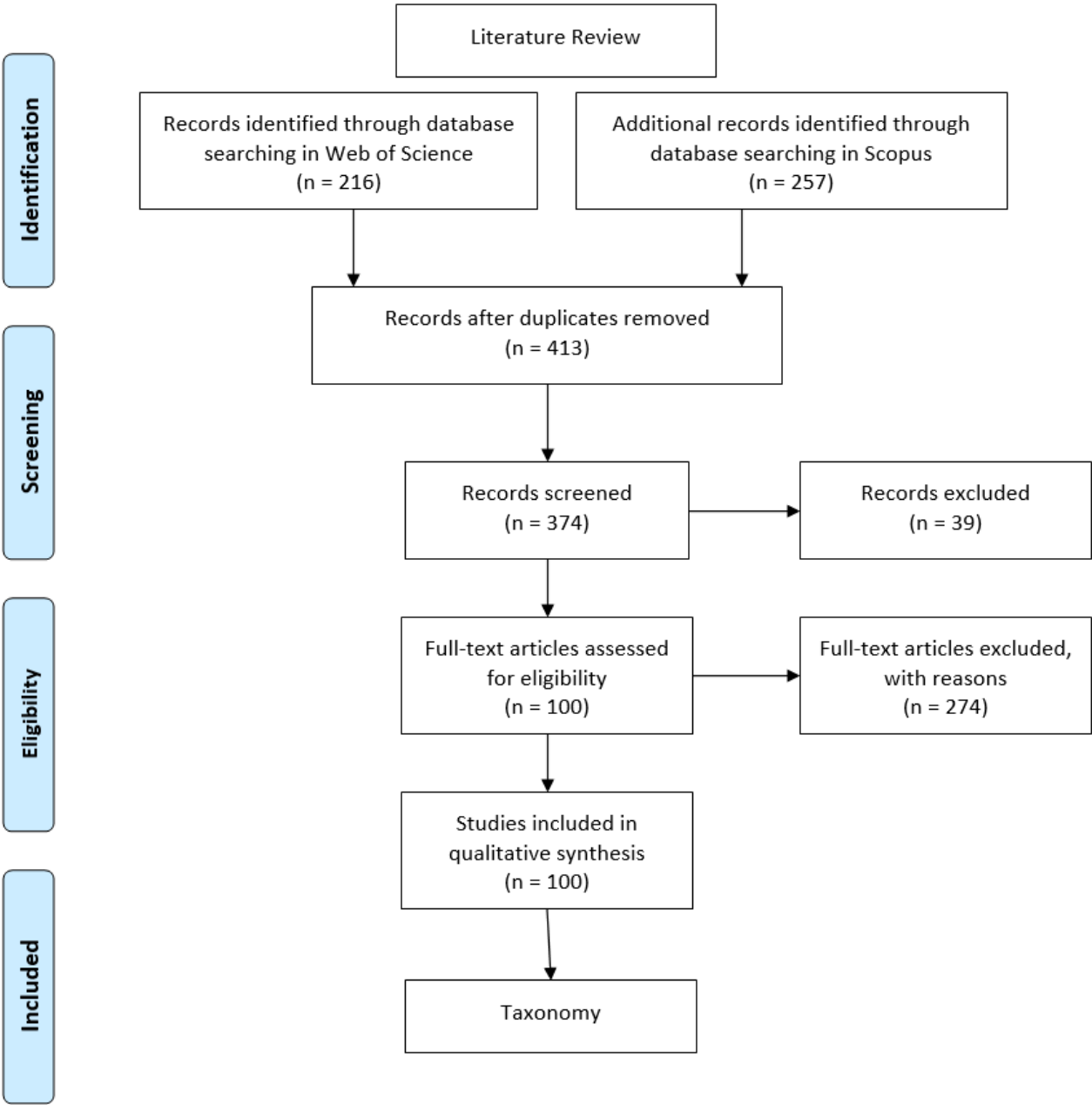
Jurnal Pengurusan (1)	JP
Managerial Finance (1)	MF
North American Journal of Economics and Finance (1)	NAJEF
Pacific-Basin Finance Journal (10)	PBFJ
Physical A-Statistical Mechanics and its applications (2)	PSM
Qualitative Research in Financial Markets (1)	QRFM
Quarterly Review of Economics and Finance (5)	QREF
Research in International Business and Finance (6)	RIBF
Review of Financial Economics (2)	RFE
Risk (1)	RISK
Sains Malaysiana (1)	SM
Studies in Business and Economics (1)	SBE
Sustainability (2)	SUST
Thunderbird International Business Review (1)	TIBR

---

Source: author’s own compilation.

Setting a ten years' timespan allow to consider into the analysis whole possible economics situations (before, during and post a financial downturn). Selected articles are grouped by classifying all essential elements of each paper: title of the journal (abbr.), author(s) and release date, data span, paper’s objective, methodology (including any variables) and main results. Appendix A summarizes the articles selected from Web of Science and Scopus Databases. They include all information detectable from the articles and sometimes by reading the abstract.

Figure 3.2 PRISMA 2009 Flow Diagram for the included studies





### 3.4.1 Grouping publications and taxonomy

Following the strict sample selection, we analyse the 100 contributions providing a tidy and detailed taxonomy of various methodologies implied to compare ISM and the Conventional counterparts and the main findings observed. The sample table (Appendix A) highlights the objectives, mains finding results and conclusions identified after reading the text and/or the abstract of the articles. In order to ensure the systematic of the methodology during the taxonomy design, we identify some keywords which allow grouping the publications in 4 macro areas, depending on the typology of the articles' objective: *Performance, Contagion or Decoupling Hypothesis, Relationship and Others*. The data analysis showed in Table 3.5 demonstrates a growing number of research works compare ISM (indices, funds, and portfolio) with their Conventional counterparts.

**Table 3.5 A taxonomy of Islamic Stock Market versus Conventional Stock Market Analysis**

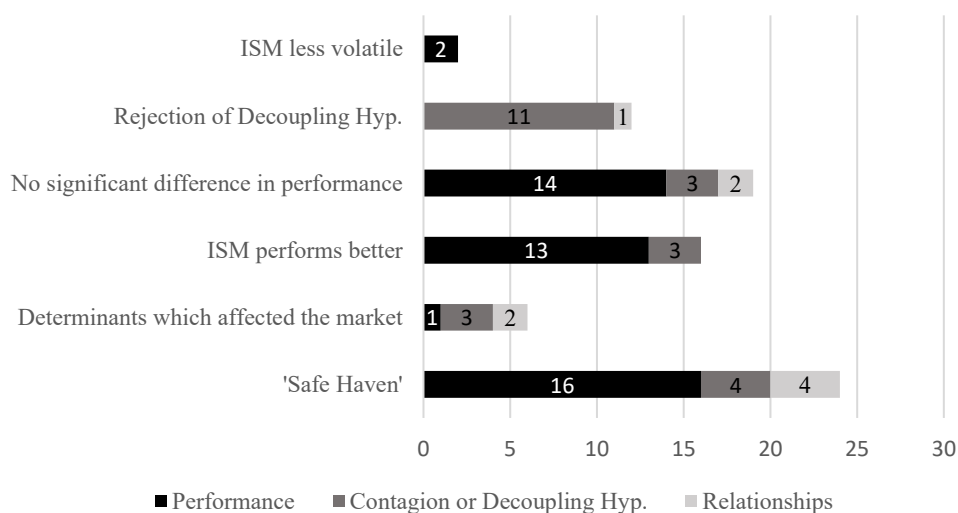
		<b>Number of Articles</b>
<b>Main Objective</b>	Performance	51
	Contagion or Decoupling Hypothesis	25
	Relationship	9
	Others	15
<b>Category</b>	‘Safe Haven’	23
	No significant difference in performance	19
	Rejection of Decoupling Hypothesis	13
	ISM performs better	16
	Determinants which affected the market	8
	ISM less volatile	2

Source: author’s own compilation

---

Most of them, compare in general, the performance of Islamic investing compares to the Conventional using risk-adjusted performance or mean-variance criteria analysis or in terms of volatility (Value at Risk, VAR). Other methodologies are more statistic specifically such as GARCH or Vector Autoregressive (VAR) models, or Stochastic Dominance (SD) approach, and so on. It is relevant that sometimes using a different approach for the same timespan they have arises different findings. In this regard, these aggregate criteria are intended to highlight in general, which are the main findings, considered that performance and diversification benefits are a common thread. In the same way, other parts of these research works investigate the contagion or decoupling hypothesis in time series analysis. The same methodologies are used to demonstrate the statistic relationship between different variables which can affect the markets. Finally, the ‘*Others*’ category involves papers which are not available for download and not relevant for the systematic literature review process. In the end, the analysis allows understanding if, when and why the ISM performs better or not compared to their Conventional Counterpart, providing a specific claim in terms of diversification portfolio benefits and strategies. Reporting the main finding results, it is likewise possible to identify a significant interpretation of the literature conclusions about ISMs versus Conventional counterparts’ studies. Figure 3.3 presents the taxonomy associated with the general interpretations of the literature study’s conclusions. The following section gives a more detailed discussion of the findings pertaining to the different categories identified.

**Figure 3.3 Taxonomy grouping category in main objective area**



Source: author's own compilation

### 3.4.3 Taxonomy Discussion

Analysing the main contributions of academia on the topic during the last decades, emerges scholars have proven divergent results in comparing the ISM and the Conventional counterparts. This is even more evident, if we consider the classification of literature according the proposed taxonomy above. Table 3.5 pointed out that most of the articles focus the attention on four main objectives due to these questions: “*Are Islamic indexes a ‘Safe Haven’ for investors?*”, and “*Does Islamic equity investment provide diversification benefits to Conventional investors?*”. Clearly, all these questions have a single main issue in common, related to existing linkage between diversification benefits and performance of ISM in general. Accordingly, it is possible to aggregate ‘*Safe Haven*’ and ‘*ISM performs better (than Conventional counterparts)*’ in terms of risk-adjusted performance, selecting a population of 40 articles which can provide the same conclusions. Particularly, these studies prove that the ISM performs better than the Conventional counterpart before, during and/or after financial downturns or provide evidence for the rejection of the

---

decoupling hypothesis between Islamic and Conventional stock markets. An evaluation of the contagion or the decoupling effect is important since financial systems globally have experienced periodic occurrences of crises, resulting in a rapid spread of financial shocks (Dewandaru et al. 2014). Arouri et al. (2012) attempt if Islamic finance represents a good option to tackle against the global financial crisis, generally assuring investors during financial downturns. They apply Multivariate Vector Autoregressive (VAR) and Granger causality test to test the interaction and the dependence orientation between Islamic and Conventional instruments. Then, they find that empirical portfolio simulations before and after the period of crisis provide strong evidence in favour of Islamic funds as they allow investors to expect higher returns and lower risk. As a matter of fact, the impact of GFC on the Islamic finance industry is less marked than conventional finance, with higher returns in Islamic portfolio. The well diversification generated by Islamic products reduce the systematic risk provide a significant alternative for investment choices. Similarly, Hengchao and Hamid (2015) reveals that, after the debut of the U.S. subprime crisis, Asia-Pacific Islamic stock markets increasingly integrated among themselves and with their conventional counterparts. Therefore, Hassan et al. (2017) analyse the performance of Islamic mutual funds and Socially Responsible Investing (SRI), particularly focus on US based mutual funds, since both SRI and Islamic mutual funds work similarly. On the one hand, they clean and select the portfolio excluding non-accepted stocks following environmental, social and governance issues and on the other side they exclude non-Shariah compliant stocks (for instance related to pork, alcohol or tobacco consumption or gambling). They show that mutual funds are highly skewed and all markets, except Turkey, have non-normally distributed returns, probably because many mutual funds, especially small Islamic ones, are non-actively traded. Then, they fund supporting evidence suggesting that 11 mutual funds from Islamic markets and US Islamic mutual funds perform better than Socially Responsible Investing, which in turn outperform conventional mutual funds. For these reasons, during turbulent times, Socially Responsible investment, and Ethical

finance instruments, as well as Islamic finance, are required to reassure investors and stabilize financial markets. According to Paltrinieri et al. (2019), investors can obtain portfolio diversification benefits, including Islamic instruments in their asset allocation strategies, such as Socially Responsible instruments. Particularly, they investigate cointegration and dynamic correlations analysing a sample of 17 Islamic, SRI and conventional stock indices, which reveals co-movements among Islamic, SRI, and conventional indices with mutual causalities when looking at the world indices. They also compare the results with some macroeconomics variables as oil price and VIX index. A shock in global market volatility show a negative reaction of all indices across regions. That is why there are portfolio diversification benefits by adding Islamic and SRI indices to a diversified portfolio. During financial downturns, *diversification benefits tend to decrease given that all stock indices react to volatility surges and to selling by institutional investors, but over the long term, dynamic correlations tend to decrease*. Alexakis et al. (2017) also explore long run relationship between Islamic and Conventional equity indices adopting co-integration technique and finding that the Islamic index is the least responsive during bad times and showing the robust nature of Islamic portfolio with a diversification benefit possibility. Nevertheless, Al-Khazali et al. (2014), demonstrate that, in general, Conventional indexes stochastically dominates Islamic ones and finally conclude that they outperform their conventional peers, especially during the recent global financial crisis. They compare nine Dow Jones Islamic indexes to their Conventional counterparts. However, all Conventional indexes stochastically dominate Islamic indexes at second and third orders in almost all the timespan as only exception for the European market. Vice versa the European and US global Islamic indexes dominate conventional during and after crisis period, concluding that *Islamic investing performs better than conventional investing during meltdown economy*. Similar results are achieved by Jawadi and Louhichi (2014), Charles and Darné (2015), Trabelsi and Naifar (2017), Ahmed and Farooq (2018), Azad et al. (2018), and de la O. González et al. (2019), Safiullah and Shamsuddin (2019)).

---

Majid (2018) also study the impact of the 2008 global financial crisis on both Islamic and conventional equity markets of Malaysia, Indonesia, Japan, the UK, and the US with cointegration technique and impulse response functions. Findings conclude that the Islamic equity markets is more stable and resilient during the crisis period since Conventional equity market perform marginally poorer than Islamic counterparts. Therefore, Ramasamy et al. (2015) also demonstrate that Islamic and Conventional Dow Jones and S&P indices have no cointegration relations, with a long-run diversification opportunity. These findings support the decoupling hypothesis of the ISMs, above all during financial downturns. Thus, since Islamic investing performs better than the Conventional investing in general, Shariah restrictions seems to make soft positive effects in portfolio diversification, also during major crises like the 2008 GFC (Balcilar et al., 2015; Bahloul et al., 2017; Hkiri et al., 2017; Umar and Suleman, 2017; Ahmad et al., 2018; Uddin et al., 2018; Cevik and Bugan, 2018; Jawadi and Idi Cheffou, 2019; Fatima et al., 2019; Usman et al., 2019; Saiti et al., 2016; Umar 2017). Saiti et al. (2014), comparing MSCI indices of Japan, GCC ex-Saudi, Indonesia, Malaysia and Taiwan to Korea, Hong Kong, China and Turkey, also find that the Islamic countries provide better diversification benefits compared to the Far East countries *with strong policy implications for the domestic and international investors in their portfolio diversification for hedging against unforeseen risks*. These conclusions suggest that Islamic Stock instruments could be a *safe-haven* for investors. Similarly, Antar and Alahouel (2019) apply MGARCH and wavelet decomposition, showing results which recommend including the USA, Canada, and Emerging Markets indexes with the Mena index to get diversification benefit. The portfolios supplemented with positions in ISMs contribute to much improve risk-adjusted returns, providing a cushion against risk and instability (Balcilar et al., 2015; Mensi et al., 2017; El Mehdi 2017; Muteba Mwamba 2017; Abu-Alkheil 2017; Gad and Andrikopoulos, 2018; Raza and Ashraf 2019; Jawadi and Idi Cheffou, 2019) with particular attention to Islamic emerging stock markets (Kenourgios et al., 2016). Therefore, Alam (2013) apply CAPM variables, Sharpe, Sortino and Treynor

ratios, comparing the performance of Conventional and Islamic ETF. Finding results confirm that *Islamic ETFs can beat both conventional ETFs and the market benchmark index based on risk-adjusted performance measures. Overall, both ETFs were able to outperform the market benchmark index. It is also evident that a portfolio of Islamic ETFs shows less variability and hence is less risky compared with their conventional counterpart.*

Following the taxonomy resumed in Table 3.5, it is possible also to aggregate to the ‘Performance’, the following category: ‘*ISM less volatile (than Conventional counterpart)*’. Chadmi and Ghaiti (2012, 2014) show that the financial crisis affected Islamic Stock indexes as well as the Conventional counterparts, with a very significant volatility persistence. However, Islamic indexes were less volatile than the Conventional, confirming the relative resilience of ‘*Shariah compliant*’ instruments to the global financial crisis. Therefore, Ashraf and Mohammad (2014) use LSTAR model to analyse the performance of global and regional Islamic equity indices and the Conventional counterparts. The results indicate that in general Islamic indices perform better but not find abnormal returns on a global basis. They also exhibit lower systematic risk compared with Conventional benchmarks, with portfolio diversification benefits, according to Rizvi and Arshad (2018). In contrast, Miniaoui et al. (2015) show that financial crisis did not affect GCC market (except for Bahrein), with a low impact in other countries as Saudi Arabia, Oman and Qatar. Particularly, they show that the Islamic index did not exhibit lower volatility than its conventional counterparts. El-Masri et al. (2016), using Fama and French (1993) and Carhart (1997) models, also show that the relative performance of Islamic and Conventional funds are conditioned by several factors with no difference in performance. However, they provide evidence that Islamic funds are more stable in times of distress. On the other side, the literature review process highlights different conclusions.

---

Following the proposed taxonomy, represented in Table 3.5, it is possible to aggregate 31 papers which explain ‘*No significant difference in performance*’ and ‘*Rejection of Decoupling Hypothesis*’. In this way, different research works demonstrate that it is not possible to conclude that the Islamic mutual funds’ under- or outperform Conventional equity markets since national characteristics also explain the heterogeneity in Islamic fund performance (Hoepner et al., 2011). Therefore, this part of the literature suggests the rejection of the decoupling hypothesis of the ISM from the Conventional, evidencing no significant differences in terms of performance, since the Islamic equities may outperform the Conventional counterparts during bull markets but underperform in bear markets or perform in the same way (Abbes 2012; Walkshausl and Lobe, 2012; Ajmi et al., 2014; Dewandaru et al., 2015; Charles et al., 2015; Al-Khazali et al., 2016; Ashraf 2016; Alam et al., 2016; Sherif 2016; el Alaoui et al., 2016; Ali et al., 2018; Camgoz et al., 2018). According to Carfeddine et al. (2016), sometimes ethical investments as well as Islamic investing, have lower performance compared with Conventional counterparts. Mansor et al. (2015) studying the financial performance of fund managers applying the OLS regression and the CAPM, and find no difference between the performance of Islamic and Conventional mutual funds before fees, supporting the hypothesis of no significant difference in performance and the rejection of decoupling hypothesis. Similarly, Ben Rejeb et al. (2019) perform a GARCH-EGARCH analysis showing that Islamic stock indexes are more volatile than their conventional counterparts and are not totally immune to the global financial crisis, also finding more efficiency.

Jawadi and Cheffou (2015) demonstrate efficiency in the long term for the emerging Islamic stocks, conversely in the short term, since they test a non-rejection of cointegration hypothesis. These findings imply that the Islamic finance system may not provide either a good cushion against financial shocks affecting the Conventional markets or large diversification benefits for portfolio managers. Aloui et al. (2016) also confirming that the co-movement between Islamic and Conventional is shifting over time and



frequencies, and the Islamic equity returns *do not behave differently from their conventional counterparts*. Following this strand of literature, Shariah-based principles seem not to make positive effects to the Islamic financial market, opposite to those who have found a ‘*Safe Haven*’ (Mohammad and Ashraf, 2015; Sensoy 2016; Shahzad et al., 2017). Confirming the contagion hypothesis, the ISM is also exposed to global shocks common to the Conventional financial system as well as to contagion risks in the case of economic and financial downturns (Hammoudeh et al., 2014; Nazioglu et al., 2015; Yilmaz et al., 2015; Majdoub et al., 2016; Saadaoui et al., 2017; Ben Rejeb, 2017; Hoque et al., 2016; Ahmed 2018; Ahmed 2019). El Amri and Hamza (2017) performing cointegration and causality test, support the hypothesis that the impact of faith-based screens on investment performance is insignificant, showing no long run relationship between the Islamic indices and their conventional counterparts, except for emerging markets.

Afterwards, Table 3.5 displays the last four papers included in the sample which discuss ‘*Determinants which affected the markets*’. Respectively, Chau et al. (2014) examine exogenous variables which affected the Islamic and the Conventional Stock Market. Particularly, they find that in MENA region both markets react heterogeneously to the political turbulence, showing a correlation in change on volatility and stability. Dewandaru et al. (2014) comparing these markets to identify whether Islamic are less integrated among themselves, reveal that they are significantly affected by economic and financial turns of both regional as well as global shocks. They also confirm co-movements and contagion effects (interdependence) for the stock market pairs during the GFC. Similarly, Bahloul et al. (2017) evidence that the co-movement between ISM return and macroeconomic variables (inflation rate, short-term interest rate, the slope of the yield curve and money supply), including Conventional markets returns, vary across regimes. Muharam et al. (2018) with ADCC model and GARCH regressions find a stronger (weaker) relationship between both Islamic and Conventional indices and smaller (greater) inflation

rate differential, industrial production growth rate differential, interest rate differential, and exchange rate volatility. Thus, the widespread market crisis affects on interaction level of all stock market pairs. Ultimately, Naifar (2016) explores the co-movement and the dependence structure between the ISMs and influential global financial market conditions, macroeconomic indicators and risk factors<sup>17</sup>. Finally, he concludes that the extreme co-movement explains that ISMs' return and financial losses and diversification benefits can be limited.

---

<sup>17</sup> The variables include Conventional Stock Market returns, global stock market uncertainty (VIX), crude oil prices, inflation rates, slope of the yield curves, investor sentiment indicator, and global sovereign credit risk represented by sovereign credit default swap (CDS) premiums.

### 3.5 Conclusions and further remarks

The recent explosion of the Islamic Finance phenomena is confirmed both by a significant growth and a remarkable increase of academics' and operators' interest in IFSs, also demonstrated with a blast in the number of publications and citations in the last few years. In the light of above, this paper performs a systematic literature review on ISM compared with Conventional, bearing in mind different economic situations (before, during and after the GFC), to support investors in the portfolio management dilemma about the optimal diversification.

The performed analysis highlights that almost all the existing studies are mere comparative and did not verify the viability of Shariah-Compliant instruments and assets on a portfolio optimization logic. Until the present day, they only focus on showing decoupling, contagion, interdependence or relationship between these two opposite realities, without carefully answering to the following questions: "*Are Islamic indexes a 'Safe Haven' for investors?*", and "*Does Islamic equity investment provide diversification benefits to Conventional investors?*". Despite there are many studies regarding these topics, the proposed taxonomy reveals the presence of divergent results giving no conclusive answer to these questions: while 42 papers side in favour of ISM, there are 27 articles in which authors seem more sceptic and propose different arguments. In view of the above, they do not reach definite, unanimous conclusions. It is possible to assert positive benefits in Shariah-Compliant products and Islamic investing in general, but not with scientific, absolute, and complete certainty.

Literature has not yet actually proven differences in performance and diversification benefits of Islamic Finance instruments. Some studies advocate the advantage of considering Islamic assets in portfolio allocation. On the contrary, others suggest that Islamic assets are not different from Conventional assets and in sometimes they

---

underperform their benchmark, confirming the absence of a correlation effect. Since current literature about Islamic, Sustainable and Conventional investment fails to provide a comprehensive overview, the answer to previous questions could also provide an important signal to alternative investors. Consequently, the analysis performed leaves open the possibility for further investigations looking for definitive answers to the previous question. In this regard, we propose a change in the investigation approach of the phenomenon, looking at the two capital markets through the lens of integration. In our opinion, it could be possible to evaluate how to take advantage of Shariah-Compliant instruments benefit combining them with Conventional instruments, considering the main results of past studies, instead of “simply” compare them. Therefore, considering the sustainability of Islamic Finance model, these instruments can contribute to help policy makers and regulators to provide robust guidelines in order to align all the world financial system to the mean of sustainable development. The new integrated approach we propose, between the Islamic Stock Market and Conventional, could be supported of ethicality and sustainability. Firstly, the Islamic Finance and principles contribute to increase the financial inclusion and break down the borders and the sociocultural and religious bias. Secondly, assuming ethical investing continues to grow in the future, the framework and the main features of the Conventional Capital Markets are fundamental in order to develop a Sustainable Financial System. Islamic Finance principles and Sustainable Finance could be the pillars of a new combined approach to future megatrends investments. This change of mindset would also provide several implications in financial decisions making process, including asset allocation strategies of individual and institutional investors (financial analysts, portfolio managers and fund managers) as well as policymakers decisions. In Table 3.6 we propose future research on Islamic Finance, particularly in Islamic Capital Market and ISM following the conclusions previously showed.

Table 3.6 Identification of further research

	Main Findings	Further research
<b>Previous Literature Review</b>	<ul style="list-style-type: none"> <li>• A vast number of contributions in Islamic Finance (ISM, Islamic indices, equities, mutual funds) confirm the interest in this research field. Literature reviews in Islamic Finance are mere narrative (ref. Table1).</li> </ul>	<ul style="list-style-type: none"> <li>• Future works in Islamic Finance, in general, could potentially focus on <i>method-based</i> or <i>meta-analytical</i> reviews like bibliometric, systematic, and meta-analytical. They provide more quantitative results and contributions to the field.</li> </ul>
<b>Data, Methodology and Approach</b>	<ul style="list-style-type: none"> <li>• Reviewed studies mainly focus on the performance, volatility, relationship, cointegration, correlation and contagion of global ISMs</li> <li>• Numerous studies are mere comparative and not verify the viability of Shariah-Compliant instruments and assets on a portfolio optimisation logic.</li> <li>• The papers under review conduct the analyses over a time span of 3-5 years, focusing mainly on the period before, during or after the financial crisis. It sometimes takes away the information power of the econometric analyses carried out, and sometimes makes it difficult to compare the studies.</li> </ul>	<ul style="list-style-type: none"> <li>• Future researches should continue to investigate about the market/investors herding behaviour and portfolio choice. It is also significant to verify if during financial distress, the stock market contagion is due to herding behaviour.</li> <li>• Future studies could also focus on quantitative methodologies related to study the portfolio asset allocation and the mutual funds’ performance globally</li> <li>• Future works should evaluate how to take advantage of Shariah-Compliant instruments benefit combining them with Conventional instruments, considering the main results of past studies, and not “simply” compare them.</li> </ul>

	<ul style="list-style-type: none"> <li>Methodologies used to analyse data focusing on RAP analysis or statistical process (GARCH, VAR, SD).</li> </ul>	<ul style="list-style-type: none"> <li>Next works should be now extended the analysis considering a longer time span. It is now possible to test the long-run portfolio strategies (about 20 years of time-series) considering all macroeconomic conditions and contributing to facilitate better comparison between different methodologies.</li> </ul>
<p><b>Results and Implications</b></p>	<ul style="list-style-type: none"> <li>Most of the studies register a positive benefit in Shariah-Compliant products and Islamic investing in general, but not with scientific, absolute, and complete certainty</li> <li>Divergent results give no conclusive answer about better risk-adjusted performance, and diversification benefit of Islamic finance instruments compare to the Conventional.</li> <li>Scholars are still sceptic about the decoupling hypothesis of ISM compare the Conventional counterparts.</li> </ul>	<ul style="list-style-type: none"> <li>Further research could look for previous questions proposing a change in the investigation approach of the phenomenon, looking at the two capital markets through the lens of integration.</li> <li>Next quantitative research articles could mix both instruments in portfolio asset allocation. Previously results could help to build an efficient and effective investment strategy</li> </ul>

## Appendix A. Sample Composition

Journal	Authors (Year)	Timespan	Objective	Methodology	Finding Results
QREF	Abu-Alkheil A., Khan W.A., Parikh B., Mohanty S.K. (2017)	2003-2011	Dynamical relationship between conventional and ISMs	SD (stochastic dominance) analysis, Johansen’s co-integration	Risk-averse investors would largely prefer to invest more in Islamic indices rather than conventional indices. They can, however, increase their utility by switching from the less risky Islamic indices to the risky conventional indices. On the other hand, conventional indices with high volatility will attract risk seeker investors and thus they will keep larger portions of their portfolio in conventional indices. Islamic indices can most likely offer good diversification potential for attracting international portfolios. The dominance of conventional indices over Islamic indices for both risk averse and risk seeker investors offer diversification opportunities for global investors who will hold both conventional and Islamic indices
QREF	Ahmad W., Rais S., Shaik A.R. (2018)	2006-2015	Interdependence and financial performance of Sharia-screened Islamic equity finance with conventional benchmarks	DCC	There is a visible level of directional interdependence between DJIMI and conventional indices, though the magnitude is not as high as we find among conventional indices. The findings thus suggest that the Sharia-screening does play a constructive role in the financial performance of DJIMI. It concludes that the Sharia-screened Islamic equity index may act as an effective hedging instrument during the crisis period.
RIBF	Ahmed N., Farooq O. (2018)	2003-2013	Difference in returns and volatility behaviour of sharia versus conventional portfolios	GARCH	The Shariah-compliant portfolio outperforms the conventional one. However, both Sharia and conventional indices show increasing vulnerability to the market after the financial crisis.
JFMIM	Ajmi A.N., Hammoudeh S., Nguyenc D.K., Sarafrazi S. (2014)	1999-2010	Links between the Islamic and global conventional stock markets, and between the	GARCH; Granger Causality Test;	The Islamic equity market is not isolated from external shocks of different types, regions, and sources. Islamic market may outperform the conventional counterparts during bull markets but underperform in bear markets

			ISM and several global economic and financial shocks.		because of lack of hedging. Findings thus suggest the rejection of the decoupling hypothesis of Islamic equity finance from conventional equity finance, still implying that the Islamic finance system may not provide either a good cushion against financial shocks affecting the conventional markets or large diversification benefits for portfolio managers.
RFE	Alam N., Arshad S., Rizvi S.A.R. (2016)	1996-2014	Efficiency of stock markets and financial performance aspects	multifractal de-trended fluctuation analysis (MFDA)	Islamic sectoral indices generally tend to exhibit a higher efficiency regime across the last decade. Although the sectoral universe is the same, lower leverage of the stocks in the Islamic index seems to have stayed attractive and resilient, allowing conformity with the weak form efficient market hypothesis. But on a holistic perspective, the authors conclude that efficiency at the sectoral level tends to follow similar trends within Islamic and conventional counterparts.
JFMIM	Alexakis C., Pappas V., Tsikouras A. (2017)	2000-2014	Long-run relationship between Islamic and Conventional equity indices	Co-integration test	Islamic index is the least responsive during bad times. This highlights the robust nature of Islamic investments and a possible differentiated investor reaction to financial information during market downtrends
PSM	Ali S., Shahzad S.J.H., Raza N., Al-Yahyaee K.H. (2018)	2003-2016	Comparative efficiency of 12 Islamic and conventional stock markets counterparts	Multifractal de-trended fluctuation analysis (MF-DFA)	The results for the ISMs are quite similar to the conventional ones as the developed ISMs are found to be relatively more efficient. ISMs' adjustment to speculative activity is, in fact, higher than their conventional counterparts
PBFJ	Al-Khazali O., Lean H.H., Samet A. (2014)	1996-2012	Islamic and conventional indexes performance	Stochastic Dominance (SD), CAPM and Mean-Variance	Conventional indexes stochastically dominate Islamic index in all markets except in the European market. However, the European, US, and global Islamic stock indexes dominate conventional ones during the 2007–2012 period. Islamic indexes outperform their conventional peers during the recent global financial crisis. Thus, Islamic investing performs better than conventional investing during meltdown economy.



## 121 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

EMFT	Al-Khazali O.M., Leduc G., Alsayed M.S. (2016)	1997- 2012	Investigates whether Islamic stock indices are more, less, or as efficient as their conventional counterparts	Martingale Difference Hypothesis (MDH) and the Random Walk Hypothesis (RWH)	Three conventional indices (Europe, Japan, and UK) are efficient, but that none of the Islamic indices is efficient in these markets. During the recent financial crisis, results indicate slightly more efficiency for the Islamic indices than their conventional counterparts. The conventional indices are more efficient than their Islamic counterparts. During periods of general downturns, the Islamic indices have shown the same level of efficiency as their counterparts. It appears that during the last two sub-periods under study, the Islamic indices have moved toward efficiency, displaying the same level of efficiency as their counterparts.
AE	Arouri M.E., Ben Ameer H., Jawadi N., Jawadi F., Louhichi W. (2012)	2006- 2008	Interaction between Conventional and Islamic financial products	Vector Autoregressive (VAR); Granger Causality Test; Mean-Variance approach	Empirical portfolio simulations before and after the crisis provide strong evidence in favour of Islamic funds as they allow investors to expect higher returns and lower risk. This implies that during turbulent times, socially responsible investment and ethical finance are required to reassure investors and stabilize financial markets.
JBE	Ashraf D. (2016)	2000- 2012	Relationship between the screening criteria and the performance of IEFs versus conventional indices	Multi-equation framework; CAPM; JENSEN; Sharpe;	The empirical findings suggest that the difference in screening criteria does not significantly affect the performance of IEFs. Use of appropriate Islamic equity benchmarks for the performance measurement of IEFs based on screening criteria adopted by IEFs provides more relevant information about the management skills of fund managers. Return for a passive portfolio that often requires rebalancing can diverge considerably from that of a more passive portfolio due to transaction costs and liquidity risk.
JFMIM	Azad A.S.M.S., Azmat S., Chazi A., Ahsan A. (2018)	2000- 2015	Non-conventional (i.e., Islamic) stocks could act as a hedge during a tranquil environment	Quantile regression	Islamic stocks as a hedge for the majority of the markets under study suggesting that they offer a ‘safe haven’ against most international markets. We suggest that during the major economic and financial crises, investors could use Islamic stocks to diversify their risks. Conventional stocks perform better in tranquil and bearish markets and, Islamic stocks perform better in crisis and turbulent times, we find that Islamic stocks perform better in both tranquil and turmoil period.

PBFJ	Bacilar M., Demirer R., Hammoudeh S. (2015)	1996-2014	Risk exposures Islamic sector indexes respect to shocks in global conventional markets and diversification benefits	Dynamic three regime, three factor model	Islamic sectors generally exhibit positive risk exposures concerning developed market shocks, implying that the Islamic sectors, in general, are not isolated from developed equity markets. The portfolios supplemented with positions in Islamic equity sectors yield much improved risk adjusted returns, implying significant international diversification benefits.
QRFM	Bahloul S., Mroua M., Naifar N. (2017)	2002-2014	Relationship between Islamic and Conventional	Stochastic dominance SD - bootstrap based	Results reveal that SD relationships between Islamic and conventional-diversified portfolios change systematically according to investment region and market regime. US investors are indifferent between Islamic diversification and its conventional counterpart, which implies that arbitrage diversification opportunities are rare and short lived in all regions. Islamic portfolio diversification can be a good substitute for conventional diversification. Islamic portfolio diversification in North and Latin America, Europe and Global regions is an optimal choice. Portfolio diversification among Islamic market indices can be a good hedge, offering investors superior investment alternatives during any financial meltdown or economic slowdown due to the conservative nature of Sharia-compliant investments.
BIR	Bahloul S., Mroua M., Naifar N. (2017)	2002-2014	Impact of conventional stock market return and volatility and various macroeconomic variables on ISMs returns	Regression models	Results show that conventional index return and the changes in money supply have a significant impact on Islamic index return in low and high volatility regimes for developed and emerging markets. For other economic variables, estimated coefficients are significant, especially, in the low volatility regime.
AEL	Balcilar M., Jooste C., Hammoudeh S., Gupta R., Babalos V. (2015)	1999-2013	Cointegrating relationship between the Dow Jones ISM index and other conventional stock market indices	Linear and nonlinear test	There is little benefit in using the DJIM to diversify and hedge against movements in conventional stock market indices. There is a strong and positive cointegrating relationship between SP500 and DJIM, which share many same stocks accessed from the global Dow Jones stock universe that meet the Sharia-compliance qualifications, whereas the remaining unshared stocks are disposed to the same fluctuating global common forces. Also, the Sharia principles' restrictions seem to make a slight difference during major crises like the 2008 global financial crisis, which is probably why we see the time-varying

## 123 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

					cointegrating parameters of the three conventional stock markets concerning the DJIM tends to converge post the financial crisis.
JoR	Bellalah M., Chayeh Z. (2015)	n.a.	Risk profile analysis between Islamic and Conventional markets	n.a.	n.a.
AOR	Ben Ameer H., Jawadi F., Cheffou AI., Louhichi W. (2018)	n.a.	Measurement errors in stock market		Not relevant
RIBF	Ben Rejeb A. (2017)	2001-2016	Existence of the transmission and contagion phenomena from conventional markets	Quantile regression GARCH	Conventional stock markets are more volatile than their Islamic counterparts. ISMs are not immune to the global financial crisis since the breakpoint dates coincide with the last subprime crisis period. Results show very strong interdependencies from the conventional stock markets to the Islamic ones. Results of the interdependencies analysis among Islamic markets show strong transmission and contagion effects, which justifies that the interdependencies initially found among conventional and Islamic markets are propagated to Islamic markets.
EJMBE	Ben Rejeb A., Arfaoui M. (2019)	1996-2016	Islamic and Conventional indexes performance	GARCH - EGARCH	Empirical results show that Islamic stock indexes are more volatile than their conventional counterparts and are not totally immune to the global financial crisis. As regards of the informational efficiency, the results show that the Islamic stock indexes are more efficient than the conventional stock indexes.
IBR	Camgoz M., Kose K.A., Seval B. (2018)		Risk and return characteristics comparison	Full paper not available	No significant difference between the risk and return characteristics of Islamic Index and conventional counterparts

RIBF	Carfeddine L., Najah A., Teulon F. (2016)	2004-2011	Performance of ethical and conventional investments	RAP	Empirical results show that ethical investment has inferior performance compared with their unscreened benchmarks. There is an absence of a long-run relationship between Islamic and conventional indices which offer new potential for portfolio diversification in local markets. However, there exists a long-run relationship between SR indices and their conventional counterparts. In the other hand, cointegration tests show that Islamic and socially responsible indices have a long-run relationship only for FTSE indices.
BIR	Cevik E.I., Bagan M.F. (2018)	1999-2016	Regime-dependent relationship between Islamic and the conventional stock markets	MS-VAR	A strong nonlinear relation between the Islamic and conventional stock markets over the regimes. The idea that Islamic financial markets provide diversification benefits and they are safe havens during financially distressed periods cannot be supported empirically.
EB	Charles A., Darné O. (2015)	n.a.	Impact of Sharia filtering criteria on Islamic indexes vs conventional	n.a.	Islamic size sub-indexes exhibit higher risk-adjusted performance than their conventional counterpart, and the Islamic sector sub-indexes outperform their non-Islamic counterpart. These differences in performance at the sector level can explain the higher performance of the DJIM than the DJGM at the aggregate level.
RIBF	Charles A., Darné O., Pop A. (2015)	1996-2013	Impact of the Sharia filtering criteria on the risk of Dow Jones Islamic indexes relative to their conventional counterparts	RAP, with Sharpe, Treynor, Black-Treynor, Jensen, Sortino	Islamic indexes seem to be riskier than their conventional counterparts as well as exhibit a higher performance on the full period. They have a higher level of risk than the conventional indexes, whatever the sub-periods. Consequently, the Islamic indexes are riskier than the non-Islamic indexes. In most cases the Islamic indexes either outperform the non-Islamic indexes or there is no significant difference in performance between both indexes. These findings can be explained because of less diversification in Islamic indexes, leading to higher concentration risk in some sectors, such as basic material, industrial and technology firms
JFMIM	Chau F., Deesomsak R., Wang J. (2014)	2009-2012	Impact of political uncertainty on the volatility of major stock markets by distinguishing between	Multivariate GARCH model	The political turbulence has contributed to the volatility of MENA stock markets, especially for the Islamic indices; however, there is little or no significant impact on their interaction and integration with the World market.

## 125 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

			conventional and ISM indices		
MF	Dah M., Hoque M., Wang S. (2015)	n.a.	Impact of Shariah guidelines on the performance of the DJIMI	Risk-adjusted and co-integration analysis	Not relevant
JMFM	Dewandaru G., Bacha O.I., Masih A.M.M., Masih R. (2015)	2008-2012	Risk-return characteristics of Islamic indices at different timescales	Wavelet analysis	The differences in betas between Islamic and conventional indices at most of the timescales are not statistically significant. Both Islamic and conventional indices demonstrate a similar tendency in that the betas become generally stronger at higher scales.
ES	Dewandaru G., Rizvi S.A.R., Masih R., Masih M., Alhabshi S.O. (2014)	1996-2012	Integration between Islamic equity and Conventional counterparts	Wavelet decomposition; GARCH DCC	Before the recent subprime crisis, the shocks from major crises have been transmitted via excessive linkages, thereby representing evidence of pure contagion. This can be attributed to investors’ behaviour during the period of greater uncertainty, i.e. herding, financial panic, loss of confidence, and so on. The shift in investor sentiment will lead to a general reversal of funds and cause capital outflows, becoming a source of fragility.
SBE	El Amri H., Hamza T. (2017)	2003-2011	Islamic and Conventional indexes performance	Cointegration and causality test	Index performance are somewhat mixed over the different period and through the different indices under consideration and support the hypothesis that the impact of faith-based screens on investment performance is insignificant. Second, over the three sub-periods, there is no long run relationship between the Islamic indices and their conventional counterparts’ performance, except for the Islamic emerging markets indices. Third, in the short-run, we find different causal links between Islamic Versus non-Islamic indices over the three sub-periods.
RIBF	El Mehdi I.K., Mghaiteh A. (2017)	2000-2014	Dynamic relationship between Islamic and conventional	DCC Multivariate GARCH	This study provides important information about the dynamic correlation between Islamic and conventional indices, which represented a good guide for investors’ portfolio choices during the phases of the subprime crisis.

					To maximize risk-adjusted return of the portfolio, investors should hold more DJUSI and DJEMGI than conventional counterparts, but the opposite is true for the DJAPI, DJCAI, DJUKI and DJEUI indices.
JIM	Fatima A., Rashid A., Khan AUZ. (2019)	2009-2016	Asymmetric impact of shocks on Islamic stocks	Full paper not available	The results indicate that there is significant leverage effect in Islamic stocks traded in the sampled countries. That is, negative shocks or bad news have stronger effects on Islamic stock returns' volatility as compared to positive shocks or good news. This finding implies that increased Islamic stock returns in the country have significant and positive effects in Islamic stocks' returns in another other
JAF	Fikri SM., Yahya MH. (2019)	2008-2015	Fund characteristics, fee and expenses structure between conventional and Islamic mutual fund		Not relevant
PBFJ	Gad S., Andrikopoulos P. (2019)	2008-2017	Shari'ah compliant exchange-traded funds (ETFs) potential diversification benefits vs Conventional	DCC	Such assets not only improve the risk-adjusted returns of portfolios but also receive proportionally higher weight during crisis periods
EMFT	Guyot A. (2011)	n.a.	Market quality and price dynamics	n.a.	Efficient investment allocation is not compromised by the application of Shariah criteria. Ultimately, investors whose investment decisions are guided by religious principles do not bear significant additional costs of inefficiency but may have to accept that their portfolios are more sensitive to geopolitical events
JFMIM	Hammami Y., Oueslati A. (2017)	2002-2014	Performance of Islamic mutual funds in GCC with evidence on management skills		Not relevant
PBFJ	Hammoudeh S., Mensi W., Reboledo J.C., Due Khuong Nguyen (2014)	1999-2013	Dependence and extreme dependence between the ISMs and Conventional counterparts	Bivariate Copula Approach GARCH based	Significant potent linear and nonlinear causality between the ISM and the conventional stock markets and global financial risk factors (tail dependence). ISM cannot act to hedge against extreme movements in conventional stock markets during turbulent periods. ISM universe is also exposed to global shocks common to the world financial

## 127 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

					system as well as to contagion risks in the case of financial crises.
IJBS	Hassan A., Rubio JF., Hassan MK., Ozkan B., Merdad H. (2017)	2011-2016	Assessing and ranking the relative performance of Islamic, Socially Responsible, and conventional mutual funds from 11 Islamic markets and the United States	Mean Variance, Coskewness regression, CAPM	Controlling for skewness risk, by using an unconditional coskewness measure, has the power to improve asset pricing tests by expanding the mean-variance frontier specification. We find supporting evidence suggesting that Islamic mutual funds perform better than Socially Responsible Investing, which in turn outperform conventional mutual funds
BEER	Hassan MK., Miglietta F., Paltrinieri A., Floreani J. (2018)	2007-2014	Effect of Shariah board members' educational background on Islamic indices' risk and return characteristics		Not relevant
PBFJ	Hkiri B., Hammoudeh S., Aloui C., Yarovaya L. (2017)	1998-2014	Decoupling and contagion hypotheses by testing them on the safe haven status of Islamic indexes through Islamic stock indexes and their conventional counterparts	GARCH	The results show that global financial crises strongly affect cross-market volatility. Although the contagion hypothesis is evident for both Islamic and conventional indexes, the findings also suggest the presence of a decoupling of the Islamic indexes from their conventional counterparts during turbulent periods
EJF	Hoepner A.G.F., Rammal H.G., Rezac R&M. (2011)	1990-2009	Performance comparison between Islamic Funds and Conventional benchmarks	CAPM; Standard Carhart Model; Conditional three-level Carhart model	Findings do not allow us to conclude that Islamic funds in general under- or outperform equity markets. National characteristics explain the heterogeneity in Islamic fund performance.

AE	Jawadi F. & N., Cheffou I.C. (2015)	2002-2012	Tested the efficient hypothesis in short and long horizons	Time series analysis	Emerging ISMs seem to be less efficient than developed Islamic markets, suggesting interesting investment opportunities and diversification benefits from this region in both the short run and the long run. Nonrejection of the cointegration hypothesis for developed Islamic markets and the global conventional stock market point to efficiency for the former in the long term, even if it is inefficient in the short term.
EM	Kenourgios D., Naifar N., Dimitriou D. (2016)	2007-2015	Contagion effects of the global financial crisis (GFC) and Eurozone sovereign debt crisis (ESDC) on Islamic equity and bond markets	DCC GARCH, APARCH,	The results fail to provide strong contagion evidence between conventional and Islamic equity and bond indices, supporting the decoupling hypothesis of the Islamic securities. Findings imply that Islamic equities and bonds may provide a cushion against risk and instability, particularly in periods of turmoil. The findings also show that the Islamic emerging stock indices in the BRICS provide the most effective international portfolio diversification benefits compared to the Islamic developed indices.
NAJEF	Majdoub J., Mansour W., Jouini J. (2016)	2008-2013	Market integration between conventional and Islamic stock prices from the long- and short-run perspectives	Johansen, Gregory and Hansen, Asymmetric DCC GARCH	Results show long-run relationships for all countries, except for the UK where there is no cointegration between conventional and Islamic stock prices. Islamic financial markets are not decoupled from their conventional counterparts. For each economy, the Islamic index is found to be strongly linked with its conventional counterparts.
AE	Mensi W., Hammoudeh S., Sensoy A., Yoon S.M. (2017)	1998-2015	Correlation across Islamic and Conventional index	DCC GARCH	Results show evidence of evolving correlations among the considered markets, regardless of the model used. Moreover, these correlations differ for each of the Islamic-conventional sector index pairs. Adding a conventional stock sector index to a well-diversified portfolio improves its risk-adjusted performance and that the conventional risk exposure can be effectively hedged in portfolios of Islamic sector stocks over time.
PBFJ	Mohammad N., Ashraf D. (2015)	2002-2013	Determinants of return performance of Islamic equity indices	DCC-GARCH	The market timing results (from both parametric and non-parametric based tests) indicated that Islamic equity funds have a negative significant market timing ability. The results suggested that the Sharia screening standard does not screen out losing stocks before the downfall of capital



## 129 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

					markets and does not select winning stocks before the rise of capital markets.
PBFJ	Muteba Mwamba J.W., Hammoudeh S., Gupta R. (2017)	1998-2015	Financial risk Conventional and Islamic during crisis	Generalized (Block of Maxima Method); Peak Over Threshold Method; Maximum Likelihood	The results of this current study are significantly important since they show clearly that during major crises the Islamic stock index is not only less risky but also significantly different from the conventional stock markets. Thus, the results come differently to those of the recent studies which show that the ISM is no different from its conventional counterparts domiciled in different regions.
QREF	Naifar N. (2016)	2003-2014	Co-movement and the dependence structure between DJIMI return and influential global financial market conditions, macroeconomic indicators and risk factors	Quantile regression approach	Results show that the conventional stock market returns and stock market implied volatility (as a proxy for global financial indicators) and the slope of the yield curve (as a proxy for future economic conditions) are significant for all the quantiles and display asymmetric tail dependence. However, the impact of oil prices and investor sentiment indicator is positive and significant only for the lower quantiles.
AE	Nazioglu S., Hammoudeh S., Gupta R. (2015)	1999-2013	Volatility/risk transmission between the Dow Jones Islamic stock and three conventional stock markets	GARCH, Causality-invariance test	Mutual risk transmission between the Islamic and conventional stock markets, signifying the presence of contagion which has continued unaffected by the global financial crisis. This finding flies in the face of the literature that looks at the Islamic equity market as a ‘safe haven’ during crises. It also implies that the Sharia-based principles do not make the Islamic financial market much different from their conventional counterparts
TIBR	Paltrinieri A., Floreani J., Kappen JA., Mitchel MC., Chawla K. (2019)	2005-2015	Cointegration and dynamic correlations of Islamic and Conventional index	DCC GARCH	Our results show cointegration between Islamic, SRI and conventional stock indices, and co-movements with mutual causalities. Investors can obtain portfolio diversification benefits by adding Islamic and SRI indices to a diversified portfolio

JMG	Polato M., Floreani J., Paltrinieri A., Pichler F. (2016)	2007-2011	Compare financial performance across conventional and Islamic stock exchange		Not relevant
IREF	Raza M.W., Ashraf D. (2019)	2003-2016	Diversification benefits of Islamic investment with Smart Beta strategies	RAP	Smart-beta SCEPs outperform not only conventional market capitalization weighted portfolios but also SCEPs following a market capitalization weighted strategy. Higher risk-adjusted returns and lower drawdown as a result of following smart beta strategies highlight the importance of considering smart beta portfolio weighting strategies for passive investors. The main message is to inform those investing in SCEPs that by adopting SBs for the construction of their investment portfolios there is the possibility to improve their returns while simultaneously reducing their risk in terms of maximum drawdowns and value-at-risk.
EM	Rizvi SAR., Arshad S. (2018)	1996-2015	Time-varying systematic risk for both Islamic and non-Islamic sectoral indices	Wavelet decomposition, GARCH	Islamic and conventional indices follow a similar cyclical pattern over time. The sectoral beta turns out to be smaller for the Islamic market compared to the conventional market. A lower systematic risk of Islamic equities can offer portfolio diversification opportunities.
PSM	Saadaoui F., Naifar N., Aldohaiman M.S. (2017)	2003-2011	Dynamical relationship between conventional and ISMs	Wavelet, Cross correlation and causality analyses	Empirical results demonstrate an obvious strong dependence between conventional and Islamic indexes at low frequency, while the dependence becomes rather unstable in the finest frequencies across different investment time horizons.
IRF	Safiullah M., Shamsuddin A. (2019)	n.a.	Islamic equity portfolio and non-islamic counterpart's comparison	Five factor model (Fama and French, 2015)	Aggregate Islamic equity portfolios generally outperform non-Islamic equity portfolios. The average cost of equity is lower for Islamic firms than non-Islamic
EMFT	Saiti B., Bacha O.I., Masih M. (2016)	2005-2011	Contagion for conventional and Sharia compliant stock indices	Wavelet analysis	There was no significant contagion effect among all our sample MSCI conventional indices during the outbreak of the subprime crisis in the United States. Wavelet analysis can provide a valuable alternative to the existing methodologies in testing international financial contagion.

### 131 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

					Wavelets can appropriately discriminate between pure contagion and interdependence (or fundamentals) effects
IJEM	Saiti B., Nordin N.H. (2018)		Diversification benefits of Islamic investment		n.a.
IRFA	Sensoy A. (2016)	1998-2015	Compare the systematic risk in conventional and Islamic equity markets	Dynamic conditional beta	The only clear visual difference in betas between conventional and Islamic markets is observed in the financial sector. This difference disappears during the global financial crisis of 2008, suggesting that financial firms that are Shariah-compliant may not provide a lower market risk in crisis periods. The level of the systemic risk in conventional markets is slightly higher than the risk in Islamic equity markets for more than 82% of the time. Time-varying approach reveals that the difference in aggregate systemic risk is significant in only less than 3% of the sample period for both of our proxies. There is no significant difference in the levels of aggregate systemic risk during the global financial crisis of 2008 (including the near pre-and post-crisis periods), suggesting that Islamic equity markets are not able to provide a lower market risk compared to their conventional counterparts in financially turbulent times.
IRFA	Shahzad S.C.H., Ferrer R., Ballester L., Umar Z. (2017)	1996-2016	Decoupling hypothesis of the ISM from its mainstream counterparts	VAR spillover index	Strong interactions in return and volatility among the global ISM, the conventional stock markets and the set of major risk factors considered. Islamic equity universe does not constitute a viable alternative for investors who wish to hedge their investments against the vagaries of stock markets, but it is exposed to the same global factors and risks hitting the conventional financial system. This evidence leads to the rejection of the decoupling hypothesis of the ISM from conventional stock markets

IJIMEF	Tas O., Tokmakcioglu K., Ugurlu U., Isiker M. (2016)	n.a.	Comparing two groups of stocks to analyze efficiency in portfolio allocation	Stochastic dominance	Not relevant
RIBF	Trabelsi N., Naifar N. (2017)	2005-2015	Exposure of Islamic stock indexes to systemic tail events	VAR, Delta-CoVAR	The empirical reveal that portfolio including Islamic stock indexes performs better than a benchmark portfolio in turmoil periods
IRFA	Uddin J.Z., Hernandez A.J., Shahzad S.J.H., Yoon SM. (2018)	1996-2016	Efficiency of conventional and ISMs and their diversification potential	MF-DFA, WTC, Value at risk (VAR)	Islamic equities can provide diversification benefits to portfolios consisting of conventional equities. They are observed to be less efficient than the conventional ones in the short term while being more efficient in the medium term. These results suggest that Sharia-compliant portfolios contribute to overall market efficiency at a different horizon, and consequently, allow for the reduction of financial risk in investments, as well as for diversification and hedging.
PBFJ	Umar Z. (2017)	1996-2015	Performance of Islamic and Conventional equity	VAR model	Findings show that on a standalone basis Islamic equities exhibit both short-run and long-run desirable attributes for the faith-based investor. The results for the conventional investor show that the inclusion of conventional equities in the asset menu reduces the desirability of Islamic equities for short-run only. Thus, conventional equities are more desirable for long-run investors.
RISK	Umar Z., Suleman T. (2017)	1996-2015	Interdependence and Decoupling between Islamic and conventional equities	VAR-EGARCH	Results show support for the decoupling hypothesis in the post-crisis period. However, the intra-market spillover exhibits similar results for both Islamic and conventional equities
BIR	Usman M., Jibrán M.A.Q., Amir-ud-Din R., Ahkter W. (2019)	2004-2016	Dependence structure between Islamic and conventional stocks	CoVAR	The results show the diversification benefits of the Islamic stocks and investors can use Islamic finance instruments for hedging

### 133 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

PBFJ	Yilmaz M., Sensoy A., Ozturk K., Hacıhasanoglu E. (2015)	1996-2014	Correspondence between the different sectors belonging to Dow Jones Islamic equity indexes using several state-of-the-art techniques.	DCC e DECO	Islamic equity indexes are also prone to global shocks hitting the world financial system, and investors should be cautious in interpreting and forecasting the interaction structure between Islamic equity sectors. Furthermore, our results do not support the decoupling hypothesis of the Islamic equity markets from the conventional financial system.
*Articles selected from Scopus Database are showed below					
SM	Ab Razak R., Ismail N. (2019)	n.a.	n.a.	n.a.	n.a.
IJEMS	Abbes M.B. (2012)	2002-2012	Risk and the return characteristics of the Islamic market indices versus their conventional counterpart indices	EGARCH, RAP	No significant difference in mean between Islamic and conventional indices except for Italy and Australia. No difference between performance the types of indices in risk adjusted return basis
IE	Ahmed W.M.A. (2018)		differential impact of political risk on Sharia-compliant vis-a-vis conventional stocks	Dynamic panel GMM	Results suggest that conventional equity markets of developed countries prove much more sensitive to political uncertainty than do their Islamic counterparts. Overall, the present findings lend no support to the decoupling hypothesis between Islamic and conventional equities
QREF	Ahmed W.M.A. (2019)	2002-2017	Relationship between conventional and ISMs	Regression, GARCH	Presence of substantial mean and volatility spillovers radiating from the mainstream stock market indices to their Sharia-compliant counterpart, with the opposite direction being largely negated. The findings invalidate the dichotomous distinction between conventional and ISMs
JAM	Alam N. (2013)	2008-2011	Compares the performance of conventional and Islamic ETFs	Sharpe, Treynor and Sortino ratios	Islamic ETFs can beat both conventional ETFs and the market benchmark index based on risk-adjusted performance measures. Overall, both ETFs were able to outperform the market benchmark index. It is also evident that a portfolio of Islamic ETFs shows less variability and hence is less risky compared with their conventional counterpart.

FRL	Aloui C., Hkiri S.H., Abdelbari E.K., Manahov V. (2016)	1990- 2010	Investigate the co- movement between investors' sentiment and the Islamic and conventional equity return	Squared wavelet coherence methodology, causality test	The co-movement is shifting over time and frequencies. The Islamic equity returns do not behave differently from their conventional counterparts. Thus, the US investors should consider simultaneously short- and long-run co-movement in the sentiment-equity return when picking up Islamic equities in their portfolios.
IJIMEF	Antar M., Alahouel F. (2019)	n.d.	Comovement analysis to assess whether there is a safe investment during crisis	MGARCH-DCC	The MGARCH-DCC results recommend including the USA, Canada and Emerging Markets indexes with the Mena index to get diversification benefits. The Wavelet coherence confirms these results for 0 to 16 days holding period and more than six-months' investment horizons. Hence, MENA portfolio managers should not invest in Europe, UK and Emerging Markets indexes.
PBFJ	Ashraf D., Mohammad N. (2014)	2002- 2012	Perforamnce of global and regional Islamic equity indices and conventional	LSTAR model	The empirical results indicate that IEIs, in general, perform better than conventional indices during the period. not find any abnormal returns associated with Islamic equity indices on a global basis, however, there is evidence of positive abnormal returns in the case of regional indices from Europe and Asia. Overall, IEIs exhibit lower systematic risk as compared with their benchmark suggesting that any excess performance from Islamic investments stems from the systematic risk that each investment assumes with respect to their benchmark during the declining phase of capital markets
JEBO	Azmat S., Jalil M.N., Skully M., Brown K. (2016)	2009- 2013	Behavioral perspective on why Islamic capital markets are dominated by Conventional benchmarks		Not relevant
AFE	Ben Nasr A., Ajmi A.N., Gupta R. (2014)		To model conditional volatility of the DJMI return compare with conventional	FIGARCH, FITVGARCH	Not relevant

### 135 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

JIFMIM	Chau F., Deesomsak R., Wang J. (2014)	2009-2012	Impact of political uncertainty on the volatility of major stock markets by distinguishing between conventional and ISM indices	Multivariate GARCH model	The political turbulence has contributed to the volatility of MENA stock markets, especially for the Islamic indices; however, there is little or no significant impact on their interaction and integration with the World market.
IRJFFMIM	Chiadmi M.M.S., Ghaiti F. (2012)	n.a.	Risk comparative approach between the Islamic and a conventional index.	n.a.	Results show that volatility persistence of both indexes was very significant and the S&P 500 index Shariah was less volatile than the conventional index at a long run and it does present less risk at crisis periods
IJER	Chiadmi M.S., Ghaiti F. (2014)	n.a.	Volatility behaviour of Islamic stock indexes compared to their conventional counterparts	n.a.	Islamic stock indexes were significantly affected by the financial crisis, but they were less volatile than their conventional counterparts. This finding confirms the relative resilience of Islamic indexes to the global financial crisis which has affected the Islamic finance as soon as the crisis has affected the real sector of the economy.
JEBO	el Alaoui A.O., Bacha O.I., Masih M., Asutay M. (2016)	2008-2013	Relationship and shock transmission between Islamic stock and conventional counterparts	Vector Autoregressive (VAR) dynamic panel	Findings suggest that the systematic risk changes with changes in the capital structure; the Sharia compliant stocks are shown in most cases to carry less risk than conventional stock, while they do not necessarily out-perform in terms of return; during the global financial crisis. We conclude that during the global financial crisis, Islamic compliant stocks demonstrated lower values of systematic risk in the case of ‘Low Debt’ portfolios when comparison to ‘High Debt’ portfolios
JABR	El Khamlichi A., Sarkar K., Aroui M., Teulon F. (2014)	1998-2011	Efficiency of Islamic equity indices and Counterparts	Cointegration Engle and Granger (1987) approach	n.a.
JEBO	El-Masry A.A., de Mingo-Lopez D.V., Matallin-Saez J.C., Tortosa-Ausina E. (2016)	2006-2013	Compare the performance of Islamic and Conventional funds	Fama and French (1993) and Carhart (1997) models	Results show that the relative performance of Islamic and conventional funds seem to be conditioned by several factors such as the (geographical) context in which the investment is made. Considering the entire MENA region, Islamic funds perform, on average, slightly worse than

			during crisis and recovery periods		conventional funds. However, if the analysis is restricted to Gulf Cooperation Council (GCC) countries, the result opposite is found. In addition, the performance gap between the two types of funds either widens or shrinks when considering recovery or crisis times, providing evidence that Islamic funds are more stable in times of distress.
IJIMEF	Farooq O.M., Hasib Reza M. (2014)		Performance of Islamic and Conventional indices	Technical Analysis (TA), MACD, stochastic	n.a.
SUST	de la O. Gonzalez M.O., Jareno F., El Haddouti (2019)	1996-2015	Performance of sector portfolios from Islamic and conventional stock markets	CAPM; MPPM; Jensen; Treynor;	Islamic sector portfolios perform better than their conventional counterparts for all performance measures during the whole sample period, as well as in the three sub-sample periods. Sharia-compliant assets can contribute to improving the sustainability of unattractive performance portfolios during financial crises.
JAPB	Hengchao Z., Hamid Z. (2015)	2006-2010	Impact of US subprime crisis on the long-term and short-term dynamic relationship	Causality test, VAR	The study reveals that, after the debut of the U.S. subprime crisis, Asia-Pacific Islamic stock markets increasingly integrated among themselves and with their conventional counterparts. In addition, the conventional markets of the United States and Japan significantly influence the short-run fluctuations of Asia-Pacific Islamic and conventional markets.
FMII	Hoque H., Kabir S.H., Abdelbari E.K., Manahov V. (2016)	2008-2012	Relationship between the Islamic and conventional	Johansen	Islamic and conventional equity markets move together despite fundamental differences and given that market microstructure, dividends, capital gains, taxation and governance systems are different across the markets.
QREF	Jawadi F. & N., Idi Cheffou A. (2019)	1999-2017	Islamic and conventional indexes performance	ARMA-EGARCH	Findings indicate that contrary to expectations, conventional and ethical investments show high comparable levels of uncertainty but vary with phases of the business cycle. Significant and cyclical impulse response reaction functions between uncertainty measures, suggesting further evidence of uncertainty spillovers. These findings could help investors to better rebalance their portfolios regarding uncertainty change.



## 137 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

AEL	Jawadi F. & N., Idi Cheffou A. (2019)		Relationship between conventional and ISMs	Wavelet	Results provide a positive and significant correlation between the two stock markets, which has increased significantly in the aftermath of the GFC. This finding qualifies the ISM as a rather different market that could become a real alternative only if it proposes a less risky investment framework.
IE	Jawadi F. & N., Louhichi W. (2014)	2000-2011	Islamic and conventional indexes performance	CAPM-GARCH	Conventional investments seemed promising before the crisis and during periods of calmness. Islamic funds have outperformed them since the subprime crisis began and in turbulent times, but this result is specific to the region under consideration and to the performance criterion. The heterogeneous conclusions in terms of performance may reflect the different stages of the development of the Islamic finance industry in these regions. The impact of the 2008–2009 global financial crisis on Islamic markets is less significant than for conventional markets, suggesting that by keeping their eye on Islamic finance products, investors can expect some interesting investment opportunities.
JKAU	Kantakji M.H. (2019)	1996-2013	Influence of economic fundamentals on both Islamic and conventional equity in US stock market	Not relevant	
DLSU	Majid M.S.A. (2018)	2007-2011	Empirically explore the impacts of the 2008 global financial crisis on both Islamic and conventional equity markets	Cointegration technique and impulse response functions	The study found that the conventional equity markets performed marginally poorer than their Islamic counterparts during the 2008 global financial crisis. This finding implied that the Islamic equity markets were more stable and resilient than the conventional equity markets amidst the crisis period
JFMIM	Mansor F., Bhaiti M.I., Ariff M. (2015)	1990-2009	Investigate performance of two carefully matched equity-only mutual funds, one based on Ethics-filtering IMFs and the other which are CMFs	OLS regression, CAPM	This evidence in this study supports rejecting market timing expertise among mutual fund managers. Second the impact of the various fees reduces substantially the common market reported gross returns by the mutual funds. There is no difference between the performance of IEFs and CEFs before fees. On the other hand, after fees, there is a

					significant difference almost equal to the size of the fees in the case of IEFs. The risk characteristics are the same.
JABR	Miniaoui H., Sayani H., Chaibi A. (2015)	2006- 2012	Performance and risk of Islamic and conventional indices of the Gulf Cooperation Council (GCC) countries in the wake of financial crisis of 2008	GARCH	The results show that the financial crisis impacted on the mean returns of Bahrain, the other indices remained unaffected. The financial crisis, however, impacted volatility in three GCC markets (Kuwait, Bahrain, and the UAE), while the impact on the remaining markets (Saudi Arabia, Oman, and Qatar) and the Islamic index was insignificant. More interestingly, we show that the Islamic index did not exhibit lower volatility than its conventional counterparts.
JARLE	Muharam H., Wahyudi S., Pangestudi I.R.D., Najmudin (2018)	2000- 2016	Dynamic interactions of the Islamic and conventional stock markets and factors	ADCC model, GARCH, regressions	Stronger dynamic interaction level for all combination pairs was only found among developed markets and in each market. Moreover, the stronger (weaker) interaction level of developed (emerging) stock markets, for both the Islamic and conventional indices, reflects the smaller (greater) inflation rate differential, industrial production growth rate differential, interest rate differential, and exchange rate volatility. In addition, the widespread market crisis affects on interaction level of all stock market pairs.
JTAIT	Nugroho M., Moehaditoyo S.H., Anam K. (2017)		Islamic and conventional indexes performance	Single Index Model and Sharpe	Sharia stocks JII portfolio has a higher return rate and lower risk portfolio compare to conventional stock IDX30. While the views of the performance index, JII Islamic stock index has a value of Sharpe, Treynor index and Jensen index higher than conventional stock IDX30. It can be concluded that the portfolio of Islamic stocks JII has better performance than the conventional stock portfolio IDX30.
JABER	Ramasamy R., Nawawi N.H.A., Mohamed Z. (2015)	n.a.	Performance of Shariah compliant equity portfolio	n.a.	Islamic indices have the same level of (in)efficiency as conventional ones, the indices of MSCI and FTSE families are the less inefficient. In terms of cointegration analysis, Islamic indices of Dow Jones and S&P have no cointegrating relations with their respective benchmarks, which suggests the existence of long-run diversification opportunities.
BIR	Saiti B., Bacha O.I., Masih M. (2014)	2007- 2011	Investigating whether Islamic stock indices provide special avenue	Multivariate DCC-GARCH	he conventional and Islamic MSCI indices of Japan, GCC ex-Saudi, Indonesia, Malaysia and Taiwan provide better diversification benefits compared to Korea, Hong Kong, China and Turkey. It tends to suggest that the Islamic

### 139 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review

			for the US-based investors.		countries provide better diversification benefits compared to the Far East countries with strong policy implications for the domestic and international investors in their portfolio diversification for hedging against unforeseen risks.
IMFI	Sherif M. (2016)	1999-2013	Islamic and conventional indexes performance	Carhart model	The analysis indicates that ethical investment has only an insignificant influence on the performance of stock market returns for both the economy and industry levels
JP	Tee L-T., Kew S-R (2019)	1997-2016	Examine wheter business cycle and financial crisis affect the risk of Islamic stocks compared to conventional	n.a.	business cycles play a crucial role in affecting stock risk. Specifically, stock risk tends to be higher during the economic contraction than during economic expansion for Islamic, conventional and all stocks. We further test whether Asian and Global financial crises exacerbate stock risk. The results document that the level of stock risk increases during financial crises. Moreover, we find that the impact of economic contraction and financial crises on increasing stock risk remain significant after controlling for various variables known to have effect on risks. In addition, we discover that the risk of Islamic stock is lower compared to those of conventional and all stocks during the economic contraction and financial crises. This recommends the diversification advantage and investment opportunity of the Islamic stocks during the periods of financial turbulence
RFE	Walkshausl C., Lobe S. (2012)	2002-2011	Islamic and conventional indexes performance	RAP	results provide supportive evidence that religious stock screens in the context of index-based Sharia-compliant investments do not reduce financial performance in comparison to conventional index investments around the world. This insight is particularly helpful for Shariah-compliant investors as they can pursue passive stock investments following their religious beliefs without sacrificing financial performance.

Source: author’s own compilation. \*n.a.= data not available

---

## References

- Ab Razak, R., Ismail, N. (2019). Dependence modelling and portfolio risk estimation using GARCH-copula approach. *Sains Malaysiana*, 48(7), 1547-1555
- Abatecola, G., Mandarelli, G., Poggesi, S. (2013). ‘The personality factor: how top management teams make decisions. A literature review. *Journal of Management & Governance*, 17(4), 1073–1100
- Abbas, M.B. (2012). Risk and Return of Islamic and Conventional Indices. *International Journal of Euro-Mediterranean Studies*, 5(1), 1–23
- Abu-Alkheil, A., Khan, W.A., Parikh, B., Mohanty, S. (2017). Dynamic co-integration and portfolio diversification of Islamic and conventional indices: Global evidence. *The Quarterly Review of Economics and Finance*, 66, 212-224
- Ahmad, W., Rais, S., Shaik, A.R. (2018). Modelling the directional spillovers from DJIM Index to conventional benchmarks: Different this time? *The Quarterly Review of Economics and Finance*, 67, 14-27
- Ahmed, N., Farooq, O. (2018). Does the degree of Shari’ah compliance affect the volatility? Evidence from the MENA region. *Research in International Business and Finance*, 45, 150-157
- Ahmed, W.M.A. (2018). How do Islamic versus conventional equity markets react to political risk? Dynamic panel evidence. *International Economics*, 156, 284-304
- Ahmed, W.M.A. (2019). Islamic and conventional equity markets: Two sides of the same coin, or not? *The Quarterly Review of Economics and Finance*, 72, 191-205
- Ajmi, A.N., Hammoudeh, S., Nguyen, D.K., Sarafrazi, S. (2014). How strong are the causal relationships between Islamic stock markets and conventional financial systems? Evidence from linear and nonlinear tests. *Journal of International Financial Markets, Institutions & Money*, 28, 213-227

## 141 Islamic stock market versus conventional: Are Islamic investing a 'Safe Haven' for investors? A systematic literature review

---

- Alam, N., Arshad, S., Rizvi, S.A.R. (2016). Do Islamic stock indices perform better than conventional counterparts? An empirical investigation of sectoral efficiency. *Review of Financial Economics*, 31, 108-114
- Alexakis, C., Pappas, V., Tsikouras, A., (2017). Hidden cointegration reveals hidden values in Islamic investments. *Journal of International Financial Markets Institutions and Money*, 46, 70-83
- Ali, S., Shahzad, J.H., Raza, N., Al-Yahyaee, K.H. (2018). Stock market efficiency: A comparative analysis of Islamic and conventional stock markets. *Physica A: Statistical Mechanics and its Applications*, 503, 139-153
- Al-Khazali, O., Lean, H.H., Samet, A. (2014). Do Islamic stock indexes outperform conventional stock indexes? A stochastic dominance approach. *Pacific-Basin Finance Journal*, 28, 29-46
- Al-Khazali, O.M., Leduc, G., & Alsayed, M.S. (2016). A Market Efficiency Comparison of Islamic and Non-Islamic Stock Indices. *Emerging Markets Finance and Trade*, 52(7), 1587-1605
- Aloui, C., Hkiri, B., Lau, C.K.M., Yarovaya L., (2016). Investors' sentiment and US Islamic and conventional indexes nexus: A time-frequency analysis. *Finance Research Letters*, 19 (2016), pp. 54-59
- Antar, M., Alahouel, F. (2019), "Co-movements and diversification opportunities among Dow Jones Islamic indexes", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 13 No. 1, pp. 94-115
- Arouri, M.E., Ben Ameur, H., Jawadi, N., Jawadi, F. & Louhichi, W. (2013). Are Islamic finance innovations enough for investors to escape from a financial downturn? Further evidence from portfolio simulations. *Applied Economics*, 45, 3412-3420
- Ashraf, D. (2016). Does Shari'ah Screening Cause Abnormal Returns? Empirical Evidence from Islamic Equity Indices. *Journal of O*, 134, 209-228

- 
- Ashraf, D., Mohammad, N. (2014). Matching perception with the reality - Performance of Islamic equity investments. *Pacific-Basin Finance Journal*, 28, issue C, p. 175-189.
  - Azad, A.S.M.S., Azmat, S., Chazi, A., Ahsan, A. (2018). Sailing with the non-conventional stocks when there is no place to hide. *Journal of International Financial Markets, Institutions & Money*, 57, 1-16
  - Bahloul, S., Mroua, M., & Naifar, N. (2017). Further evidence on international Islamic and conventional portfolios diversification under regime switching. *Applied Economics*, 49(39), 3959-3978
  - Bahloul, S., Mroua, M., Naifar, N. (2017). The impact of macroeconomic and conventional stock market variables on Islamic index returns under regime switching. *Borsa Istanbul Review*, 17(1), 62-74
  - Balcilar, M., Demirer, R., Hammoudeh, S. (2015). Global risk exposures and industry diversification with Shariah-compliant equity sectors. *Pacific-Basin Finance Journal*, 35, 499-520
  - Balcilar, M., Jooste, C., Hammoudeh, S., Gupta, R., Babalos, V. (2015) Are there long-run diversification gains from the Dow Jones Islamic finance index? *Applied Economics Letters*, 22(12), 945-950
  - Bellalah, M., Chayeh, Z. (2015). Advanced risk profile analysis of Islamic equity investment: evidence from the American, Asian and European markets. *Journal of Risk*, 17(6), 73-99
  - Belouafi, A., Bourakba, C., and Saci, K. (2015). Islamic Finance and Financial Stability: A Review of the Literature. *Journal of King Abdulaziz University: Islamic Economics*, Vol. 28, No. 2, 2015. Available at SSRN: <https://ssrn.com/abstract=3063842>
  - Ben Rejeb, A (2017). On the volatility spillover between Islamic and conventional stock markets: a quantile regression analysis. *European Journal of Management and Business Economics*, Vol. 28 No. 3, pp. 301-322

### **143 Islamic stock market versus conventional: Are Islamic investing a ‘Safe Haven’ for investors? A systematic literature review**

---

- Ben Rejeb, A., Arfaouy, M. (2019). Do Islamic stock indexes outperform conventional stock indexes? A state space modeling approach. *Research in International Business and Finance*, 42, 794-815
- Brogi, M., Lagasio, V. (2019). Do bank boards matter? A literature review on the characteristics of banks' board of directors. *International Journal of Business Governance and Ethics, Inderscience Enterprises Ltd*, 13(3), 244-274
- Camgöz, M., Köse, K. A., Seval, B. (2018). Risk and Return Characteristics of Islamic Indices: An Empirical Approach. *Istanbul Business Research*, 47(2), 124-153
- Cevik, E.I., Bagan, M.F. (2018). Regime-dependent relation between Islamic and conventional financial markets. *Borsa Istanbul Review*, 18(2), 114-121
- Charfeddine, L., Najah, A., Teulon, F. (2016). Socially responsible investing and Islamic funds: New perspectives for portfolio allocation. *Research in International Business and Finance*, 36, 351-361
- Charles, A., Darné, O. (2015). Are the Islamic indexes size or sector oriented? Evidence from Dow Jones Islamic indexes. *Economics Bulletin*, 35(3), 1897-1905
- Charles, A., Darné, O., Pop, A. (2015). Risk and ethical investment: Empirical evidence from Dow Jones Islamic indexes. *Research in International Business and Finance*, 35, 33-56
- Chau, F., Deesomsak, R., Wang, J. (2014). Political uncertainty and stock market volatility in the Middle East and North African (MENA) countries. *Journal of International Financial Markets, Institutions & Money*, 28, 1-19
- Chiadmi, M., Ghaiti, F. (2012). Modelling volatility stock market using the ARCH and GARCH models: Comparative study between an Islamic and a conventional index (SP sharia VS SP 500). *International Research Journal of Finance and Economics*, 91, 138-146
- Chiadmi, M.S., Ghait, F. (2014). Modelling volatility of Islamic stock indexes: Empirical evidence and comparative analysis. *International Journal of Economic Research*, 11(2), 241-276

- 
- Cook, D.J., Mulrow, C.D., Haynes, B.H. (1997). Systematic Reviews: Synthesis of Best Evidence for Clinical Decisions. *Annals of Internal Medicine*, 126(5), 376–380.
  - Corbet, S., Lucey, B., Urquhart, A., Yarovaya, L., (2019). "Cryptocurrencies as a financial asset: A systematic analysis," *International Review of Financial Analysis*, Elsevier, vol. 62(C), pages 182-199.
  - Cowton, C.J, (1994). "The Development of Ethical Investment Products", in A.R. Pindl and B. Prodhon (Eds.), *Ethical Conflicts in Finance*, Blackwell: Oxford.
  - Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies*, 47, 1154–1191
  - David, R. J., & Han, S. K. (2004). A systematic assessment of the empirical support for transaction cost economics. *Strategic Management Journal*, 25(1), 39–58
  - de la O González, M., Jareño F., El Haddouti, C. (2019). Sector Portfolio Performance Comparison between Islamic and Conventional Stock Markets. *Sustainability, MDPI, Open Access Journal*, 11(17), 1-23.
  - Dell’Atti, A., Miglietta, F (2009). Le fonti dell’Islam e le scuole coraniche. Fondi sovrani arabi e finanza islamica. *Egea*, 76-92
  - Dewandaru, G., Bacha, O.I., Masih, A.M.M., Masih, R. (2015). Risk-return characteristics of Islamic equity indices: Multi-timescales analysis. *Journal of Multinational Financial Management*, 29, 115-138
  - Dewandaru, G., Rizvi, S.A.R., Masih, R., Masih, M., Alhabshi, S.O. (2014). Stock market co-movements: Islamic versus conventional equity indices with multi-timescales analysis. *Economic Systems*, 38, 553-571
  - Diaw, A. (2015), "The global financial crisis and Islamic finance: a review of selected literature", *Journal of Islamic Accounting and Business Research*, Vol. 6 No. 1, pp. 94-106.



## 145 Islamic stock market versus conventional: Are Islamic investing a 'Safe Haven' for investors? A systematic literature review

---

- Dinar Standard and Salam Gateway (2019). The 7th Annual State of the Global Islamic Economy Report (2019/20). <https://salaamgateway.com/reports/report-state-of-the-global-islamic-economy-201920>
- el Alaoui, A.O., Bacha, O.I., Masih, M., Asutay, M. (2016). Shari'ah screening, market risk and contagion: A multi-country analysis. *Journal of Economic Behavior & Organization*, 132, 93-112
- El Amri H., Hamza, T. (2017). "Are There Causal Relationships Between Islamic Versus Conventional Equity Indices? International Evidence," *Studies in Business and Economics*, Lucian Blaga University of Sibiu, Faculty of Economic Sciences, vol. 12(1), pages 40-60
- El Mehdi, I.K., Mghaieth, A. (2017). Volatility spillover and hedging strategies between Islamic and conventional stocks in the presence of asymmetry and long memory. *Research in International Business Finance*, 39, 595-611.
- El Melki, A., Ben Arab, M. (2009). Ethical Investment and the Social Responsibilities of the Islamic Banks. *International Business Research*, 2(2)
- El-Masry, A. A., de Mingo-López, D.V., Matallín-Sáez, J.C., Tortosa-Ausina, E. (2016). Environmental conditions, fund characteristics, and Islamic orientation: An analysis of mutual fund performance for the MENA region. *Journal of Economic Behavior & Organization*, 132, issue S, p. 174-197
- Fatima, A., Rashid, A. Khan, A. (2019). Asymmetric impact of shocks on Islamic stock indices: a cross country analysis. *Journal of Islamic Marketing*, 10(1), 2-86
- Forte, G., Miglietta F. (2011). A comparison of Socially Responsible and Islamic Equity Investments, *Journal Money Invest. Bank.*, 21, pp. 116-132
- Gad, S. and Andrikopoulos, P. (2019). Diversification benefits of Shari'ah compliant equity ETFs in emerging markets. *Pacific-Basin Finance Journal*, 53, 133-144

- 
- Hammoudeh, S., Mensi, W., Reboredo, J.C., Nguyen, D.K. (2014). Dynamic dependence of the global Islamic equity index with global conventional equity market indices and risk factors. *Pacific-Basin Finance Journal*
  - Hassan, A., Mollah, S. (2018). Islamic Finance. Ethical Underpinnings, Products, and Institutions. *Palgrave Macmillan, Springer Nature*
  - Hassan, A., Rubio, J.F., Hassan, M.K., Ozkan, B., Merdad, H. (2017). Coskewness in islamic, socially responsible and conventional mutual funds: An asset pricing test., *International Journal of Business and Society*, Volume 18, Issue S1, 1 July 2017, Pages 23-44
  - Hassan, M.K., Aliyu, S., Huda, M., & Rashid, M. (2019). A survey on Islamic Finance and accounting standards. *Borsa Istanbul Review*, 19.
  - Hassan, M.K., Aliyu, S., Paltrinieri, A., Khan, A. (2018). A review of Islamic Investment Literature. *Special Section: Understanding Indonesia's Economic and Financial Systems. Economic Papers. The economic papers of Australia, 2018.*
  - Hassan, M.K., Aliyu, S. (2018). A contemporary survey of islamic banking literature. *Journal of Financial Stability*, 34, 12-43.
  - Hayat R., Kraeussl R. (2011). Risk and return characteristics of Islamic equity funds. *Emerging Markets Review*, 12, 189-203
  - Hengchao Z., Hamid Z. (2015). The Impact of Subprime Crisis on Asia-Pacific Islamic Stock Markets. *Journal of Asia-Pacific Business*, Volume 16, issue 2, 105-127
  - Hkiri, B., Hammoudeh, S., Aloui C., & Yarovaya, L. (2017). Are Islamic indexes a safe haven for investors?: An analysis of total, directional and net volatility spillovers between conventional and Islamic indexes and importance of crisis periods. *Pacific-Basin Finance Journal*, 43, 124-150
  - Ho, C.S.F., Abd-Rahman, N.A., Yusuf, N.H.M. and Zamzamin, Z. (2011). Comparison of quantitative Shariah-compliant screening methods. *International Journal of Islamic Finance*, 3(2), pp. 91-109

## 147 Islamic stock market versus conventional: Are Islamic investing a 'Safe Haven' for investors? A systematic literature review

---

- Hoepner, A.G.F., Hussain, G., Rezek R.&M., (2011). Islamic mutual funds' financial performance and international investment style: evidence from 20 countries. *The European Journal of Finance*, 17(9-10), 829-850
- Hoque, H., Kabir, S.H., Abdelbari E.K., Manahov, V. (2016). Islamic and Conventional Equity Market Movements During and After the Financial Crisis: Evidence form the Newly Launched MSCI Indices. *Financial Markets, Institutions & Instruments. New York University Solomon Center and Wiley Periodicals, Inc.*, 25(4), 217-252
- Hussain, H.I.; Grabara, J.; Razimi, M.S.A.; Sharif, S.P. Sustainability of Leverage Levels in Response to Shocks in Equity Prices: Islamic Finance as a Socially Responsible Investment. *Sustainability* 2019, 11, 3260.
- Ibrahim, M. (2015), Issues in Islamic banking and finance: Islamic banks, Shari'ah-compliant investment and sukuk, *Pacific-Basin Finance Journal*, 34, (C), 185-191
- International Monetary Fund (IMF), 2019. Global Financial Stability Report 2019, Washington DC, USA, October
- International Monetary Fund, (2019). Global Financial Stability Report. <https://www.imf.org/~media/Files/Publications/GFSR/2019/October/English/text.ashx?la=en>
- Islamic Financial Service Board (IFSB), 2019. Islamic Financial Services Industry Stability Report 2019, Kuala Lumpur, Malaysia, July
- Islamic Financial Services Board - IFSB (2019). Islamic Financial Services Industry Stability Report. Kuala Lumpur, Malaysia, July. <https://www.ifsb.org/sec03.php>
- Jawadi, F., Jawadi N., Cheffou, A.I. (2019). A statistical analysis of uncertainty for conventional and ethical stock indexes. *The Quarterly Review of Economics and Finance*, 74, 9-17
- Jawadi, F., Jawadi, N., Cheffou, I.C., (2015). Are Islamic stock markets efficient? A time-series analysis. *Applied Economics*, 47(16), 1686-1697

- 
- Jawadi, F., Jawadi, N., Idi Cheffou, A. (2019). Wavelet analysis of the conventional and Islamic stock market relationship ten years after the global financial crisis. *Applied Economics Letters*, 1-7
  - Jawadi, F., Jawadi, N., Louhichi, W. (2014). Conventional and Islamic stock price performance: An empirical investigation. *International Economics*, 137, 73-87
  - Kenourgios, D., Naifar, N., Dimitriou, D. (2016). Islamic financial markets and global crises: Contagion or decoupling? *Economic Modelling*, 57, 36-46
  - La Torre, M., Vento, G.A. (2006). *Microfinance*. Palgrave Macmillan
  - Majdoub, J., Mansour, W., Jouini, J. (2016). Market integration between conventional and Islamic stock prices. *North American Journal of Economics and Finance*, 27, 436-457
  - Majid M.S.A. (2018). Stability and resilience of equity markets amidst the 2008 global financial crisis: Islamic versus conventional markets. *DLSU Business and Economics Review*, Volume 28, Issue 1, July 2018, Pages 34-48
  - Mansor F., Bhatti M.I., Ariff M. (2015). New evidence on the impact of fees on mutual fund performance of two types of funds. *Journal of International Financial Markets, Institutions & Money*, 35, 102-115
  - Masih, M., Kamil, NKM., Bacha, OI. (2018). "Issues in Islamic Equities: A Literature Survey," *Emerging Markets Finance and Trade*, Taylor & Francis Journals, vol. 54(1), pages 1-26, January.
  - Mensi, W., Hammoudeh, S., Sensoy, A., & Yoon, S.M. (2017). Analysing dynamic linkages and hedging strategies between Islamic and conventional sector equity indexes. *Applied Economics*, 49(25), 2456-2479
  - Miglietta F. (2009). Islamic finance and Banks - Contracts, management features and growth perspective in Italy, *Islamic Finance principles*, in Porzio (book), Milano, Bancaria Editrice

## 149 Islamic stock market versus conventional: Are Islamic investing a 'Safe Haven' for investors? A systematic literature review

---

- Miniaoui, H., Sayani, H., Chaibi, A., (2015). The Impact Of Financial Crisis On Islamic And Conventional Indices Of The GCC Countries. *Journal of Applied Business Research*, 31(2), 357-370
- Mohammad, N. and Ashraf, D. (2015). The market timing ability and return performance of Islamic equities: An empirical study. *Pacific-Basin Finance Journal*, 34, 169-183
- Moher, D., Liberati, A., Tetzlaff, J., Altman, DG, The PRIMA Group (2009). Preferred Reporting Items for Systematic Reveiws and Meta-Analyses: The PRISMA Statement. *Annals of Internal Medicine (Opena Access)*, 151 (4)
- Muharam, H., Wahyudi, S., Pangestuti, I., Najmudin, N. (2018). Interaction of Islamic and Conventional Stock Markets and the Economic Connectivity. *Journal of Advanced Research in Law and Economics*, 9(2), 591-602.
- Mwamba, J.W.M., Hammoudeh, S., Gupta, R. (2017). Financial tail risks in conventional and Islamic stock markets: A comparative analysis. *Pacific-Basin Finance Journal*, 42, 60-82
- Naifar, N. (2016). Do global risk factors and macroeconomic conditions affect global Islamic index dynamics? A quantile regression approach. *The Quarterly Review of Economics and Finance*, 61, 29-39
- Nazioglu, S., Hammoudeh, S., Gupta, R. (2015). Volatility transmission between Islamic and Conventional equity markets: evidence from causality-in-variance test. *Applied Economics*, 47(46), 4996-5011
- Nugroho, M., Moehaditoyo, S.H., Anam, K. (2017). The system of investment decision making through analysis of stock portfolio performance based single index model (Comparison study of shariah stocks and conventional stocks). *Journal of Theoretical and Applied Information Technology*, 95(6), 1418-1431
- Paltrinieri, A., Floreani, J., Kappen, J.A., Mitchell, M.C., Chawla, K. (2019). Islamic, socially responsible, and conventional market comovements: Evidence from stock indices. *Thunderbird International Business Review*, 61, 719– 733

- 
- Paltrinieri, A.L., Hassan, M.K., Bahoo, S., & Khan, A. (2019). A bibliometric review of sukuk literature. *International Review of Economics & Finance*.
  - Paul, J., Criado, A.R., (2020). "The art of writing literature review: What do we know and what do we need to know?," *International Business Review*, Elsevier, vol. 29(4).
  - Polato, M., Floreani, J., Paltrinieri, A., Pichler, F. (2016). Religion, governance and performance: evidence from Islamic and conventional stock exchanges. *Journal of Management and Governance*, 20, 591-623
  - Ramasamy, R., Nawawi, N.H.A., Mohamed, Z. (2015). Effectiveness of diversification and fund allocation of Shariah compliant equity portfolios. *International Journal of Applied Business and Economic Research*, 13 (9), pp. 6819-6840
  - Raza, M.W., Ashraf, D. (2019). Does the application of smart beta strategies enhance portfolio performance? The case of Islamic equity investments. *International Review of Economics & Finance*, 60, 46-61
  - Rizvi, SAR., Arshad, S. (2018). "Understanding time-varying systematic risks in Islamic and conventional sectoral indices," *Economic Modelling*, Elsevier, vol. 70(C), pages 561-570.
  - Saâdaoui, F., Naifar, N., Aldohaiman, M.S. (2017). Predictability and co-movement relationships between conventional and Islamic stock market indexes: A multiscale exploration using wavelets. *Physica A: Statistical Mechanics and its Applications*, 482, 552-568
  - Safiullah, M. and Shamsuddin, A. (2019). Asset pricing factors in Islamic equity returns. *International Review of Finance*, 1-32
  - Saiti, B., Noordin, N. (2018). Does Islamic equity investment provide diversification benefits to conventional investors? Evidence form the multivariate GARCH analysis. *International Journal of Emerging Markets*, 13(1), 267-289
  - Saiti, B., Bacha, I.O., & Masih, M. (2016). Testing the Conventional and Islamic Financial Market Contagion: Evidence from Wavelet Analysis. *Emerging Markets Finance and Trade*, 52(8), 1832-1849

## 151 Islamic stock market versus conventional: Are Islamic investing a 'Safe Haven' for investors? A systematic literature review

---

- Saiti, B., Bacha, O.I., Masih, M., 2014. The diversification benefits from Islamic investment during the financial turmoil: The case for the US-based equity investors. *Borsa Istanbul Review*, 14-4, 196-211.
- Sensoy, A. (2016). Systematic Risk in Conventional and Islamic Equity Markets. *International Review of Finance*, 16(3), 457-466
- Shahzad, S.J.H., Ferrer, R., Ballester, L., Umar, Z. (2017). Risk transmission between Islamic and conventional stock markets: A return and volatility spillover analysis. *International Review of Financial Analysis*, 52, 9-26
- Sherif, M. (2016). Ethical Dow Jones Indexes and Investment Performance: International Evidence. *Investment Management and Financial Innovations*, 13(2)
- Trabelsi, N., Naifar, N. (2017). Are Islamic stock indexes exposed to systemic risk? Multivariate GARCH estimation of CoVaR. *Research in International Business and Finance*, 42, 727-744.
- Tranfield, D., Denyer, D., Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222
- Uddin, J.Z., Hernandez, J.A., Shahzad, S.J.H., Yoon, S.M. (2018). Time-varying evidence of efficiency, decoupling, and diversification of conventional and Islamic stock. *International Review of Financial Analysis*, 56, 167-180
- Umar, Z., Suleman, T. (2017). Asymmetric Return and Volatility Transmission in Conventional Equities. *Risks, MDPI, Open Access Journal*, 5(2), 1-18, March.
- Umar, Z. (2017). Islamic vs conventional equities in a strategic asset allocation framework. *Pacific-Basin Finance Journal*, Vol. 42, pp. 1-10
- Usman, M., Qamar Jibrán, M. A., Amir-ud-Din, R., Akhter, W. (2019). Decoupling hypothesis of Islamic stocks: Evidence from copula CoVaR approach. *Borsa Istanbul Review*, 19-S1, S56-S63.

- 
- Walkshäusl, C., Lobe, S. (2012). Islamic investing. *Review of Financial Economics*, 21, 53-62
  - Wilson, R. (1997). Islamic finance and ethical investment. *International Journal of Social Economics*, Vol. 24 No. 11, pp. 1325-1342
  - Yilmaz, M.K., Sensoy, A., Ozturk, K., Hacıhasanoglu, E. (2015). Cross-sectoral interactions in Islamic equity markets. *Pacific-Basin Finance Journal*, 32, 1-20
  - Zaher, T.S., Hassan, M.K. (2001). A Comparative Literature Survey of Islamic Finance and Banking.
  - Zulhibri, M. (2015). "A synthesis of theoretical and empirical research on sukuk," *Borsa Istanbul Review*, Research and Business Development Department, Borsa Istanbul, vol. 15(4), pages 237-248, December.





## Chapter 4

# Make the Best from Comparing conventional and Islamic Asset Classes. A Design of an *All-Seasons Combined Portfolio*

---

**Abstract:** This paper aims to contribute to the existing literature in portfolio management and strategy by investigating the performance, diversification, and hedging benefits arising from integrating Sharia-compliant stocks into a conventional portfolio. Thus, this paper tests the performance of a Combined Portfolio, resulting from the combination of conventional Islamic instruments, covering different macroeconomic scenarios in the last decade (2010–2020). The strategic asset allocation was designed following the Global Macro Anima (GMA) strategy, solving a risk-parity optimisation problem using a specifically developed MATLAB™ algorithm. The findings will contribute to answering the question related to the possibility of including alternative instruments to

increase diversification with hedging benefits by building asset allocations that perform well across different macroeconomic scenarios.

*“The Covid-19 is not a Black Swan. It was more predictable than people realise. The Black Swan was meant to explain why, in a networked world, we need to change business practices and social norms not to provide a cliché for any bad thing that surprises us.”*

Nassim Taleb

∞

## **4.1 Introduction**

COVID-19 has strongly stressed and tested the global financial markets, representing a tough challenge for asset management. The pandemic represents an exogenous economic shock, although this depends on unpredictable noneconomic factors, different from the global financial crisis in 2008 (GFC) or the European sovereign debt crisis in 2010–2013, which were endogenous shocks due to financial reasons (Borio 2020). It affects the global economy, triggering several sectors, such as labour markets, global supply chains, and consumption behaviour, since national authorities have declared lockdowns ordering the shutdown of most noncore business activities. These strict actions generated severe demand and supply-chain shrinking in the financial market following the outbreak. The emerging and developed stock markets have gradually fallen, declaring the hunt’s open season to safe-haven assets to limit the contagion effects. For this purpose, scholars are also keeping an eye on the Islamic Financial System (IFS), which demonstrated more stability and resilience due to the intrinsic underpinnings of ethicality and sustainability of the Shariah-compliant principles (Arouri et al. 2013; Ashraf et al. 2020;

---

Zhang and Hamid 2015; Jawadi et al. 2014; Paltrinieri et al. 2019). Ashraf et al. (2020) test the performance of the S&P Dow Jones, confirming that it underperformed compared to its Islamic counterparts during Q1 of 2020, and supporting the hypothesis that Islamic equities provide portfolio-hedging benefits during severe market downturns. Haroon et al. (2021) also reported Islamic equity diversification opportunities due to their lower systematic risk. However, Hasan et al. (2021) contested the decoupling hypothesis of the Islamic stock market from the conventional one, since the Shariah screening process fails to provide immunity. Furthermore, the major Islamic stock indexes outperformed their counterparts during the period 2019–2020, especially after the stock-market crash in March 2020 (Sherif 2020). The literature also focuses on the performance of Islamic mutual funds, compared with the conventional ones, depending on the managerial and market timing skills (Mansor et al. 2020). In addition, during the COVID-19 crash, which was severe and quick, every market crash awakened and reinforced some longstanding trending topics for academics and practitioners, such as:

- The renewed attention to assets uncorrelated or negatively correlated with other traditional assets, such as gold, precious metals, commodities, or treasuries, providing portfolio-diversification benefits in terms of volatility, downside risk, and maximum drawdown mitigation power, particularly during financial downturns (Baur and Lucey 2010; Baur and McDermott 2010; Bouri et al. 2020; Ji et al. 2020; Kristoufek 2020; Reboredo 2013).
- The hedging benefits and resilience of Islamic equities during the last great GFC are attributed to the limited exposure to high-leverage companies due to the Shariah screening (Ashraf et al. 2020; Jawadi et al. 2014). IFS distinguishes itself by promoting a more ethical approach to profit and risk sharing, facilitating fairness in financial matters (Al Rahahleh et al. 2019).

- The academic interest in the Islamic Stock Market (ISM) compared to the conventional one has divergent results in terms of performance (Belouafi et al. 2015; Delle Foglie and Panetta 2020; Hassan et al. 2019; Masih et al. 2018). Delle Foglie and Panetta (2020) proposed a change in the research approach, searching for the possibility to evaluate the Shariah-compliant instrument diversification, decoupling and hedging benefits, and combining the conventional portfolio and not merely different asset classes.

- The financial crisis increases the need to design a portfolio strategy that fits all macroeconomic environments, and faces the current postcrash scenario and future economic and financial uncertainty. Assuming every economic cycle is a set of unpredictable chronological events affecting each specific asset class performance, it seems unnecessary to forecast the next financial downturns, since it is impossible to predict the future (Economic machine—Bridgewater 2011). This principle also corresponds to the theoretical background underlying the foundation of Global Macro Anima (GMA), a strategic asset allocation based on the diversification across macroeconomic scenarios proposed by Pola (2013, 2021). The GMA approach overcomes the mean-variance framework that dominates portfolio strategies, declaring that “asset–return dynamics can be explained mainly by variations of expectations rather than the levels of macroeconomic variables”.

Finally, this paper aims to contribute to the literature of portfolio-management and asset-allocation strategies, considering typical safe-haven assets combined with Islamic stocks, following a Combined Portfolio approach (Delle Foglie and Panetta 2020). According to Delle Foglie and Panetta (2020), the literature has focused so far on the contraposition of the ISM with the conventional market without investigating the possible positive effects of their combination in a portfolio-management logic. The Combined Portfolio aims to overcome the mere comparative approach (Islamic vs. conventional), changing the investigation approach of the phenomenon through the lens of integration. Notably, this study does not intend to determine the best portfolio asset allocation and

---

strategy to beat the market. Contrastingly, it returns to the question related to the possibility of including alternative stock instruments to increase diversification with hedging benefits, building asset allocations that perform well over time. In this regard, this paper also follows the literature strands founded on the GMA and All-Weather (AW) philosophy of Bridgewater (2012) into the strategic asset-allocation choice, combining them with a Risk Parity (RP) model (Qian 2005) as a good asset allocation selection criterion for these strategies. The remainder of this paper is organised as follows. Section 2 provides the methodology, focusing on the fundamentals of the GMA strategy, the AW, and the risk-parity heuristic approach. The optimisation problem of the risk parity is solved using the specifically designed MATLAB algorithm. Section 3 presents and de-bates the data, descriptive statistics, and empirical results of the portfolios. Finally, the main conclusions and further remarks are disclosed in Section 4. In doing so, this paper also follows literature strands founded on the DAMS and *All-Weather* philosophy into the strategic asset allocation choice combining them with a *Risk Parity* model (Qian, 2005) as a good asset allocation selection criterion for these strategies. Thus, this paper tests the performance of the *combined portfolio*, considering ten years' timespan covering different macroeconomic scenarios focusing on the 2020 Covid-19 shock, a stress test for the model. The remainder of this paper is organised as follows. Paragraph 2 provides the theoretical background and the methodology focusing on the fundamentals of the DAMS strategy and of the *All-Weather* philosophy, and the risk parity heuristic approach. The optimisation problem of the risk parity is solved using the MATLAB algorithm purpose-built. Paragraph 3 presents and debates data, descriptive statistics and empirical results of the portfolios. Finally, the main conclusions and further remarks are disclosed in paragraph 4.



## 4.2 Theoretical Background and Methodology

### 4.2.1 The All-Weather Philosophy and the DAMS strategy

*“What kind of investment portfolio would you hold that would perform well across all environments, be it a devaluation or something completely different?”* AW engineering is based on an approach in which asset returns are broken down into building blocks. This process lies in the Post-Modern Portfolio Theory (PMPT) literature. The strand of literature studying the Modern Portfolio Theory (MPT) considers asset allocation as the asset class combination based on expected returns, risks, and correlations. According to Lee (2011), the global financial crisis of 2008 demonstrated the weakness of typical portfolio strategies such as the mean-variance optimisation, 60/40, and MPT, which have problems with diversification and the underestimation of risk. Instead, in the PMPT proposed by AW (Bridgewater 2012), any total investment return can be split into its intrinsic components and analysed while considering the leading components of those individual parts. Thus, this return is a function of the return on cash (the risk-free position), the excess return of markets above the cash rate (the betas), and the alpha as the managerial skills in stock selection. In summary:

$$\textit{Investment return} = \textit{risk-free} + \textit{beta} + \textit{alpha}$$

Therefore, the AW philosophy is based on three other fundamental keys providing different interpretations of the investor’s mindset: the role of market expectations, the environmental biases, and the role of cash. First, AW considers markets that are breakable into several components. Markets move considering their intrinsic expectations and the shift in their price conditions. Thus, there is a relationship between market expectations and the definition of surprise. Clearly, the greater the gap, the larger the market expectations. Second, all asset classes have environmental biases. The idea of environmental bias is linked to the notion of asset correlation. Some assets perform well in



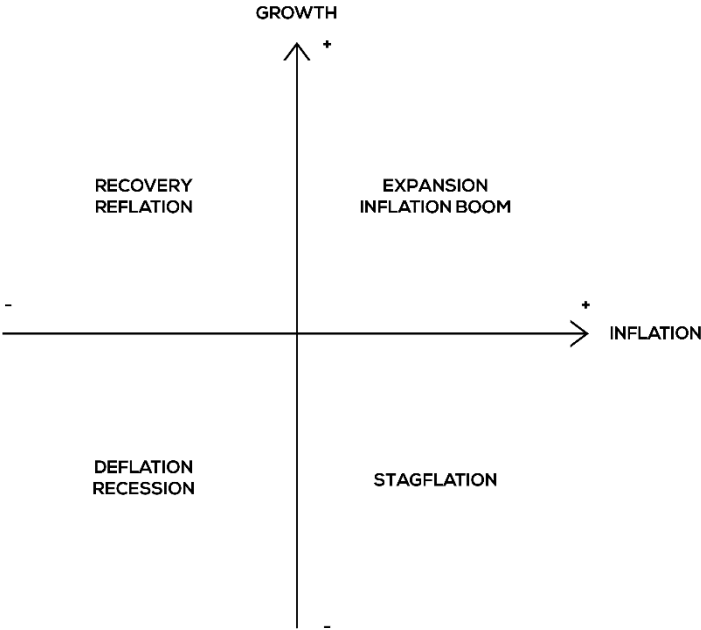
certain economic seasons and poorly in others. Asset-class pricing and performance will depend on market expectations, since they discount future economic scenarios.

Moreover, asset-class pricing will consider the role of cash. As previously mentioned, the return of cash represents the investors' risk-free position. The larger the investment risk, the larger the compensation investors require (risk premium). As a result, investment return depends on the return of any constituent asset. It considers the changes in the risk premium and the unpredictable alterations in the economic cycle (environmental biases). The economic cycle typically depends on the volume of economic activity (growth) and its pricing (inflation). The asset-allocation mix will depend on the investor sentiment of the future condition of higher/lower inflation growth (market expectations). Figure 1 below summarises the fundamentals of the AW strategy. The result is that asset allocation will capture the four risk exposures, mitigating the risk through the differences in environmental correlation between asset classes (Figure 1). Thus, following the investment return formula, in the long term, investment choices must consider assets that should provide a return above cash (risk-free). Pola (2013) introduced the GMA strategy with the same fundamentals, considering that asset re-turns are mainly affected by changes in macroeconomic and stress factor expectations. "Stocks move not due to low or high growth but mainly due to the fact that growth is above or below expectations".

The GMA strategy supports the mean-variance framework criticisms related to significant input parameter errors and the lack of diversification characterising the 60/40 (equity/bond) portfolio. The 60/40 portfolio is designed for disinflation and rising growth scenarios with a high concentration of equity risk. On the contrary, the GMA aims to build portfolios that limit exposure to unexpected macroeconomic environments, and considers and manages unfavourable inflation scenarios (Pola 2021). GMA considers the core and hidden drivers of asset return as the volume of economic activity (growth), pricing (inflation), and potential market stress. Pola (2013) established the relationship between asset sensitivity and factor dynamics using a polarisation coefficient. Each single asset class

shows different behaviour to the inflation/growth scenario. Table 4.1 summarises the inflation–growth polarisation results, reporting the relationship between the asset classes and the different macroeconomic conditions.

**Figure 4.1 Quadrant of the Macroeconomic Scenario**



Source: authors' elaboration

**Table 4.1 Inflation-growth polarisation plan main findings**

Macroeconomic Conditions			
	Growth	Inflation	Market Stress
<b>Trend</b>		Commodities	
	<b>Rising</b>	Commodities	Commodities
		Emerging Debt in Local Currency	Emerging Debt in Local
		Equities	Nominal Bonds
			Corporate IG Bonds
		Gold	Gold
		Inflation-linked Bonds	
<b>Falling</b>	Nominal Bonds Gold	Nominal Bonds	Corporate HY Bonds
		Corporate IG Bonds	Commodities



Source: authors' compilation based on Pola and Facchinato (2014).

#### 4.2.1 The Risk-parity model and the Optimisation Problem

According to Allen (2010), traditional portfolio strategies, founded on the mean-variance optimisation, are based on a 60/40 asset allocation, in which stocks explain approximately 70%/90% of the total risk contribution, resulting in an excessive concentration of a subset of assets. The portfolio results are well diversified from the weight perspective, but not regarding the volatility of stocks and bonds. In addition, the mean-variance approach seems to be too sensitive to its input parameters, with significant differences in small changes (Maillard et al. 2010). The literature describes this phenomenon as the concept of all eggs in one basket, since the 60/40 portfolio does not offer proper risk diversification. There is much confusion between the concept of volatility optimisation and risk diversification. Most of the contributions apply the same approach to minimise portfolio volatility, and target an expected return. The PMPT attempts to bypass the optimisation methods, preferring heuristic-solution-based risk distribution (Allen 2010; Anderson et al. 2012; Bruder and Roncalli 2012; Choueifaty and Coignard 2008; Foresti and Rush 2010; Levell 2010; Lohre et al. 2012; Maillard et al. 2010; Meucci 2007, 2009). This kind of approach is conceived to create (potentially) higher long-term profits by accepting the tolerance of higher risk (therefore, it is not only about minimizing the volatility) (Bruder and Roncalli 2012; Qian 2005). Following the risk parity in Equal Risk Contribution (ERC), the asset allocation does not consider any re-turns in the weight distribution but the risk contribution of a single component as the marginal risk

contribution (MRC). It is the share of the total portfolio risk contribution (TRC) associated with that specific component. According to Bruder and Roncalli (2012) and Maillard et al. (2010), we considered a portfolio  $X = (x_1; x_2; \dots; x_n)$  of  $n$  risky assets, assuming no possibility of leverage or short selling. The portfolio standard deviation is as follows:

$$\sigma_p(x) = \sqrt{x^T \Omega x} = \sqrt{\sum_i x_i^2 \sigma_i^2 + \sum_i \sum_{i \neq j} x_i x_j \sigma_{ij}} \quad (1)$$

where  $\sigma_{ij}$  is the covariance between asset  $i$  and  $j$  and  $\Omega$  is the covariance matrix.

The  $MRC_i(x) = \frac{(\Omega x)_i}{\sqrt{x^T \Omega x}}$  and the  $TRC_i(x) = x_i \frac{(\Omega x)_i}{\sqrt{x^T \Omega x}}$ , so it is easy to show that the risk of the portfolio can be explained as the sum of the TRC since

$$\sum_{i=1}^n TRC_i(x) = \sum_{i=1}^n x_i \frac{(\Omega x)_i}{\sqrt{x^T \Omega x}} = \sqrt{x^T \Omega x} = \sigma_p(x) \quad (2)$$

As previously mentioned, the ERC fundamentals aim to build a risk-balanced portfolio considering the asset allocation in terms of risk contribution rather than in terms of portfolio weights (risk budgeting). Thus, we considered a risk budget,  $b$ , and the vector of risk in the percentage of the total risk,  $b = (b_1, b_2, \dots, b_n)$ , where  $b_i = b_j = 1/n$ , the  $TRC_i(x) = TRC_j(x)$ , and the  $x_i \frac{(\Omega x)_i}{\sqrt{x^T \Omega x}} = x_j \frac{(\Omega x)_j}{\sqrt{x^T \Omega x}}$ , so it is easy to show that:

$$\sum_{i=1}^n TRC_i(x) = n TRC_i(x) \quad (3)$$

where the  $TRC_i(x) = \frac{\sigma(x)}{n}$ . Finally, the risk parity can be formulated as the following optimisation problem:

$$X = \arg \min f(x) \quad (4)$$

$$f(x) = \sum_{i=1}^n \sum_{j=1}^n [TRC_i(x) - TRC_j(x)]^2 = \sum_{i=1}^n \sum_{j=1}^n [x_i (\Omega x)_i - x_j (\Omega x)_j]^2, \quad (5)$$

$$\sum_{i=1}^n x_i = 1, \sum_{j=1}^n x_j, \text{ and } x \geq 0$$

The optimisation problem can be solved using the MATLAB Optimization Toolbox™, which provides functions for finding parameters that minimise or maximise objectives, while satisfying constraints. Notably, the sequential quadratic programming (SQP) demonstrates a solution to nonlinear programming (NLP), generating iterations to solve the optimisation problem by settling a sequence of SQP and approximating the exact solution. The toolbox also includes solvers for NLP, such as the solver-based nonlinear optimization, which finds the minimum constrained nonlinear multivariable function to discuss the existence and uniqueness of the risk parity portfolio. Constrained optimisation aims to convert the problem into an easier subproblem using an iterative process that provides stochastic approximation in generating possible solutions. Specifically, this algorithm uses a heuristic method, since it is used to find acceptable answers not differing too much from the exact solution. The *fmincon* functions of MATLAB provide an SQP-based nonlinear programming solver, finding the minimum of a constrained nonlinear multivariable function of a problem specified by Byrd et al. (2000) and Waltz et al. (2006):

$$\min_x f(x) \text{ such that } \begin{cases} c(x) \leq 0 \\ ceq(x) = 0 \\ A \cdot x \leq b \\ Aeq \cdot x = beq \\ lb \leq x \leq ub, \end{cases}$$

- $b$  and  $beq$  are vectors,  $A$  and  $Aeq$  are matrices,  $c(x)$  and  $ceq(x)$  are functions that return vectors, and  $f(x)$  is a function that returns a scalar.  $f(x)$ ,  $c(x)$ , and  $ceq(x)$  can be nonlinear functions.
- $x$ ,  $lb$ , and  $ub$  can be passed as vectors or matrices.

Mainly, the Optimization Toolbox™ solvers accept vectors for many arguments ( $x_0$  as initial point, lower bounds  $lb$ , and upper bounds  $ub$ ) and matrices, where the matrix is an array of any size. Solvers handle matrix arguments as follows:

- Internally, solvers convert matrix arguments into vectors before processing. For example,  $x0$  becomes  $x0(:)$ ;
- For output, solvers reshape the solution,  $x$ , to the same size as the input,  $x0$ ;
- When  $x0$  is a matrix, solvers pass  $x$  as a matrix of the same size as  $x0$  to both the objective function and to any nonlinear constraint function;
- Linear constraints, however, take  $x$  in vector form,  $x(:)$ . In other words, a linear constraint of the form:

$A*x \leq b$  or  $Aeq*x = beq$ , takes  $x$  as a vector, not a matrix (MathWorks Inc. 2021).

Thus, recalling Equation (4), the appropriate syntax for the risk-parity optimisation problem's solution is as follows:

$$x = fmincon (fun,x0,A,b,Aeq,beq,lb,ub) \quad (7)$$

which defines a set of lower and upper bounds on the design variables in  $x$ , so that the solution is always in the range  $lb \leq x \leq ub$  (Giuzio 2017; Mussafi and Ismail 2021). By default, the *fmincon* function solves the interior-point algorithm approach to constrained minimisation problems. Following, the RP optimisation problem is solved by computing MATLAB *fmincon*. First, Function (1) was designed to solve the optimisation problem in Equation (4). Function (1) represents the MATLAB function computed to solve the optimisation problem showed in Equation (4):

$$fun = @ \{(EW\_Shares) Aeq * (((VarCovar (:,:,i) * (EW\_Shares))/(sqrt ((EW\_Shares') * VarCovar (:,:,1) * EW\_Shares))) .* EW\_Shares - (sqrt ((EW\_Shares') * VarCovar (:,:,1) * EW\_Shares ))/nc).^2\}$$

where *VarCovar* is the variance–covariance matrix, and *nc* is the number of the asset classes composing the portfolio. Second, the *fmincon* was applied to Function (1) to solve the optimisation problem, writing a string to find the RP portfolio weights. (To improve the computing, we set the optimisation algorithm, changing the termination tolerance of the

function value (set as  $1 \times 10^{-6}$ ) and setting the maximum number of function evaluations, a positive integer, as 500,000.).

$RPShares(:,i) = fmincon(fun, EW\_Shares, [], [], Aeq, beq, lb, ub, [], options)$

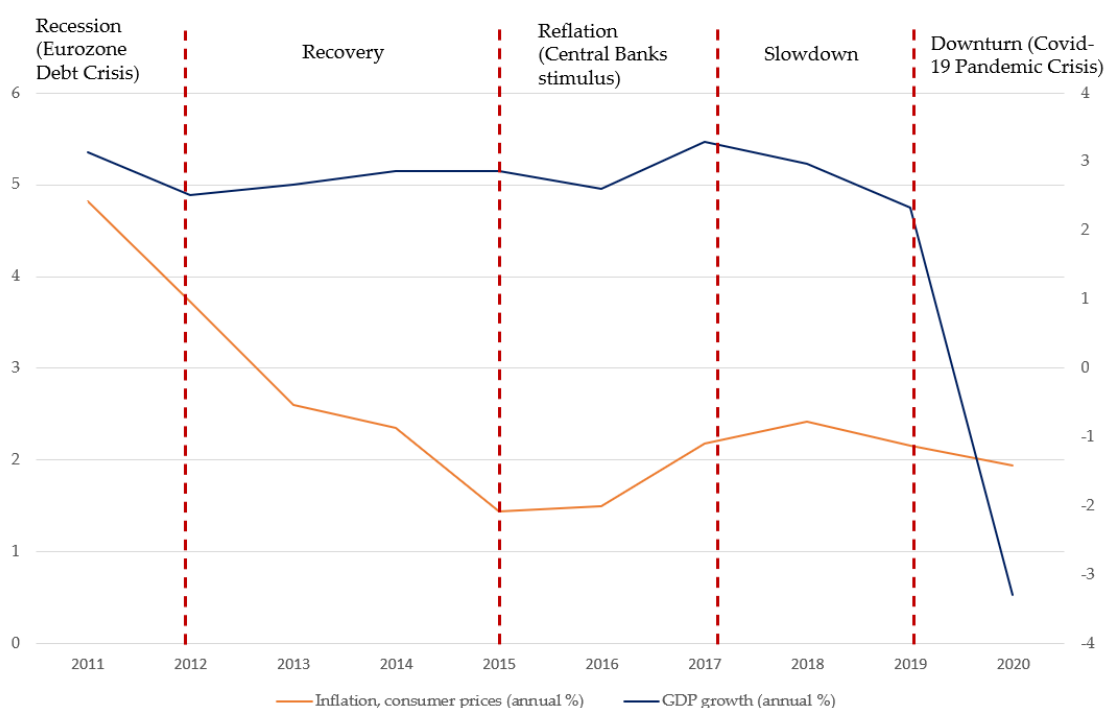
Finally, to improve the optimisation problem's solution, we set the maximum function evaluations to 500,000 and set the optimality tolerance to  $1.e-06$   $1 \times 10^{-6}$ .

## 4.2.2 Data and Sample Selection

As previously mentioned, the sample selection was designed following the GMA and the AW strategy to identify an asset allocation that may perform across all different economic macroscenarios. Notably, since major global indexes are quoted in USD, we also considered the geographical and currency exposure suitable for Europe-an-based investors, adding a EUR (Euro)-based bond component. Thus, following Figure 1 and Table 1, the asset allocation was designed while assuming the equal probability that each of the four scenarios occurs over time (25% of the investor's risk premium). However, to facilitate the operation of the risk-parity model, we chose not to consider both assets affected by too much and too little volatility, respectively, as commodities and cash. Thus, each asset class is included in the portfolio designed, considering its specific role to react differently when the economic environment varies. Considering the possibility for investors to use index-tracking instruments, the conventional asset allocation includes 10 indexes with 506 weekly observations (505 weekly returns) from 29 April 2011 to 31 December 2020 (9.7 years), extracted from Reuters Refinitiv Eikon. According to the strategy, the data span covers different macroeconomic cycles, including crisis and postcrisis periods, deflation, and economic growth, including COVID-19 pandemic market shock. Figure 2 summarises different global business cycles corresponding to the different levels of inflation and annual GDP growth. For the second stage of the analysis, we added four stock indexes to the

Combined Portfolio corresponding to the Shariah-compliant counterparts previously selected. A Bloomberg Terminal was used to extract Shariah stock index time series. Table 2 summarises each macroasset class and the corresponding index selected for the asset allocation.

**Figure 4.2 Business Cycles 2011-2020**



Source: authors' elaboration base on World Bank Data

**Table 4.2 Sample composition**

Macro Asset Class	Index	Code
<i>Equities</i>	S&P500 Index – CBOE	SP500
	MSCI World Price Index USD	MSCIW
	MSCI Emerging Markets Price Index USD	MSCIEM
	MSCI AC Asia-Pacific Price Index USD	MSCIAP
<i>Islamic Equities</i>	S&P 500 Shariah Index	SPS500
	MSCI World Islamic Index	MSCIWI
	MSCI Emerging Market Islamic Index	MSCIEMI
	MSCI AC Asia-Pacific Islamic Index	MSCIAPI



**169 Make the Best from Comparing conventional and Islamic Asset Classes. A Design of an All-Seasons Combined Portfolio**

<i>Short Term Nominal Bonds</i>	ICE BofA US 1-3 Year US Treasury Index	USTREAS
<i>All Maturity Nominal Bonds</i>		
<i>Government Bonds</i>	Markit IBoxx EUR Eurozone Index	EUROGOV
<i>Corporate Bonds</i>	IBoxx EUR Corporate Index	EUROCORP
<i>Inflation-Linked Bonds</i>	IBoxx Euro Inflation-Linked Index	EUROIL
<i>Convertible Bonds</i>	Refinitiv Qualified Global Convertible Index	CONVBOND
<i>Gold</i>	COMEX Gold Composite Commodity Future Continuation 1	GOLD

Source: authors' compilation

## 4.3 Empirical Results

### 4.3.1 Descriptive Statistics and correlation analysis

Table 3 summarises the descriptive statistics of the weekly asset returns. The correlations between the asset returns (Table 4) confirm the financial trend of recent years: for more than 20 years, stocks and bonds were negatively correlated, and precious metals, such as gold, played the role of a safe-haven asset, being negatively correlated with stocks and neutral to bonds. After the GFC and the sovereign debt crisis in Europe, the global central banks began to launch accommodative monetary policies to stimulate the global economy and achieve long-term economic growth. However, according to the literature in this field, the negative stock–bond correlation seems to be related to low and stable risk-free interest rates and inflation, and the comovement between economic growth and rates, equity risk premiums and bond risk premiums. Changes in macroeconomic conditions may modify the stock–bond correlation from negative/neutral to positive, as occurred after the second wave of COVID-19 when inflation and interest rate growth expectations began to develop (Anderson et al. 2012; Shen and Weisberger 2021; Yang et al. 2009). Similarly, precious

metals such as gold have always been considered by investors as safe-haven assets, since they are not correlated with stocks and bonds, contributing to portfolio-diversification benefits and the downside risk reduction (Baur and Lucey 2010; Baur and McDermott 2010; Reboredo 2013). During market distress and recession, investors tend to move to safe-haven assets such as gold and cash (as the US dollar). As for the stock and bond market, gold evaluation has also changed fundamentals. While economic stimulus measures in recent years have supported economic growth, regional and global economic and political issues have retained the background of a climate of uncertainty, which explains the lack of correlation with other assets.

**Table 4.3 Descriptive statistics of asset returns**

	Mean (%)	Std.Dev. (%)	Kurt	Skew	Sharpe	Min	Max	JB (p-Value) (%)	Weekly Returns	Weekly Obs.
SP500	12.51	16.39	7.87	-0.74	0.76	-0.15	0.12	0.00	505	506
MSCIW	8.45	16.07	7.23	-0.70	0.53	-0.12	0.11	0.00	505	506
MSCIEM	2.41	18.15	3.06	-0.39	0.13	-0.12	0.10	0.00	505	506
MSCIAP	5.03	15.43	4.49	-0.42	0.33	-0.13	0.09	0.00	505	506
CONVBOND	8.24	9.23	7.38	-0.97	0.89	-0.09	0.06	0.00	505	506
USTREAS	1.31	0.81	12.06	1.85	1.61	0.00	0.01	0.00	505	506
EUROIL	3.87	5.77	18.22	0.47	0.67	-0.05	0.07	0.00	505	506
EUROGOV	4.98	4.17	9.43	-0.70	1.19	-0.04	0.04	0.00	505	506
GOLD	3.67	16.07	1.58	-0.04	0.23	-0.09	0.09	0.00	505	506
EUROCORP	3.97	3.17	16.62	-2.04	1.25	-0.03	0.02	0.00	505	506
MSCIWI	5.53	16.05	7.32	-0.87	0.34	-0.15	0.11	0.00	505	506
SPS500	13.29	16.28	7.12	-0.77	0.82	-0.15	0.11	0.00	505	506
MSCIEMI	1.18	18.37	2.84	-0.38	0.06	-0.12	0.11	0.00	505	506
MSCIAPI	4.69	15.59	4.32	-0.50	0.30	-0.13	0.09	0.00	505	506

Notes: This table provides sample moments, Sharpe ratios, and minimum and maximum statistics of all asset classes used in the asset allocation. The evaluation period covered 506 weeks, from 29 April 2011 to 31 December 2020 (505 weekly returns). “Mean” denotes annualised time-series mean of weekly returns, while “Std.Dev.” is the associated annualised standards deviation. “Skew” and “Kurt” represent the third and fourth moments, respectively, of the return distribution. “Sharpe” denotes the annualised Sharpe ratios of the respective asset classes, considering 0.125% as risk-free according to EU zero interest rates policy in recent years. “JB (p-value)” is the p-value of the Jarque–Bera sta-tistic for testing the normality of returns.

**Table 4.4 Correlation matrix of asset returns (April 2011 – December 2020)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
SP500	1.00													
MSCIW	0.97 **	1.00												
MSCIEM	0.70 **	0.79 **	1.00											
MSCIAP	0.73 **	0.84 **	0.91 **	1.00										
CONVBOND	0.15 **	0.17 **	0.23	0.24	1.00									
USTREAS	-0.08	-0.11 *	-0.12 **	-0.16 **	-0.22	1.00								
EUROIL	0.09	0.09 *	0.06	0.09	0.38 **	0.02	1.00							
EUROGOV	0.09 *	0.07	0.02	0.02	0.09	0.28	0.76 **	1.00						
GOLD	0.01	-0.03	-0.02	-0.07	0.18	0.33	0.13 **	0.17 **	1.00					
EURCORP	0.03	-0.01	0.03 *	0.00	0.37 **	0.06	0.51 **	0.52 **	0.21	1.00				
MSCIWI	0.93 **	0.98	0.80 **	0.83 **	0.15 **	-0.10 *	0.08	0.07	-0.03	-0.02	1.00			
SPS500	0.99	0.95 **	0.70 **	0.72 **	0.15 **	-0.05	0.09 *	0.11 *	0.03 *	0.0 *	0.92 **	1.00		
MSCIEMI	0.70 **	0.78 **	0.98	0.89 **	0.22	-0.10 *	0.05	0.01	-0.01	0.04 *	0.80 **	0.70 **	1.00	
MSCIAPI	0.73 **	0.83 **	0.90 **	0.98	0.24	-0.15 **	0.09	0.03	-0.07	0.01	0.84 **	0.72 **	0.90 **	1.00

Notes: This table provides the correlation matrix for all asset classes used in asset allocation from 29 April 2011 to 31 December 2020. \* and \*\* indicate values significantly different from 0 at the 1% and 5% level, respectively.

### 4.3.2 Conventional Portfolio ERC Optimisation

The portfolio optimisation process began by considering the Conventional Portfolios. As mentioned in previous paragraphs, the asset selection considered the AW and the GMA strategy, including equities, bonds, and gold, for a total of 10 asset classes. The first observation period considered all available data (506 weeks). We created a rolling time window with an in-sample period of 244 weeks (29 April 2011 to 31 December 2015) and an out-of-sample period of 262 weeks (1 January 2016 to 31 December 2020). As mentioned before, to implement the strategy objectively, we applied the ERC risk-parity model starting from an equally weighted (EW) portfolio, which was the function objective, comparable with the RP. The EW is an investors' basis asset allocation applied in MATLAB *fmincon* (Function (1)). To consider the weaknesses and benefits of the ERC approach, Table 5 and Figure 3 report and chart the most relevant statistics, risk-adjusted indicators, and the performance of the Conventional Portfolios in the first out-of-sample windows ( $w = 262$ ).

The second observation period considered the last five years of available data, which, in frequencies, corresponded to 260 weekly data. The rolling window consisted of an

in-sample period of 130 weeks (1 January 2016 to 15 June 2018) and an out-of-sample of 132 weeks (16 June 2018 to 31 December 2020). We reported different rolling windows to show the differences in ERC optimisation by varying the in-sample data, since the rolling window approach was very sensitive to input data changes (Zivot and Wang 2006). This rolling window focused on the effects of the slowdown and downturn macroeconomic scenarios that characterised the last five years.

The optimisation problem of ERC was solved by applying Function (1). As seen in Table 5 and Figure 4, we noted that, in the second out-of-sample window ( $w = 132$ ), a smaller number of observations finely caught the asset class volatility, but neglected performance in the long term. According to the GMA, different asset classes (with specific diversification power) in the portfolio asset allocation protected the portfolio against any macroeconomic and market shocks. In addition, the RP asset allocation confirmed this trend by recording a low level of volatility and downside volatility, maintaining proper annualised returns and reducing the maximum drawdown (MDD) in both out-of-sample windows. Table 6 confirms that in both rolling windows, the ERC approach allocated only 23.14% to 34.68% and 11.97% to 35.28 of the total portfolio amount into higher volatility instruments, such as equity convertible bonds (which recorded a max of 12.67% and 12.96%). The MRCs in Table 7 confirmed this trend. In-deed, considering the period selected (characterised by a long period of economic growth, monetary stimulus, and low inflation), the asset allocation took risk benefits from the high component of nominal bonds, convertible bonds, and gold. These asset classes have been positively correlated for years and helped the portfolio's resilience during the pandemic shock of 2020, a good stress test for the model. The RP model tended to allocate a lower weight to high-volatility instruments (at the expense of stocks, which are the best return generator in the long term). In this context, the RP exploited the positive return of fixed-income and hybrid instruments as convertible bonds. In particular, convertible bonds were confirmed as an asset class halfway between stocks and bonds, setting up a good instrument that performed across different

### 173 Make the Best from Comparing conventional and Islamic Asset Classes. A Design of an All-Seasons Combined Portfolio

market conditions. The level of volatility was lower than equities and higher than bonds, generating lower exposition to the portfolio interest rate sensitivity and duration (Table 7). It represented the optimal asset class to be used in those models (as the RP) more responsive to the portfolio volatility, contributing to low downside risk and MDD. The combination of RP and GMA seemed to fit well with designing a portfolio performing well across all environments. We used a global balanced mutual fund as a benchmark to improve the readability and ensure that results were realistic.

**Table 4.5 The performance of the Conventional Portfolios.**

	In-Sample w = 244–Out-of-Sample w = 262			In-Sample w = 130–Out-of-Sample w = 132		
	EW	RP	Benchmark Fund	EW	RP	Benchmark Fund
<b>Return (%)</b>	8.61	6.32	4.26	9.06	4.62	6.93
<b>Volatility (%)</b>	7.34	4.49	4.98	8.88	4.04	9.06
<b>Sharpe Ratio</b>	1.17	1.41	0.86	1.02	1.14	1.11
<b>Max Drawdown (%)</b>	-15.22	-9.41	-9.91	-15.22	-6.70	-9.91
<b>Calmar Ratio</b>	0.57	0.67	0.43	0.59	0.69	0.70
<b>Downside Risk</b>	4.41	4.37	4.84	4.21	4.39	4.39
<b>Sortino Ratio</b>	1.95	1.45	0.85	2.15	1.05	1.58

Notes: This table summarises the portfolio out-of-sample performance. “Return” denotes the annualised time-series cumulative return, while “Volatility” shows the associated annualised standard deviation, and “Sharpe Ratio” represents the annualised Sharpe ratio to measure risk-adjusted performance. The “Max Drawdown” (MDD) is the maximum observed loss from a peak to a portfolio trough before a new peak is attained. The “Calmar Ratio” is a risk-adjusted indicator that considers MDD as a risk-adjusted risk indicator. Similarly, the “Downside Risk” was estimated, annualising the Lower Partial Moment of the time-series return to calculate the “Sortino Ratio” as another risk-adjusted indicator. “Benchmark Fund” is the Amundi Funds Global Multi-Asset Conservative E2 EUR (C), a global balanced mutual fund and winner of the Morningstar Fund Awards 2021. The cumulative return of the benchmark fund was calculated considering the weekly closing NAV. The ongoing charge of the fund (based on European UCITS IV) amounted to 1.40%. The benchmark fund was not added with a performance comparison purpose, but only to facilitate the reading of the results.

**Table 4.6 Asset marginal weight contribution to the Conventional Portfolios.**

	In-Sample w = 244–Out-of-Sample w = 262					In-Sample w = 130–Out-of-Sample w = 132				
	Min	Max	Mean	Median	Variance	Min	Max	Mean	Median	Variance
SP500	3.63%	6.21%	5.23%	5.49%	0.0055%	1.63%	6.12%	3.94%	4.60%	0.0253%
MSCIW	3.88%	5.74%	5.04%	5.14%	0.0024%	1.81%	6.03%	4.10%	4.72%	0.0234%
MSCIEM	3.91%	4.68%	4.32%	4.28%	0.0004%	2.31%	4.82%	3.83%	4.30%	0.0090%
MSCIAP	4.41%	5.38%	4.87%	4.86%	0.0003%	2.82%	5.35%	4.27%	4.73%	0.0083%
CONVBOND	7.30%	12.67%	10.89%	11.25%	0.0221%	3.40%	12.96%	8.79%	10.64%	0.1329%
High-Volatility Assets (Total)	23.14%	34.68%	30.36%	31.03%	0.0306%	11.97%	35.28%	24.94%	29.00%	0.1990%
USTREAS	13.25%	17.02%	14.17%	13.79%	0.0089%	12.78%	55.21%	25.73%	13.24%	3.4703%
EUROIL	12.41%	17.39%	14.92%	14.99%	0.0057%	6.12%	17.38%	13.25%	15.93%	0.2148%
EUROGOV	15.72%	18.83%	16.76%	16.56%	0.0074%	11.10%	18.35%	15.00%	16.02%	0.0517%
GOLD	7.07%	9.48%	7.66%	7.61%	0.0015%	4.40%	11.29%	7.13%	7.85%	0.0241%
EURCORP	14.97%	18.44%	16.13%	15.70%	0.0099%	10.55%	16.19%	13.93%	15.07%	0.0403%

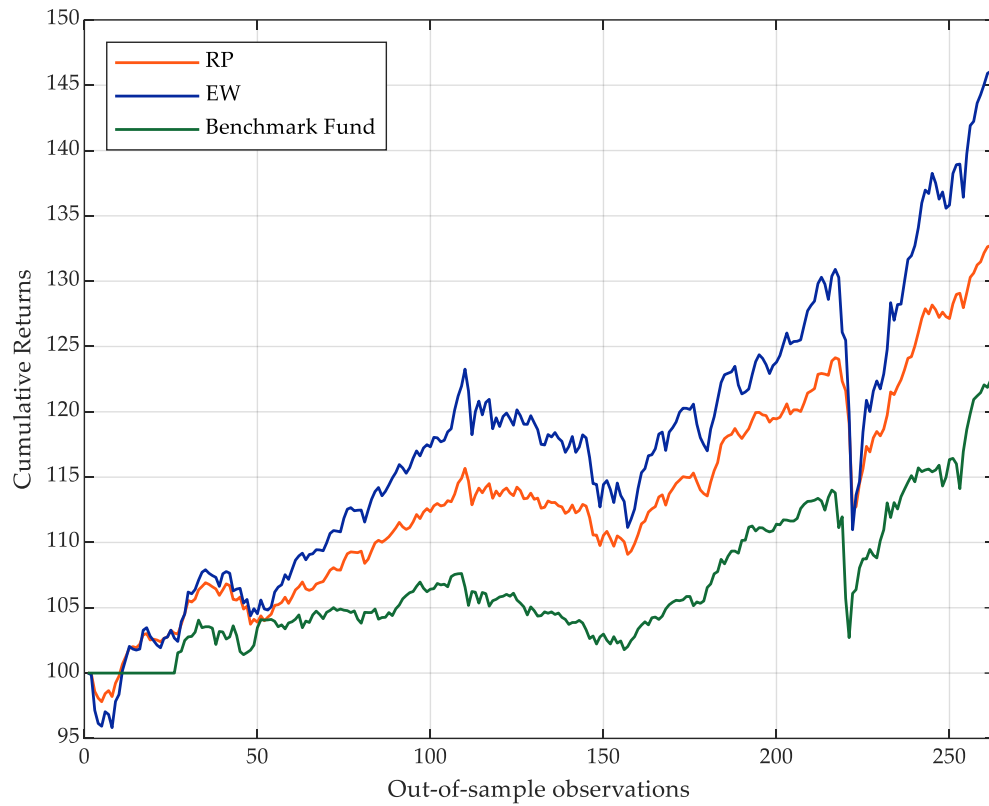
Note: this table summarises the asset weight contribution to the total portfolio resulting after the optimisation process.

**Table 4.7 Assets' marginal risk contributions (MRCs).**

	In-Sample w = 244–Out-of-Sample w = 262					In-Sample w = 130–Out-of-Sample w = 132				
	Min	Max	Mean	Median	Variance	Min	Max	Mean	Median	Variance
SP500	0.94%	2.57%	1.44%	1.31%	0.0025%	0.95%	4.68%	2.40%	1.61%	0.0206%
MSCIW	1.02%	2.53%	1.49%	1.33%	0.0022%	0.98%	4.53%	2.31%	1.52%	0.0188%
MSCIEM	1.43%	2.60%	1.83%	1.73%	0.0013%	1.41%	4.11%	2.37%	1.73%	0.0107%
MSCIAP	1.19%	2.34%	1.56%	1.49%	0.0011%	1.19%	3.75%	2.14%	1.53%	0.0097%
CONVBOND	0.23%	0.77%	0.36%	0.29%	0.0003%	0.27%	1.42%	0.68%	0.39%	0.0022%
High-Volatility Assets (Total)	4.80%	10.81%	6.68%	6.15%	0.01%	4.80%	18.49%	9.90%	6.78%	0.0620%
USTREAS	-0.02%	0.02%	0.01%	0.01%	0.0000%	-0.05%	0.01%	-0.01%	0.00%	0.0000%
EUROIL	0.08%	0.36%	0.16%	0.13%	0.0001%	0.09%	0.68%	0.28%	0.14%	0.0006%
EUROGOV	0.10%	0.26%	0.14%	0.13%	0.0000%	0.05%	0.40%	0.19%	0.13%	0.0002%
GOLD	0.25%	0.78%	0.56%	0.54%	0.0001%	0.00%	0.86%	0.58%	0.54%	0.0002%
EURCORP	0.05%	0.20%	0.08%	0.06%	0.0000%	0.03%	0.35%	0.13%	0.05%	0.0002%

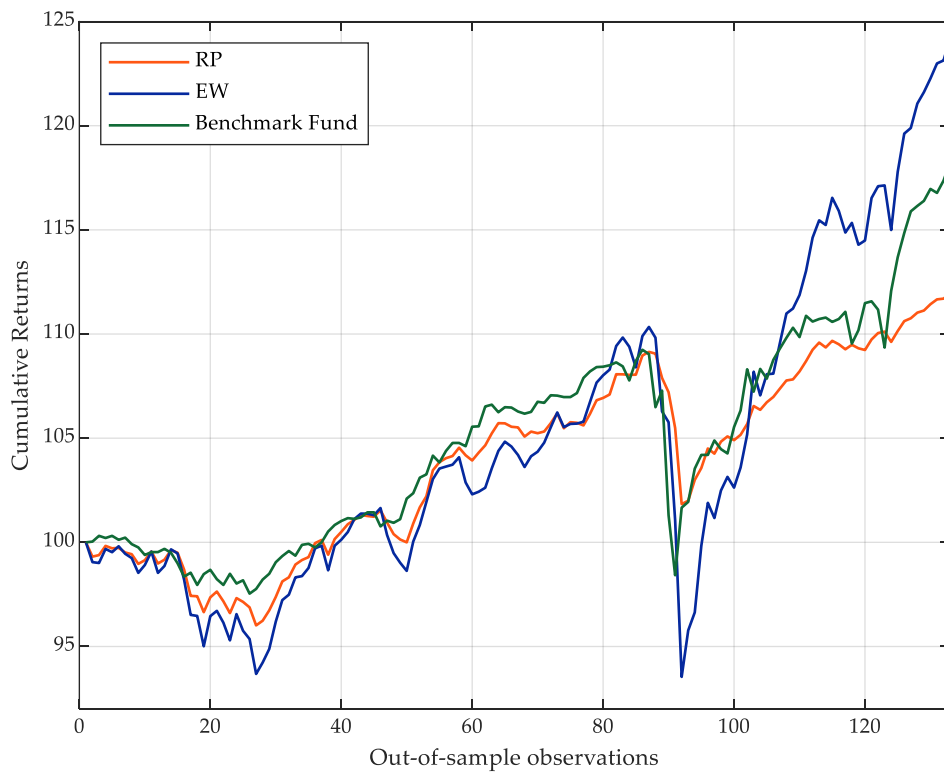
Note: this table summarises the assets' MRC to the total portfolio resulting after the optimisation process.

**Figure 4.3 Conventional Portfolios Returns (in-sample w=244; out-of-sample w=262)**



Source: authors' elaboration. Notes: to improve table clarity, returns are normalised on a scale of 100.

**Figure 4.4 Conventional Portfolios Returns (in-sample w=130; out-of-sample w=132)**



---

Source: authors' elaboration. Notes: to improve table clarity, returns are normalised on a scale of 100.

### 4.3.3 Combined Portfolio ERC Optimisation

In the second step, we focused on the Combined Portfolios. Following the aim to build and test the performance, diversification benefits, and decoupling effects, we added four Islamic stock indexes corresponding to the Shariah-compliant counterparts of equities components already in the portfolio (SPS500, MSCIWI, MSCIEMI, and MSCIAPI—Table 2) to the Conventional Portfolios. Then, the Combined Portfolios included 14 indexes. Again, the first observation period consisted of 506 weekly observations. The rolling time window relied on 244 weeks in-sample, and an out-of-sample period of 262 weeks. As previously described, we applied Function (1) used to solve the portfolio optimisation problem, reporting results and charting the cumulative out-of-sample returns into Table 8 and Figure 5. As expected, the performance of the Combined Portfolios was better than the conventional ones in both the EW and RP asset allocations due to the highest returns and volatility of the Islamic equities recorded in the period. Notably, the MDD and the Calmar Ratio recorded interesting results. First, regarding the Conventional Portfolios, the RP asset allocation confirmed that the ERC optimisation fundamentals reduced portfolio volatility (4.49% and 4.04%) and draw-down (−19.41 and −12.36). During periods of distress, the MRCs of high volatility assets were significant and larger than other asset classes, and generally, the RP model preferred low-volatility assets. Nevertheless, we noted that during these periods, the total weights of equities and convertible bonds amounted to 29.64–46.19% and 17.84–48.03%. Mainly, we highlighted that the minimum value of the first rolling window ( $w = 244$ ) was similar to that recorded in the conventional portfolio optimisation (23.14%) (Tables 9 and 10).

Although the EW asset allocation maintained the best performance, the power of Islamic equities arose in the RP model. Investors who add Islamic equities to asset allocation could improve their portfolio risk-adjusted performance whilst maintaining



moderate MDD levels. As for the Conventional Portfolios, we tested the ERC optimisation combining Islamic indexes considering 262 weekly observations to capture the differences in asset allocations considering shorter time series. As previously described, the rolling window consisted of an in-sample period of 130 weeks (out-of-sample of 132 weeks) and the ERC optimisation problem. Table 8 and Figure 6 report the results of the second period of observation. The addition of Islamic equities into asset allocations seemed to benefit the global portfolio performance positively. Finally, the Combined Portfolios continued to show healthy returns in risk-adjusted performance, despite slightly high volatility associated with the more significant presence of equities, especially Islamic equities. Necessarily, more equities increased the various MRCs, but during high periods of volatility (as in the March 2020 crash). Thus, the Combined Portfolios alternative, following a GMA and the RP, seemed to fit well with the need to de-sign asset allocations that were also suitable for risk-averse investors and to perform well across all environments.

**Table 4.8 The performance of the Combined Portfolios.**

	In-Sample w = 244–Out-of-Sample w = 262			In-Sample w = 130–Out-of-Sample w = 132		
	EW	RP	Benchmark Fund	EW	RP	Benchmark Fund
<b>Return (%)</b>	9.58	6.96	6.93	9.26	4.66	6.93
<b>Volatility (%)</b>	9.70	5.60	9.06	11.73	5.17	6.24
<b>Sharpe Ratio</b>	0.99	1.24	1.11	0.79	0.90	1.11
<b>Max Drawdown (%)</b>	-19.41	-12.36	-9.91	-19.41	-9.27	-9.91
<b>Calmar Ratio</b>	0.49	0.56	0.70	0.48	0.50	0.70
<b>Downside Risk</b>	4.57	4.34	4.39	4.53	4.35	4.39
<b>Sortino Ratio</b>	2.10	1.60	1.58	2.05	1.07	1.58

Note: see notes in Table 6.

**Table 4.9 Asset marginal weight contribution to the Combined Portfolios.**

	In-Sample w = 244–Out-of-Sample w = 262					In-Sample w = 130–Out-of-Sample w = 132				
	Min	Max	Mean	Median	Variance	Min	Max	Mean	Median	Variance
SP500	3.03%	4.58%	3.62%	3.45%	0.0020%	1.40%	4.95%	2.67%	2.77%	0.0083%
MSCIW	2.89%	4.29%	3.44%	3.28%	0.0019%	1.52%	4.92%	2.81%	3.01%	0.0072%
MSCIEM	2.38%	3.62%	2.99%	2.80%	0.0014%	2.02%	3.68%	2.70%	2.80%	0.0016%
MSCIAP	2.81%	4.17%	3.48%	3.32%	0.0017%	2.32%	4.10%	2.97%	3.05%	0.0017%

CONVBOND	7.51%	12.85%	10.54%	10.90%	0.0230%	3.43%	13.08%	8.06%	8.81%	0.1023%
MSCIWI	2.88%	4.26%	3.45%	3.34%	0.0019%	1.64%	4.82%	2.80%	2.84%	0.0061%
SPS500	2.92%	4.56%	3.62%	3.46%	0.0023%	1.43%	4.89%	2.62%	2.78%	0.0072%
MSCIEMI	2.39%	3.60%	2.96%	2.70%	0.0019%	1.94%	3.60%	2.53%	2.54%	0.0014%
MSCIAPI	2.84%	4.25%	3.47%	3.32%	0.0016%	2.14%	3.99%	2.73%	2.73%	0.0016%
High-Volatility Assets (Total)	29.64%	46.19%	37.57%	36.57%	0.0377%	17.84%	48.03%	29.88%	31.32%	0.1375%
USTREAS	9.44%	14.09%	12.19%	12.80%	0.0184%	9.89%	45.52%	21.91%	12.97%	0.20204%
EUROIL	12.08%	15.64%	14.05%	14.15%	0.0098%	6.25%	16.68%	12.69%	14.90%	0.1775%
EUROGOV	12.10%	16.50%	14.75%	15.18%	0.0186%	11.87%	17.14%	14.89%	15.00%	0.0224%
GOLD	5.90%	10.98%	7.55%	6.71%	0.0165%	5.68%	14.63%	6.93%	6.76%	0.0138%
EURCORP	10.85%	16.09%	13.89%	14.55%	0.0229%	11.08%	16.33%	13.69%	13.98%	0.0203%

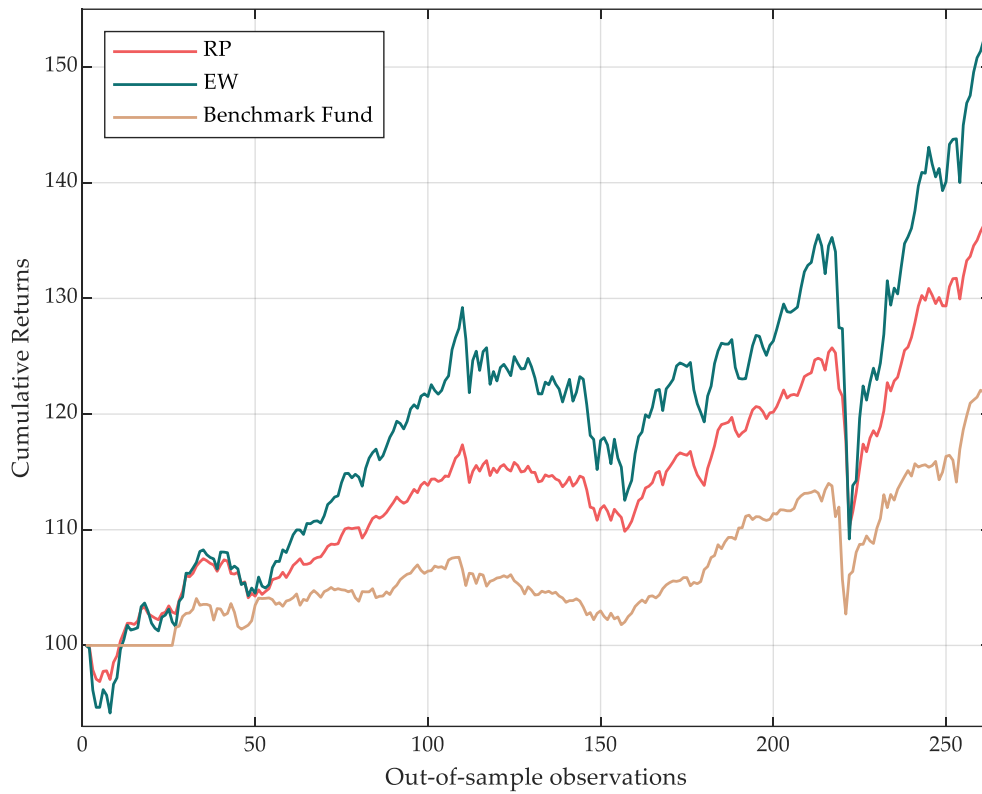
Note: see notes in Table 6.

**Table 4.10 Assets' marginal risk contributions (MRCs).**

	In-Sample w = 244–Out-of-Sample w = 262					In-Sample w = 130–Out-of-Sample w = 132				
	Min	Max	Mean	Median	Variance	Min	Max	Mean	Median	Variance
SP500	0.97%	2.63%	1.49%	1.37%	0.0026%	0.98%	4.86%	2.50%	1.71%	0.0220%
MSCIW	1.07%	2.62%	1.56%	1.39%	0.0023%	1.03%	4.75%	2.44%	1.63%	0.0205%
MSCIEM	1.51%	2.70%	1.92%	1.82%	0.0013%	1.52%	4.27%	2.51%	1.87%	0.0110%
MSCIAP	1.24%	2.45%	1.63%	1.55%	0.0013%	1.26%	3.96%	2.27%	1.63%	0.0108%
CONVBOND	0.17%	0.64%	0.28%	0.23%	0.0002%	0.19%	1.23%	0.56%	0.33%	0.0015%
MSCIWI	1.08%	2.56%	1.56%	1.41%	0.0021%	1.05%	4.61%	2.41%	1.66%	0.0186%
SPS500	1.00%	2.59%	1.51%	1.40%	0.0024%	1.02%	4.76%	2.51%	1.77%	0.0201%
MSCIEMI	1.49%	2.73%	1.93%	1.85%	0.0014%	1.52%	4.36%	2.59%	1.98%	0.0113%
MSCIAPI	1.18%	2.51%	1.62%	1.57%	0.0016%	1.29%	4.15%	2.39%	1.75%	0.0118%
High-Volatility Assets (Total)	9.73%	21.43%	13.49%	12.57%	0.0152%	9.87%	36.97%	20.17%	14.31%	0.1277%
USTREAS	-0.02%	0.01%	0.00%	0.01%	0.0000%	-0.06%	0.01%	-0.02%	0.00%	0.0000%
EUROIL	0.04%	0.28%	0.10%	0.07%	0.0001%	0.05%	0.54%	0.22%	0.09%	0.0004%
EUROGOV	0.05%	0.19%	0.10%	0.09%	0.0000%	0.01%	0.31%	0.14%	0.09%	0.0001%
GOLD	0.04%	0.47%	0.32%	0.31%	0.0000%	-0.21%	0.43%	0.32%	0.33%	0.0000%
EURCORP	0.05%	0.20%	0.08%	0.06%	0.0000%	0.03%	0.35%	0.13%	0.05%	0.0002%

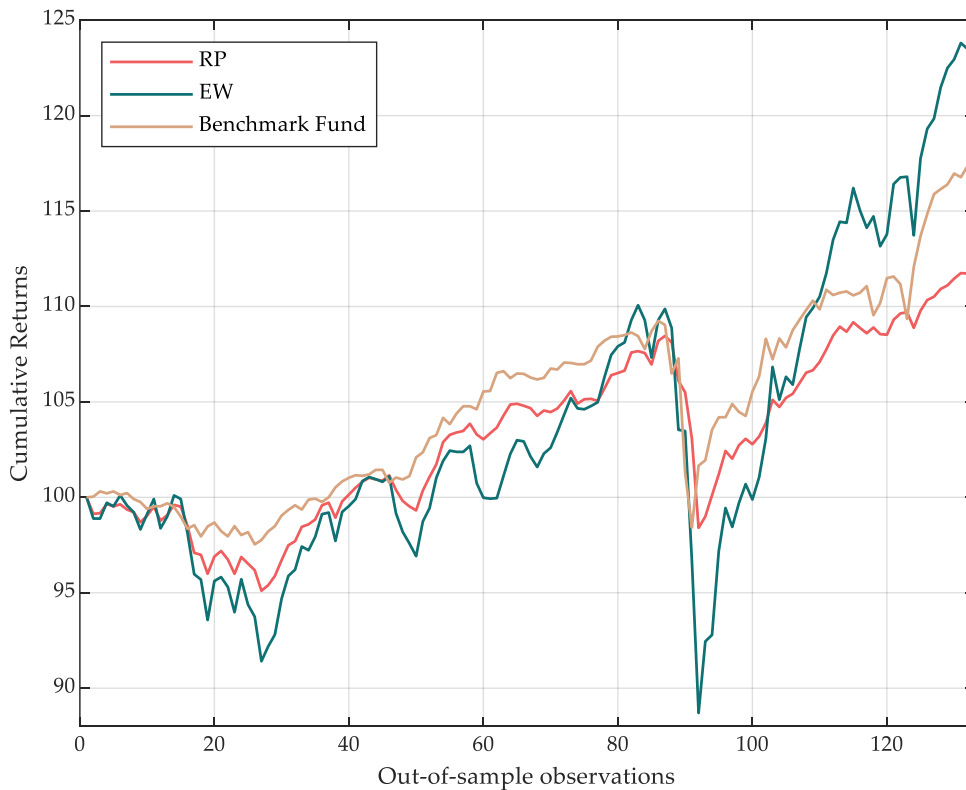
Note: see notes in Table 7.

Figure 4.5 Combined Portfolios Returns (in-sample w=244; out-of-sample w=262)



Source: authors' elaboration. Notes: to improve table clarity, returns are normalised on a scale of 100.

Figure 4.6 Combined Portfolios Returns (in-sample w=130; out-of-sample w=132)



---

Source: authors' elaboration. Notes: to improve table clarity, returns are normalised on a scale of 100.

## 4.4 Conclusions and further research

This study aimed to contribute to studies on portfolio-management and asset-allocation strategies, referring to the pursuit of safe-haven assets and to the need to design a portfolio “based on a fundamental understanding of the environmental sensitivities inherent in the pricing structure of asset classes”. The COVID-19 shock has increased the need to build portfolio strategies that fit all macroeconomic scenarios facing postcrisis economic and financial uncertainty, recalling the attention of global macrostrategies such as GMA. In this context, the COVID-19 shock has renewed the attention, on the one hand, on the diversification opportunities and potential hedging benefits offered by Islamic equities, and on the other hand, on the rejection of the hypothesis of the ISM from the conventional market, especially during high-volatility and uncertain periods. Although some scholars demonstrated that the Shariah screening process failed to provide immunity during a short crash affected by an internal demand shock, we decided to explore the possibility of combining the conventional and Shariah-compliant assets using the GMA strategy. The performances of the Combined Portfolios demonstrated the positive effects of combining the GMA strategy, the RP, and Islamic equities. The results also showed that these kinds of portfolios may be appropriate for risk-averse investors who are not interested in beating the market, but in rising stable returns with low volatility, minimising the downside risk and the maximum portfolio drawdown. The RP approach can also be adapted to more risk-taker investors using the leverage to maximise the return. Finally, global macrostrategies such as GMA recorded fewer returns than other, more aggressive strategies, especially in short periods. In these strategies, which considered that asset returns were mainly affected by macroeconomic and stress factors, asset allocation seemed immune to the short market crash. The Combined Portfolios represented a different choice in this context, especially for risk-averse and risk-inclined investors (such as young

investors). Further research in the portfolio-management industry could continue, separately and together with the behaviour and performance of this kind of strategy and the Combined Portfolios, to study single patterns with quantitative methods. Keeping in mind that it is impossible to forecast the next economic or financial shock, it might be better to include each specific asset class with a precise role to allow portfolios to perform across different seasons (macroeconomic scenarios).

## **References**

- Akhtaruzzaman, Md, Boubaker, S., Sensoy, A. (2021). "Financial contagion during COVID-19 crisis," *Finance Research Letters*, Elsevier, vol. 38(C).
- Allen, G. (2010). "The Risk Parity Approach to Asset Allocation.", Callan Investments Institute, Callan Associates
- Anderson, R.M., Bianchi, S.W., Goldberg, L.R. (2012). Will My Risk Parity Strategy Outperform?, *Financial Analysts Journal*, 68:6, 75-93, DOI: 10.2469/faj.v68.n6.7
- Arouri, M.E., Ben Ameer, H., Jawadi, N., Jawadi, F., Louhichi, W. (2013). Are Islamic finance innovations enough for investors to escape from a financial downturn? Further evidence from portfolio simulations. *Applied Economics*, 45, 3412-3420.
- Ashraf, D., Rizwan, M.S., Ahmad, G. (2020). Islamic Equity Investments and the COVID-19 Pandemic. Available at SSRN: <https://ssrn.com/abstract=3611898> or <http://dx.doi.org/10.2139/ssrn.3611898>
- Baur, D. and Lucey, B. (2010), Is Gold a Hedge or a Safe Haven? An Analysis of Stocks, Bonds and Gold, *The Financial Review*, 45, issue 2, p. 217-229.
- Baur, D. and McDermott, T. (2010). Is gold a safe haven? International evidence, *Journal of Banking & Finance*, 34, issue 8, p. 1886-1898.

- 
- Belouafi, A., Bourakba, C.A., Saci, K. (2015). Islamic Finance and Financial Stability: A Review of the Literature, *Journal of King Abdulaziz University: Islamic Economics*, Vol. 28, No. 2, 2015, Available at SSRN: <https://ssrn.com/abstract=3063842>
  - Borio, C. (2020). "The Covid-19 economic crisis: dangerously unique," *Business Economics*, Palgrave Macmillan; National Association for Business Economics, vol. 55(4), pages 181-190, October.
  - Bouri, E., Gupta, R., Vinh Vo, X. (2020). Jumps in Geopolitical Risk and the Cryptocurrency Market: The Singularity of Bitcoin, *Defence and Peace Economics*, DOI: 10.1080/10242694.2020.1848285
  - Bridgewater LP (2011), <https://www.bridgewater.com/research-and-insights/the-all-weather-story>
  - Bridgewater LP (2012), <https://www.bridgewater.com/research-and-insights/risk-parity-is-about-balance>
  - Bruder, B., Roncalli, T. (2012). Managing Risk Exposures Using the Risk Budgeting Approach. Available at SSRN: <https://ssrn.com/abstract=2009778> or <http://dx.doi.org/10.2139/ssrn.2009778>
  - Byrd, R.H., Gilbert, J.C., Nocedal, J., (2000). A trust region method based on interior point techniques for nonlinear programming. *Mathematical Programming* 89, 149–185.. doi:10.1007/pl00011391
  - Cheema, M.A., Faff, R.W., Szulczuk, K. (2020). The 2008 Global Financial Crisis and COVID-19 Pandemic: How Safe are the Safe Haven Assets?, Available at SSRN: <https://ssrn.com/abstract=3590015> or <http://dx.doi.org/10.2139/ssrn.3590015>
  - Choueifaty, Y., and Y. Coignard. (2008). "Toward Maximum Diversification."
  - Delle Foglie, A., and Panetta, I.C. (2020). Islamic stock market versus conventional: Are islamic investing a 'Safe Haven' for investors? A systematic literature review. *Pacific-basin Finance Journal*, 64, 101435.

### **183 Make the Best from Comparing conventional and Islamic Asset Classes. A Design of an All-Seasons Combined Portfolio**

---

- Foresti, S., and Rush, M. (2010). "Risk-Focused Diversification: Utilizing Leverage within Asset Allocation." Wilshire Consulting, 2010.
- Gharib, C., Mefteh-Wali, S., Jabeur, S.B. (2021). "The bubble contagion effect of COVID-19 outbreak: Evidence from crude oil and gold markets," *Finance Research Letters*, Elsevier, vol. 38(C).
- Giuzio, M., (2017). Genetic algorithm versus classical methods in sparse index tracking. *Decisions in Economics and Finance* 40, 243–256.. doi:10.1007/s10203-017-0191-y
- Haroon, O., Ali, M., Khan, A., Khattak M.A., Rizvi, S.A.R. (2021). Financial Market Risks during the COVID-19 Pandemic, *Emerging Markets Finance and Trade*, 57:8, 2407-2414, DOI: 10.1080/1540496X.2021.1873765
- Hasan, M.B., Mahi, M., Hassan, M.K., Bhuiyan, A.B. (2021). Impact of COVID-19 pandemic on stock markets: Conventional vs. Islamic indices using wavelet-based multi-timescales analysis. *The North American Journal of Economics and Finance* 58, 101504. doi:10.1016/j.najef.2021.101504
- Hassan, M.K., Aliyu, S., Paltrinieri, A., Khan, A. (2019), A Review of Islamic Investment Literature. *Econ Pap*, 38: 345-380. <https://doi.org/10.1111/1759-3441.12230>
- Hengchao, Z. and Hamid, Z. (2015). The Impact of Subprime Crisis on Asia-Pacific Islamic Stock Markets, *Journal of Asia-Pacific Business*, 16:2, 105-127, DOI: 10.1080/10599231.2015.1028304
- Jawadi, F., Jawadi, N., Louhichi, W. (2014). Conventional and Islamic stock price performance: An empirical investigation. *International Economics*, 137, 73-87.
- Ji, Q., Zhang, D., Zhao, Y. (2020). Searching for safe-haven assets during the COVID-19 pandemic. *International Review of Financial Analysis*, 71, 101526. <https://doi.org/10.1016/j.irfa.2020.101526>
- Kristoufek, L. (2020). Grandpa, grandpa, tell me the one about Bitcoin being a safe haven: Evidence from the COVID-19 pandemics. arXiv preprint arXiv:2004.00047.

- 
- Levell, C. (2010). "Risk Parity: In the Spotlight after 50 Years.", General Research, NEPC, 2010.
  - Lohre, H., Neugebauer, U., Zimmer, C. (2012). Diversified Risk Parity Strategies for Equity Portfolio Selection. *Journal of Investing*, 2012, Vol. 21(3), pp. 111-128, Available at SSRN: <https://ssrn.com/abstract=2049280> or <http://dx.doi.org/10.2139/ssrn.2049280>
  - M. E. Aroui, H. Ben Ameer, N. Jawadi, F. Jawadi & W. Louhichi (2013). Are Islamic finance innovations enough for investors to escape from a financial downturn? Further evidence from portfolio simulations, *Applied Economics*, 45:24, 3412-3420, DOI: 10.1080/00036846.2012.707776
  - Maillard, S., Roncalli T., Teiletche, J. (2010). The properties of equally weighted risk contribution portfolios. *The Journal of Portfolio Management*, 2010.
  - Masih, M., Kamil, N.K.M., Bacha, O.I. (2018). Issues in Islamic Equities: A Literature Survey, *Emerging Markets Finance and Trade*, 54:1, 1-26, DOI: 10.1080/1540496X.2016.1234370
  - Mazur, M., Dang, M., Vega, M. (2021). "COVID-19 and the march 2020 stock market crash. Evidence from S&P1500," *Finance Research Letters*, Elsevier, vol. 38(C).
  - Meucci A. (2007), Risk Contributions from Generic User-defined Factors, *Risk*, June, pp. 84-88
  - Meucci, A. (2009). "Managing Diversification." *Risk*, Vol. 22, No. 5, pp. 74-79.
  - Mussafi, M. and Ismail, Z. (2021). "Optimum Risk-Adjusted Islamic Stock Portfolio Using the Quadratic Programming Model: An Empirical Study in Indonesia". *Journal of Asian Finance, Economics and Business* Vol 8 No 5 (2021) 0839–0850. doi:10.13106/jafeb.2021.vol8.no5.0839
  - Paltrinieri, A., Hassan, M.K., Bahoo, S., & Khan, A. (2019). A bibliometric review of sukuk literature. *International Review of Economics & Finance*.
  - Pola, G. (2013). Managing uncertainty with dams. Assets' segmentation in response to macroeconomic changes, AMUNDI working-paper, 2013, AMUNDI Investment Strategy Collected Research Papers 2014



## **185 Make the Best from Comparing conventional and Islamic Asset Classes. A Design of an All-Seasons Combined Portfolio**

---

- Pola, G. and Facchinato, S. (2014). Managing uncertainty with DAMS: from Asset Segmentation to Portfolio Management, AMUNDI discussion-paper
- Pring, M. J. (1992). The all-season investor: Successful strategies for every stage in the business cycle. New York: Wiley.
- Qian E. (2005), Risk Parity Portfolios: Efficient Portfolios Through True Diversification, PanAgora Research Paper.
- Reboredo, J. (2013). Is gold a safe haven or a hedge for the US dollar? Implications for risk management. *Journal of Banking and Finance*, 37, 2665-2676.
- Salisu, A.A., Sikiru, A.A., Vo, X. (2020). Pandemics and the emerging stock markets. *Borsa Istanbul Review*, 20, S40 - S48.
- Sherif, M., (2020). "The impact of Coronavirus (COVID-19) outbreak on faith-based investments: An original analysis," *Journal of Behavioral and Experimental Finance*, Elsevier, vol. 28(C).
- The *Journal of Portfolio Management*, Vol. 35, No. 1 (2008), pp. 40-51.
- Topcu, M. and Gulal, O.S. (2020), The impact of COVID-19 on emerging stock markets, *Finance Research Letters*, 36, issue C, number S1544612320306966.
- Waltz, R. A., J. L. Morales, J. Nocedal, Orban D. (2006). "An interior algorithm for nonlinear optimization that combines line search and trust region steps." *Mathematical Programming*, Vol 107, No. 3, 2006, pp. 391-408.



## Chapter 5

# The impact of the Blockchain Technology on the Global Sukuk Industry: Smart Contracts and Asset Tokenisation

---

**Abstract:** This paper aims to investigate the Sukuk industry and Distributed Ledger Technologies (DLTs) applications exploring their fundamentals and criticisms to shed light on potential opportunities both for Sukuk issuances and for the securitisation industry. DLTs are characterised by intense competition and potential future disruption in the banking and finance industry for both conventional and IF arena and Sukuk industry representing a leading sector. Using a case-study analysis on some pioneers' Blockchain-based Smart Sukuk and tokenisation projects, we try to identify the potential streamlining of the inquiry and issuance process. This paper contributes to the literature on Sukuk and the use of DLTs matching the need demand and supply-side, highlighting new opportunities

---

for the Islamic Finance (IF) standardisation, considering the different interpretation of Shariah between countries making up a barrier to its growth. Therefore, the ShariahTech industry's outgrowth might contribute to developing new instruments as ancillary or alternative to conventional bonds providing new policy implications for regulatory authorities and stimulating the global market competition.

*“Everyone knew it was impossible until a fool who didn't know came along and did it”*

*Albert Einstein*

## 5.1 Introduction

The advance of technology and digitalisation of the financial sector (financial technology - Fintech or *techfin*) are rapidly changing the global economy and the international financial systems, including the Islamic Financial System (IFS). The digital transformation also involves Islamic Finance (IF), and in this regard, scholars have introduced “Islamic Fintech” to identify the “*Shariah Neutral*” fintech practices, which does not violate Islamic law (Alam et al., 2019). In this context, according to Moody's 2019, there is an increasingly strong demand for *Shariah-compliant* assets as Sukuk and blockchain-based instruments, since they also provide to conventional bond issuers to collect liquidity more easily in Islamic emerging markets. Notably, Sukuk issuances, representing the *Islamic debt securities* competing with conventional bond emissions, are driving the IFS representing the most suitable instruments for the technology implementations. Sukuk industry represents 22,3% of the global Islamic financial service industry, with a total

outstanding worth of USD 534 billion in 2019 (IFSI Stability Report, 2020). The DLT application into the IFS is relatively young. For instance, in 2017, Dubai-based blockchain fintech (Wethaq) issued its first pilot Sukuk on its securities market platform for Islamic capital markets, and in 2018 Al Hilal Bank in the United Arab Emirates became the world's first Islamic bank to execute a secondary Sukuk transaction via the Ethereum Blockchain. The first world's blockchain-based Sukuk issuance occurred in October 2019 through Indonesian microfinance cooperative BMT Bina Ummah (Reuters, 2020). On the demand side, the adoption of technologies in financial practices and new business models is essential to tackle global financial shocks and may represent an opportunity for the IFSs to break down its *socio-cultural* and regional barriers. Due to the digital revolution, this demand is now accelerated by the COVID-19 pandemic, representing the most significant shock to the financial system since the last global financial crisis in 2007-2008 (S&P Global, 2020). Pandemic has required to adopt several measures as movement restrictions and social distancing, which inevitably contribute to the employment of new technologies disrupting the traditional financial intermediation. After a year of recorded improvement in 2019, the IFS ecosystem is not immune to these changes and developments since the combining effect of the COVID-19 and the oil price crisis, as the oil market a strategic sector in emerging economies in which IF is a global leader (IFSB, 2020).

DLTs are leading the digital revolution redefining all the financial systems architecture and the concept of financial intermediation, inevitably affecting financial intermediaries and banks (Alam et al., 2019). They are often considered as the most powerful disruptors of the financial system: Gartner Inc. (2018) has previewed that, by 2030, 80% of the financial firms will disappear or “*achieve a zombie status*” since new companies, also called *fintech companies*, are changing the way to think, make and sell financial services. According to S&P Global 2020, technologies employment could also represent an opportunity for Islamic financial institutions to deal with the standardisation issue. Indeed, IFS suffers a competitive disadvantage than conventional peers. The lack of

---

standardisation in IF is a key long-lasting issue nourished by different interpretations of Shariah law, which often constitutes a barrier to the integration process with the conventional financial system and generates several numbers of inefficiencies. In line with the Islamic ethical underpinnings, the standardisation process could increase transparency, efficiency, and consistency to the IFS by decreasing the competitive disadvantage compared to the conventional. (Yacoob and Habdullah, 2012; Smolo and Habibovic, 2012). In this regard, Sukuk issuances have been limited to funding Islamic banks, governments, and large companies due to the high level of complexity, inquiry fees and time-consuming. Employing new technologies in the Islamic Fintech universe, Islamic financial institutions are developing new business models and sales channels, such as Sukuk blockchain-based (or Smart Sukuk), to face global competition solving the standardisation issues. Thus, the Sukuk tokenisation (a blockchain-based technology) represents a reversal on the financial circuit for the conventional debt issuances. There is a transition from the concrete to the abstract since the digital tokens convert an asset of known value, through an asset of uncertain value, to a new tokenised asset (Hargrave et al., 2018). In addition, previous contributions on this topic have a different size, but they are linked. While the literature on Sukuk is vast and extensive (Paltrinieri et al., 2020), fintech applications to IF are only recently explored, mainly referring to the application of Smart Contracts and Sukuk issuance tokenisation (Rabbani et al., 2020). As said before, IF assets as the Sukuk industry, present some issues related to the existing legal framework (*Sharia-compliance*), the high cost of financing, the complexity of inquiry processing, the lack of transparency and the lack of trading in the secondary market. According to Paltrinieri et al. (2020), the last literature review on Sukuk reveals some challenges that need to be considered to develop the Sukuk capital market. Notably, among the others, their literature review reports *i)* the essential role of Shariah scholars for IFS development since they identify the different level of interpretation of Shariah law across various jurisdictions, *ii)* the importance of Profit and Loss Sharing (PLS) system, since, until now Sukuk industry abused of debt-based

contractual facilities, *iii*) the need to analyse costs and benefits of Sukuk issuances and their impact on economic development of companies and jurisdictions. In this regard, new Islamic Fintech solutions pose many challenges and opportunities, providing the best practices to an inclusive standardisation of the IF practice and contributing to increasing the cost and process efficiency. In addition, its transparency attracts “unbanked” Muslim people and conventional investors, first in emerging markets and then on the global financial system. These concepts are included in the new *ShariahTech* universe (Rabbani et al., 2020).

In the light of the above, this paper aims to contribute to the debate on the DLT’s applications in resolving some Sukuk industry issues. In doing so, we firstly summarised the Sukuk theoretical framework, focusing intensely on sophisticated asset-based and asset-backed underpinnings and legal framework, and identifying the main criticism on the inquiry and issuance process. Secondly, we introduce main DLT features drawing on the Smart Contract use and asset tokenisation. Going deep into the theoretical background makes it possible to highlight some criticism in the Sukuk industry and some benefits of the DLTs, providing a table to match the demand supply-side. In this way, the proposed approach tries to provide food of thought to the researchers, practitioners and policymakers and contribute to previous literature research questions collecting significant evidence shreds helpful to actors involved. The paper results could be useful from the IF industry point of view and could also offer some implications for conventional securitisation criticisms highlighting the potential benefits of tokenisation practices.

## 5.2 Theoretical background

### 5.2.1 The Sukuk Industry

The Sukuk outstanding represents a more widespread strategic sector of the Islamic capital market than some others like the equity market, Islamic funds, or takaful. The first Sukuk issue dates back to 1988 when the Organization of Islamic Conference (OIC) approved the Sukuk structure to satisfy the Islamic market demand of an alternative way to finance their investments being compliant with the Shariah law (Zulkhibri, 2015). Sukuk (in Arabic, plural of *Sakk*) are *Shariah-compliant* “debt” certificates issued by companies and sovereign institutions, similar to conventional bond and because of that often called “*Islamic bond*”. However, they are wrongly placed together conventional bond. The Sukuk framework is based on the asset-backed rules of securitisation or conventional covered bonds, setting up a “*Shariah-based*” asset securitisation (Ibrahim, 2015). The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) officially defines Sukuk as “*Certificates of equal volume representing, after closing subscription, the receipt of the value of the certificates and putting it to use as planned, a common title in shares and rights of tangible assets, usufructs and services or equity of a given project or equity of a special investment activity*” (AAOIFI Standard 17). Sukuk must respect the Islamic law, which includes: the *ribah* (*usury*), as the prohibition to pay or receipt interests, and the *gharar* (*uncertainty*), as the need to associate an underlined real asset or business risk to any financial activities and transaction, as all *Shariah-compliant* instruments (Jobs et al. 2008). Thus, Sukuk structures cannot provide interest payments, free risk, explicit return, or guaranteed capital to protect the investors. In general, they include purchasing a debt certificate representing a share in the ownership of assets or businesses via an SPV (Special Purpose Vehicle), giving the owner all rights associated with the income related to the underlined asset. The profitability of any certificate is related to the performance of the



underlying, and the price depends on the *creditworthiness* of the issue and the asset market price (Godlewski et al., 2013).

The framework of Islamic bond emissions is strictly related to the underlying Islamic contracts. For instance: *asset-based* contracts as *Ijarah* (leasing) or *Murabahah* (sales with mark-up) are *Not-PLS* contracts, and *asset-backed* contracts as *Musharakah* (equity-participation) and *Mudarabah* (partnership) are *PLS* contracts (Alam et al. 2019). To provide a comprehensive view of the Sukuk industry, we analyse the theoretical background following a systematic approach and reporting some observation from literature contributions, which is relatively limited. As mentioned before, we report the last literature review by Paltrinieri et al. 2020, which used a bibliometric methodology to explore Sukuk literature from 1950 to 2018 using ISI Web of Science Database, confirming the limited number of articles (179) and highlighting some top influential topics: *i*) Sukuk capital market characteristics, *ii*) relationships, behaviours compared with conventional bonds, *iii*) motivation for firms to issue Sukuk as compared to conventional bonds, *iv*) the governing law clauses of Sukuk transitions and *v*) motivations for firms to cover their financial needs with Sukuk rather than conventional bonds (Godlewski et al. 2013; Aloui et al. 2015; Aloui et al. 2015a; Aloui et al. 2015b; Kenourgios et al. 2016; Maghyereh and Awartani, 2016; Ibrahim 2015; Mohamed et al. 2015; Azmat et al. 2014; Oseni and Hassan, 2015). On the other hand, Sukuk industry studies referring to the technology application is still relatively explored. Shaik and Zaka (2019) recently proposed the blockchain technology application to enhance credits' traceability to specific financed assets, as Islamic certificates. Besides, Khan et al. (2020) analyse Sukuk tokenisation basing on a case study.

### 5.2.2 DLTs, Blockchain and Smart Contracts in the Islamic Finance industry

*“A distributed ledger is essentially an asset database that can be shared across a network of multiple sites, geographies or institutions. All participants within the network can have their own identical copy of the ledger. Any changes to the ledger are reflected in all copies in minutes or seconds.”* (Walport, UK Government Chief Science Advisor, 2015). Blockchain is a type of a distributed ledger in which transactions are recorded and grouped in blocks with an immutable cryptographic signature (a hash). Every single block includes the previous one in a *chain* (R3, 2020). Thus, there is no central administrator since it is based on a safe peer-to-peer connection between participants linked by consensus algorithms. The consensus is the process of voting and agreement of each encrypted transaction that need the previous assessment of other computers on the network. This is necessary to build an independently distributed ledger (Underwood, 2016; Mohamed and Ali, 2019). Blockchain are classified into three categories depending on their application, reported in Table 5.1. Here and up, we specifically refer to the blockchain.

**Table 5.1 Main type of the blockchain**

Private Blockchain Permissioned	Public Blockchain Permissionless	Hybrid Blockchain Consortium
<ul style="list-style-type: none"> <li>• Closed platform</li> <li>• Access granted by central authority, owner and supervisor of the blocks</li> <li>• Useful for banks and financial intermediaries</li> <li>• Regulated</li> </ul>	<ul style="list-style-type: none"> <li>• Not centralised</li> <li>• Fully “Distributed” ownership</li> <li>• Operators generate consensus algorithm and mining</li> <li>• Unregulated</li> <li>• Es. Bitcoin or Ethereum</li> </ul>	<ul style="list-style-type: none"> <li>• Public blockchain reserved to a privileged group</li> <li>• Born to overcome strengths and weakness of Private and Public</li> <li>• Limiting disadvantages</li> <li>• Ensure transparency and governance</li> </ul>

Source: Authors’ elaboration

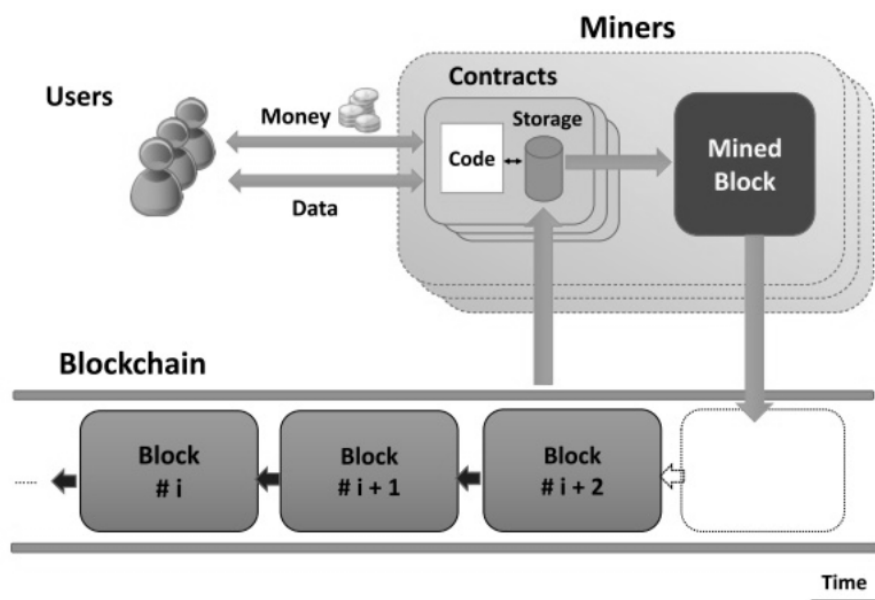
Thus, *Hybrid* platforms can create a distributed ledger accessible worldwide, with a Private Blockchain that controls the register. For instance, the R3 consortium is a partnership of many financial companies, institutions and regulators which developed Blockchain usage in the financial system (Blockchain Council; Wust and Gervais, 2018; Elasrag, 2019;). Literature contributions on Blockchain application in payment system have become extensive over the years. More recently, Blockchain-based applications are also studied in the other financial systems component. The last literature review by Rabbani et al. (2020) focuses on Blockchain technology implications, specifically in IF. Continuity, transparency, and immutability of transaction are three of the most crucial advantages of blockchain application for the financial system, combining with Islamic practices. This technology helps independent and supervisory authorities, as Shariah-boards or international organisation, corresponds to the need to reduce re-verification or authentication Sharia-compliance (after the certification at the “go to market”). Dahdal et al. (2021) reported major problems of IF and Muslim investors are to identify *halal* investments: ensuring the *Shariah-compliant* of financial products and services is both time-consuming and challenging due to the lack of transparency and disclosure. The constituents of the Blockchain technology might guarantee investors “operating” in the secondary market the *halal* status of the instruments over the lifetime. Indeed, no third parties may alter data registered into the ledger manipulating the information (immutability).

Furthermore, the lack of IF principles standardisation between different countries might be partially solved by using the Smart Contract in Sukuk issuances. Szabo firstly introduced Smart Contracts in 1994 as a “*computerised transaction protocol that executes the terms of a contract. The general objectives of Smart Contract design are to satisfy common contractual conditions (such as payment terms, liens, confidentiality, and even enforcement), minimise exceptions both malicious and accidental, and minimise the need for trusted intermediaries. Related economic goals include lowering fraud loss,*

*arbitration and enforcement costs, and other transaction costs*” (Szabo, 1994). This contract aims to facilitate the transfer of digitalised assets between the parties involved, using a pre-defined and agreed self-executing structure. The Smart Contract concept and application is older than blockchain. The idea is more prominent than a typical contract structure since they try to meet and group the common contract condition and requirements to minimise intermediation costs (Rahim et al., 2019). It is a revolutionary change since it estimates the financial intermediation cost in the U.S. amounts to about 2% over the past 130 years (Thakor, 2020). Lawrence (2017) reports that using the Smart Contract system could reduce the cost of financial contracts and services by up to 95% in Islamic Banking. Therefore, they execute transactions easy, secure, and immutable full, deleting the uncertainty and mitigating settlement and counterparty risk, totally compliant with the *gharar* principle. They also can be compliant with the *ribah* (Alam et al., 2019). The architecture of the Smart Contracts helps to ensure and certified compliance with Islamic law exploiting the possibility to define *ex-ante* the Smart Contracts’ *Shariah compliance* considering different nature of the underlying. Alharby and Moorsel (2017) report two important definitions of Smart Contract useful to understand how they are positioned in the Blockchain technology. Firstly, Smart Contracts code is the digital code stored, verified, and executed on the blockchain, which replaces the legal contracts (Figure 5.1). Then, the power of Smart Contract also allows tokenising both assets of known and unknown value. For instance, in 1997, David Bowie set up an SPV called “Bowie Band” through a bond issue that backed the expected returns on their catalogue of 25 albums. In practice, he was buying back his music’s rights using the bond tokenisation instead of selling them (Hargrave, 2018). Asset tokenisation is defined as a process of issuing a blockchain token, called a security token. It can represent a digital tangible (or intangible) asset, similar to traditional securitisation. Tokens are created through an Initial Coin Offering (ICO), sometimes Security Token Offering (STO), if referred to those producing different tokens as equity, utility or payment tokens. Thus, STO provides the opportunity to own a fraction of

tangible/intangible and divisible/indivisible asset, simply tradeable in the secondary market (Laurent et al., 2018). The process of ICO/STO is similar to the Initial Public Offering (IPO) of stocks. Particularly, Islamic equities have to pass Shariah screening (to verify business activities and the financial ratio of companies). Smart Contracts could ensure compliance with the screening from the supply-side, and on the demand-side, help investors identify faith-based transactions. Therefore, there is no doubt that Smart Contract and blockchain-based technology applications as tokenisation could provide to the IFS the opportunity to solve some long-lasting issues, being compliant with Shariah.

Figure 5.1 Smart Contract and Blockchain scheme



Source: Alharby and Moorsel, 2017

## 5.3 Innovating Sukuk Issuances through Smart Contracts and Asset Tokenisation

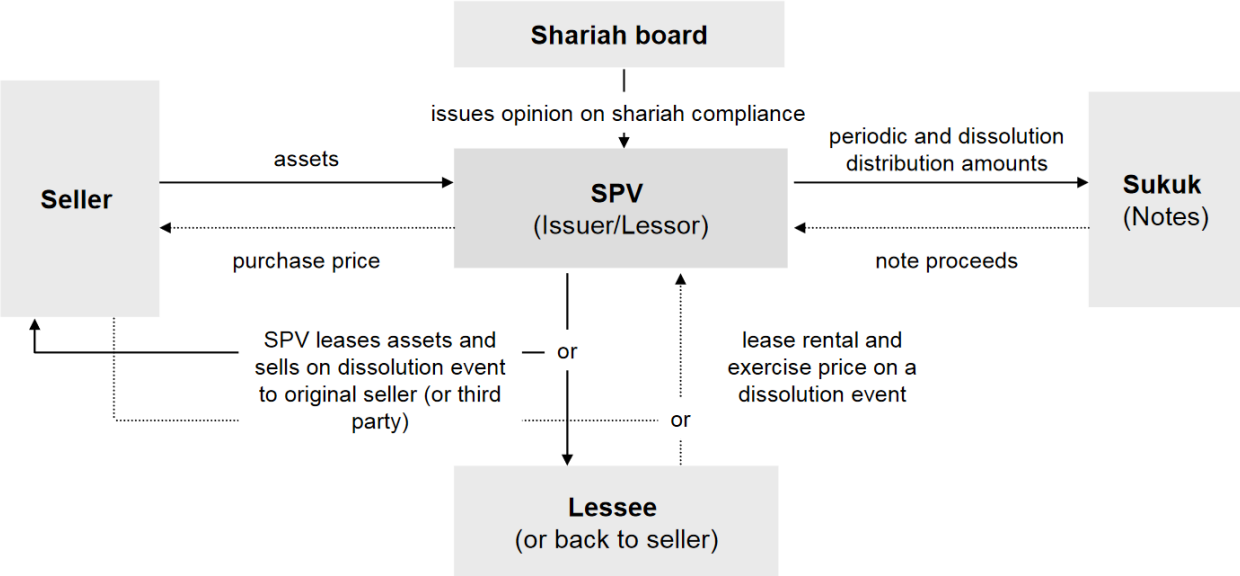
### 5.3.1 Sukuk issuing facilities: starting point

In the previous paragraph, we highlight the main features of Sukuk certificates, taking into account the possibility to merge both Smart Contract and blockchain-based technology to Islamic bond issues to face some problems, challenges and opportunities, answering literature questions too. This section focuses on different Islamic contracts analysis to highlight features and critical aspects of these structures and identify the possibility of Smart Contracts and blockchain-based technology intervention. In doing this, we also present a case-study analysis collecting three pioneers' projects on *Smart Sukuk* development. By combining the theoretical framework review with the case study analysis, this paper aims to shed light on the Sukuk inquiry and issuance process streamlining, exploring different contractual structures. According to the IFSB Report (2020), Sukuk issuances have historically dominated by *Murabahah* and *Ijarah* contracts, debt- and *lease-based*, which ensure more stable returns. The IFSB reports *Ijarah* based contract, represents the 20% of global Sukuk outstanding in 2019, and *Murabahah* based (31%), as the most famous *asset-based* contractual structures. In 2019, the IFSB observed increasing utilisation of *Mudarabah* structures (8%) as PLS contracts that AAOIFI defines as a particular form of *Musharakah* certificate. AAOIFI defines *Ijarah* Sukuk as a *certificate of ownership in leased assets* (rental/lease agreement).

*Ijarah* refers to transferring the usufruct of an asset to another person in exchange for a rent claimed from him, generally known as "lease". It is popular due to the similarity with conventional leasing, and the contractual process lies in an *asset-backed* or an *asset-based* securitisation. It depends on the rights, obligations and risks of all parties involved, especially in a default. The *originator* (as seller) is the owner of assets that sells the property

to an SPV (as issuer), designed for the operation and assuming trustee. The SPV, with an *Ijarah* contract, finances the operation issuing Sukuk certificates to investors in return for cash. In the meantime, the SPV sells assets back to the *originator* or to a *third party* which became lessees, and they pay regular rent to the SPV, which itself rewarding Sukuk holders. Sukuk holders are the operation funders, assuming the rights and obligations of the owner proportionally to the holdings of Sukuk. In an *asset-backed* securitisation, the investment returns depend on the underlying asset performance; meanwhile, in an *asset-based*, the payment source comes from the rent paid by the lessees. Thus, in the first case, the asset is separated from the originator's book, and there is a real sale of tangible or intangible but valuable assets. Investors are not linked to the creditworthiness of the originator. In the *asset-backed* securitisation, in case of insolvency of the originator, the Sukuk "should survive", and the assets will continue to pay the certificate holders (Hassan and Mollah, 2019; Godlewski et al., 2013; Tasnia et al., 2017; Hidayat, 2013;). As a matter of fact, during the 2008 GFC, only *asset-based* Sukuk defaulted. In this case of default of originator and/or SPV, investors could not execute their resale (Shaikh and Zaka, 2019). The Shariah Board ensures *Shariah-compliance* both on the governance side of the operation and the assets' eligibility build up as the transaction object. The process is reported in Figure 5.2.

Figure 5.2 Ijarah Sukuk Structures



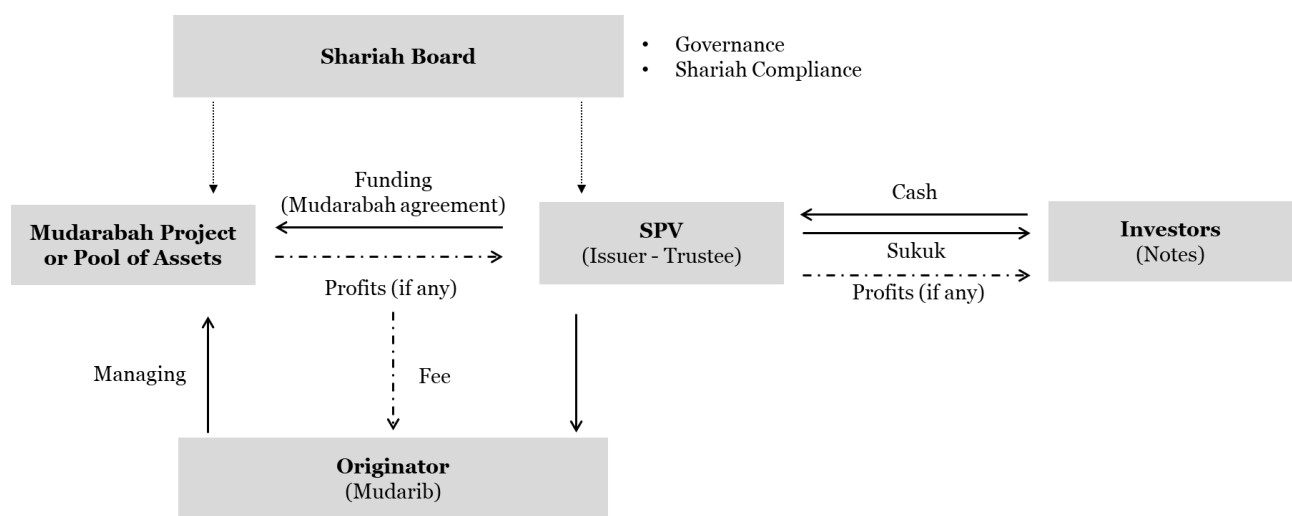
Source: Jobst, 2007

Alternatively, AAOIFI defines the *Mudarabah* contract as a *certificate representing projects or activities managed based on Mudarabah by appointing one of the partners or another person as the Mudarib for the management of the operation*. It is based on the *Musharakah asset-backed certificate* joint participation contract where two parties share the profit and the loss of a business operation. The *originator* as the *Mudarib* draws up the *Mudarabah* agreement with the SPV or *issuer*, designed for the operation as *trustee*. The SPV finances the operation issuing Sukuk certificates to investors in return for cash. Sukuk holders indirectly fund the *Mudarabah* project assuming the rights and obligations of the owner proportionally to the holding of the Sukuk. The investments return on the profits of the project (Figure 5.3). They are the most preferred by the Islamic Finance jurists since they are compliant with the PLS principles. Therefore, we introduce the *Murabahah* Sukuk contract. *Murabahah* are *certificates of equal value issued to finance the purchase of goods through Murabahah so that the certificate holders become the Murabahah commodities owners*. In this scenario, the SPV as issuer and trustee finances the operation issuing the Sukuk certificates to investors in return for cash and purchase the



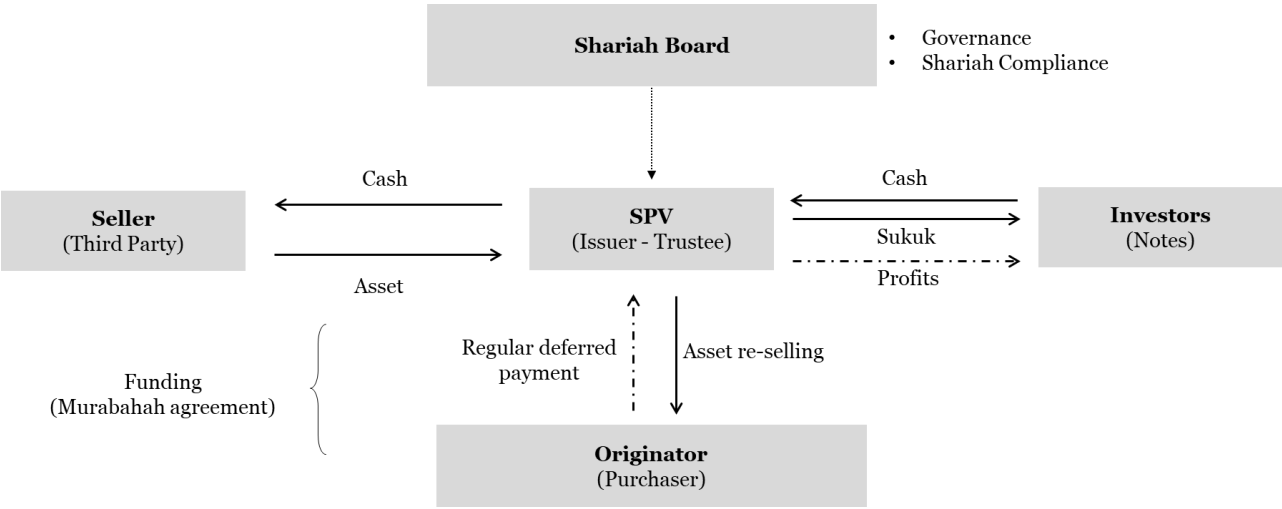
assets from a third party on behalf of the originator who cannot buy the assets directly. The SPV sells the assets to the originator with a *Murabahah* agreement for a deferred price (mark-up) distributed to the Sukuk investors (Figure 5.4). The Shariah scholars do not appreciate this contract since it is debt-based and *asset-based Ijarah*, and some scholars argue that there is no risk-sharing (Hassan and Mollah, 2019). AAOIFI requires investment Sukuk generally must represent a share in the ownership of an asset or a pool of assets *Shariah-compliant* (not debt, monetary and intangible assets). The underlying asset should be sold to the investors; thus, the investors' legal ownership remains. The Sukuk certificate *does not represent a debt owed to the certificate holder's issuer* and should be not backed purely by receivables (AAOIFI Standard 17).

**Figure 5.3 Mudarabah Sukuk Structures**



Source: authors own compilation

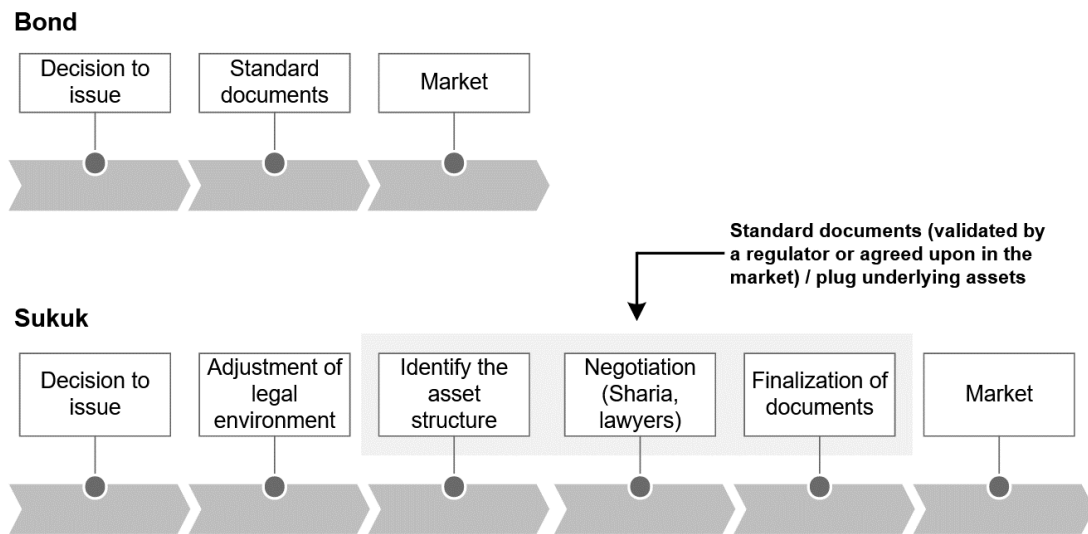
Figure 5.4 Murabahah Sukuk Structures



Source: authors own compilation

Previously, we have highlighted significant issues related to Sukuk issuances, focusing on the legal regime (*Shariah-compliance*), which maybe represent a significant barrier to the growth and globalisation of both the Sukuk and Islamic Finance industry in general. The most popular Sukuk contract structures review has shown the more difficult and time-consuming of them than conventional bonds, reported in Figure 5.5. We note how any single step of Sukuk issuance, from the certificate issuance to the SPV constitution or the *Shariah-compliance* assessment, generates a rise in the cost of financing, the complexity of inquiry processing and the lack of transparency, also related to the standardisation.

Figure 5.5 Conventional Bond and Sukuk basic structure



Source: S&P Global Ratings 2020

In addition, in 2007 the AAOIFI Shariah Board pointed out three main criticism against Sukuk, which continues to affect the global Sukuk industry and contributes to pose the perimeter of the *ShariahTech*. The first is related to the ownership of the underlying assets, which is not assured by most Sukuk contract structures as those asset-based since there is no real transfer of ownership from the originator to the investors. Sukuk compliant with Islamic law must be certificated with a legal, valid and enforceable sales agreement between all parties. The second, related to the first one, concerns the investment return of the Sukuk certificate, which is often linked to the underlying assets' actual performance. The last involved the guarantee of the return on capital. Shariah scholars specify that investment risks and return have to be related to the assets due to the PLS principles. However, these two issues generate non-compliance with the *gharar* and *maysir* fundamentals. Sukuk investors expect the issuer (SPV, as trustee) will buy back the assets at the end of the contract or in case of default. (Hassand and Mollah, 2019; Yean, 2009). The value proposition of Smart Contracts and asset tokenisation could solve these issues, improving efficiency, transparency, and traceability. These are key criteria for legitimising Sukuk issuances via self-verification and self-execute *Shariah-compliant* financial

transactions, reducing cost and time-consuming boosting the time taken from decision-to-issue till go-to-market (Shaikh and Zaka, 2019). Finally, the benefits of the standardisation and scalability of services and industry required by Islamic Finance seems to match with the Blockchain-based technologies.

### 5.3.2 Smart Sukuk and Sukuk Security Tokenisation: some experiences

Going deep into the analysis, in this section, we explore how the Smart Contract operating and the Sukuk underlying asset tokenisation (also called Sukuk Security Token - SST or Sukuk Coin) could facilitate the Sukuk inquiry and issuance process, using some empirical studies. Table 5.2 reports the leading Smart Contract underpinnings and benefits by identifying the role of these digital-legal instruments and tokenisation as a part of a *supply-side*. As mentioned before, all Blockchain technologies represent themselves as instruments that could be improved by traditional financial practice. On the *demand side*, we identify the main criticisms and challenges which required the need to innovate and accelerate both the Islamic financial industry and the global financial integration and development. According to the literature contributions, the Smart Contract supply replies to the Sukuk industry needs. The following case study analysis collects Smart Sukuk and tokenisation proposal and applications. According to the State of the Global Islamic Economy Report (2021), which highlight “signals of opportunity” for IF, the first one referred to the *Wethaq Platform* for Smart Sukuk, developed by Wethaq (a fintech company based in Saudi Arabia). The second one referred to the world’s first blockchain Sukuk issued from an Indonesian Islamic microfinance cooperative BMT Bina Ummah. The last case study results from the literature review and refers to a Sukuk tokenisation proposed by Khan et al. (2020).

Table 5.2 Connecting Sukuk Demand Side criticism and Smart Contracts Benefits

Sukuk Criticism and Challenges (Demand Side)	Smart Contract Benefits (Supply Side)					
	Self-execution	Automated	Tamper proof (transparency and immutability)	Minimum reliance of intermediaries	Cost efficiency	Simplified and Standardized structures
Slow process	x	x		x	x	x
Shariah Compliance assessment			x			x
Lack of Standardization			x			x
Lot of party involved			x	x	x	x
Time Consuming	x	x			x	x
Transparency			x			x
Complexity			x			x
High Cost Financing				x	x	x

Source: authors own compilation

### 5.3.2.1 The Wethaq Platform for Smart Sukuk

In 2018, ArabianChain Technology, a Middle Eastern innovator in the Blockchain industry, has signed a joint venture with Dubai to create Wethaq Capital, a fintech start-up and the first world platform for the Islamic capital Market using Smart Contracts. Wethaq is part of the R3-Corda consortium, an open-source distributed ledger platform made by 40+ of the largest global banks, designed to work within finance to operate complex transactions and restrict access transaction data. In 2018, Wethaq launched a *proof of concept* exploring the possibility to apply new blockchain technologies to the Sukuk market.<sup>18</sup> Wethaq developed a new Smart Ijarah Sukuk, using DLT and *Smart Contracts' smart clauses*. The platform, regulated by the Dubai Financial Service Authority, is a permissioned distributed ledger that guarantees the operations' security and transparency. Recently, ISDA (Internal Swap and Derivates Association) defined platforms as Wethaq, a

<sup>18</sup> The following information about Wethaq platform are published in “*Innovating in Sukuk Capital Markets*” report, Wethaq-Clifford Chance, July 2019, available at <https://www.r3.com/reports/innovating-in-sukuk-capital-markets/?gated=false>. For more information visit this link. Accessed in October 2020.

“light-ledger” as a DLT system where payment managing, and settlement, take place *off-chain* using existing and alternative payment systems. Wethaq, as part of R3, can benefit from the openness and capability of the Corda environment, the private permissioned blockchain platform. Thus, these platforms do not disrupt traditional financial intermediation but ancillary to cover their inefficiency, ensuring interoperability with other trading and settlement platforms. Wethaq aims to automatise the functions of register, trustee-delegate, paying, calculation and transfer agent, certificates issuances, allocation, management, and registration. This automation is provided by setting up special smart clauses constituting the Smart Sukuk digitalised documentation, contributing to cutting time-consuming, complex, and high-cost generated. This standardised template based on an “*if-then-else-require*” code (as the Ethereum ERC-20 basic protocol) can be customised, universally and enforceable to all Sukuk issuances. Transparency and immutability of the legal, contractual conditions are guaranteed by the pre-agreed Smart Contract and the subsequent registration into the ledger. For instance, referring to Figure 2, single steps and conditions of the traditional contract, as bilateral agreements between parties, can be digitalised beginning part of the Ijarah Smart Sukuk issuance single agreement registered into the ledger. Firstly, the originator starts the operation by addressing a bank advisory to constitute the SPV (without considering the possibility to merge the role of the SPV and the platform). DLT platforms as Wethaq provide the infrastructure to set up the Smart Sukuk issuance. According to the smart clauses (asset selling, funds transfer, lease-back, periodic rent payment, etc.), the originator and the SPV start the Ijarah Smart Sukuk with the market fundraising. Once the investors buy the Sukuk certificates, they purchase the legal ownership of the underlying assets (in the *asset-backed* form) or the beneficial interest ownership in them (in *asset-based*) and “sign” the Smart Contract. Sukuk-holders’ cash is automatically transferred to the SPV and the originator, which starts the lease-back agreement and the periodic rent payments. Payments could be managed directly from the platform, which transmits the instruction to the paying agency (as the bank advisory) using



transparency, costs and reducing the need for multiple intermediaries. This first issuance is based on a pure PLS structure as *Mudarabah*. BMT assumes the issuer and manager of the operation (*Mudarib*), collecting investors funds and helping SME and micro-entrepreneurs grow a profitable business. Investors are immediate purchases since they finance the project, and they are partners of the project. Signing the Smart Contract certificate holders participate proportionally to the P&L of the operation with the real owner of the underline and converting cash in Smart Sukuk tokens via blockchain. Then, issuing institution shares profit with Sukuk investor, automatically distributing funds with the Smart Sukuk Token holders via the blockchain and according to the contract's smart clauses. This kind of structure is helpful for small financing operation since simplifying the intermediation circuit, with minimum reliance on intermediaries and then fewer costs, high level of standardisation and transparency and ensuring the Shariah-Compliance for Muslim investors. There is no doubt that this is a breakthrough in improving the financial inclusion of the *unbankable* people that traditional financial institutions cannot provide.

### *5.3.2.3 Sukuk Tokenization using Ethereum technology*

We conclude by introducing a case study about the tokenisation of Sukuk *Murabahah*. This case study also explores the use of emerging blockchain technologies to tackle and challenge Sukuk structuring (slowness of the process, high costs, Shariah-compliance, lack of standardisation, etc.) assets tokenisation and the Smart Contract template and providing clear evidence about cost-saving. Previously, we have just deeply explored the implementation of Smart Contract templates in Sukuk issuances and the long-lasting relationship. Smart Contract creation and assets tokenisation are very strictly related. According to Khan et al. (2020), *Sukuk coins are a kind of token through the Smart Contract*.



In traditional Sukuk issuances, investors directly/indirectly purchase the underlying assets or the beneficial ownership on them, raising questions about the Shariah-compliance of the operation (under which it is not allowed to sell debt and intangible assets). As mentioned before, in *asset-based* Sukuk, the originator remains the asset's legal owner, creating a direct relationship between the investors and the originator in case of bankruptcy or other issues. In asset tokenisation, investors take part in Sukuk STO (SSTO) purchasing Sukuk coins. They will represent the fractional ownership in the tokenise asset, to which all rights and obligations are linked. New Ethereum ERC standards as ERC-1400, ERC-721 or ERC-223 are overcoming ERC-20 Smart Contract standards in terms of smart clauses since they increase security and privacy, intangible asset tokenisation and the possibility to distribute dividends as equity shares.

## **5.4 Conclusions and the way forward**

This paper aims to discuss the impact of DLT, focusing on blockchain on IF, referring to the Sukuk industry, using a case study analysis. Analysing three different experiences regarding the Smart Sukuk and tokenisation implementation in Sukuk issuances, we have found self-evident positive implications in terms of standardisation of IF practices, transparency for market operators, and reducing regulatory arbitrage in the Sukuk industry. Thus, this paper intended to contribute to the existing literature declining possible benefits of DLT, well explored in the conventional context, to the peculiarities of the Sukuk industry and, in doing so, highlight how this technology could solve major criticism and challenges of the Sukuk industry. By studying different real experiences, we confirm how assets tokenisation could represent a revolution and a way forward for Sukuk to obtain the same benefits affecting conventional securitisation but also with different underpinnings.

The impact of the tokenisation, their capability and appliances are boundless since it is now possible to create and share any imaginable asset frictionless. Tokens give the chance to share and ensure the ownership of any tangible and intangible asset across a coin issuance. This possibility solves the big issue of securitisation in the Sukuk issuance process since the SSTO eliminates the risk of uncertainty about the ownership, the rights and the obligations linked to the underlying assets, resetting the risk of *gharar* and *maysir* fundamentals. Moreover, this kind of appliance solves the problem related to asset-based and asset-backed Sukuk securitisation problems, which positively impact the transparency and complexity of Islamic Finance contractual facilities. However, these fundamentals are inevitably related to the conventional bond and securitisation processes, which often suffer the Sukuk industry's same problems. For instance, by looking to a simple Sukuk issuance fundamental and implementing tokens, conventional securitisation tackles and solves the same issues. Firstly, using ABS-tokens as well as Sukuk tokens, banks clean the balance sheet liabilities (as the originator requires in Shariah-compliant Sukuk), transferring the ownership of the assets. On the investors' side, the use of tokens solves the mutual problem of the lack of trading at the secondary market both for ABS and Sukuk certificates, increasing liquidity, traceability, transparency and payments, and the problem related to the certificate-holder rights in case of default of bankruptcy. In both cases, tokens and Smart Contracts allow encoding KYC and legal compliance of the process. Finally, we can conclude a positive relationship between Sukuk criticism and challenges “Demand-Side” and Smart Contract benefits (Supply-Side). In addition, the needs of IFS in terms of challenges and opportunity perfect match with the response given by the digitalisation and blockchain technologies because it is also, in part, the need of the global financial system.

Digital transformation has a more significant role in the Islamic finance industry, contributing to providing a firm answer to the problem of financial inclusion and the lack of legislation. As a matter of fact, the State of the Global Islamic Economy Report 2021 reported the strategic role of Sukuk instruments in satisfying pandemic and post-pandemic

financial needs, listing a signal of opportunities for the Islamic Economy referring to the tokenisation of Sukuk and the social impact and green Sukuk issuances. Matching the binomial relationship related to tradition and innovation is a developing and current issue.

## References

- AAOIFI, (2008). Shariah Standard (17). Investment Sukuk. <http://www.nbfi-modaraba.com.pk/Data/Sites/1/skins/nbfi/images/AAOIFI/ShariahStandard17.pdf>
- Alam, N., Gupta, L., Zamani, A. (2019). *Fintech and Islamic Finance*. Springer International Publishing
- Alharby, M., and Moorsel, A. (2017). Blockchain-based Smart Contracts: A Systematic Mapping Study. ArXiv, abs/1710.06372.
- Aloui, C., Hammoudeh, S., & Hamida, H. (2015a). Co-movement between sharia stocks and sukuk in the GCC markets: A time-frequency analysis. *Journal of International Financial Markets, Institutions and Money*, 34, 69–79.
- Aloui, C., Hammoudeh, S., & Hamida, H. (2015b). Global factors driving structural changes in the co-movement between sharia stocks and sukuk in the Gulf Cooperation Council countries. *The North American Journal of Economics and Finance*, 31, 311–329.
- Aloui, C., Hammoudeh, S., & Hamida, H. (2015c). Price discovery and regime shift behavior in the relationship between sharia stocks and sukuk: A two-state markov switching analysis. *Pacific-Basin Finance Journal*, 34, 121–135.
- Azmat, S., Skully, M., & Brown, K. (2014). Issuer's choice of Islamic bond type. *Pacific-Basin Finance Journal*, 28, 122–135.
- Blockchain council. <https://www.blockchain-council.org/blockchain/permissioned-and-permissionless-blockchains-a-comprehensive-guide/>

- 
- Dahdal, A. M, Truby, J.M. and Ismailov, Otabek (2021). The Role And Potential Of Blockchain Technology In Islamic Finance. *European Business Law Review* 2 (2022), Available at SSRN: <https://ssrn.com/abstract=3804257>
  - Elasrag, H. (2019). *Blockchains for Islamic finance: Obstacles & Challenges*, MPRA Paper 92676, University Library of Munich, Germany.
  - Gartner (2018). *Digitalization Will Make Most Heritage Financial Firms Irrelevant*. <https://www.gartner.com/en/doc/338356-digitalization-will-make-most-heritage-financial-firms-irrelevant>
  - Godlewski, C.J., Turk-Ariss, R., Weill, L. (2013). Sukuk vs. conventional bonds: A stock market perspective. *Journal of Comparative Economics*, 41, 745-761.
  - Hargrave, J. Sahdev, NK., Feldmeier, O. (2018). *How Value is Created in Tokenized Assets*. Available at SSRN: <https://ssrn.com/abstract=3146191>
  - Hassan, A and Mollah, S. (2018). *Islamic Finance. Ethical Underpinnings, Products, and Institutions*. Palgrave Macmillan (2018), Springer Nature
  - Ibrahim, MH. (2015). Issues in Islamic banking and finance: Islamic banks, Shari'ah-compliant investment and sukuk. *Pacific-Basin Finance Journal*, 34, 185–191.
  - IFSB (2020). *Islamic Financial Services Stability Report 2020, July 2020*. <https://www.ifsb.org/download.php?id=5724&lang=English&pg=/index.php>
  - Jobst, A. (2007). *The Economics of Islamic Finance and Securitization*, IMF Working Papers 07/117, International Monetary Fund.
  - Jobst, A., Kunzel, P., Mills, P., Sy, A. (2008). Islamic bond issuance: what sovereign debt managers need to know? *International Journal of Islamic and Middle Eastern Finance and Management*, 1(4), 330–344.
  - Kenourgios, D., Naifar, N., Dimitriou, D. (2016). Islamic financial markets and global crises: Contagion or decoupling? *Economic Modelling*, 57, 36–46.

- Laurent, P., Chollet, T., Burke, M., Seers, T. (2018). The tokenisation of assets is disrupting the financial industry. Are you ready? Inside Magazine, 19: 62–67. Available online <https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/financial-services/lu-tokenization-of-assets-disrupting-financial-industry.pdf>
- Lawrence, W. (2017). The Future of Islamic FinTech Is Bright. <https://www.forbes.com/sites/lawrencewintermeyer/2017/12/08/the-future-of-islamic-fintech-is-bright/?sh=18de16b965fa>
- Maghyereh, AI. and Awartani, B. (2016). Dynamic transmissions between Sukuk and bond markets. *Research in International Business and Finance*, 38, 246–261.
- Mohamed, H., and Ali, H. (2019). *Blockchain, Fintech, and Islamic Finance*. Berlin, Boston: De Gruyter. doi: <https://doi.org/10.1515/9781547400966>
- Mohamed, H., Masih, M., Bach, O. (2015). Why do issuers issue sukuk or conventional bond? Evidence from Malaysian listed firms using partial adjustment models.
- Moody's (2019). Global sovereign sukuk issuance to recover in 2019. [https://www.moody's.com/research/Moodys-Global-sovereign-sukuk-issuance-to-recover-in-2019-PBC\\_1162325](https://www.moody's.com/research/Moodys-Global-sovereign-sukuk-issuance-to-recover-in-2019-PBC_1162325)
- Oseni, U. A., and Hassan, M. K. (2015). Regulating the governing law clauses in Sukuk transactions. *Journal of Banking Regulation*, 16(3), 220–249.
- Paltrinieri, A., Hassan, M., Bahoo, S., & Khan, A. (2019). A bibliometric review of sukuk literature. *International Review of Economics & Finance*.
- Rabbani, MR., Khan, S., Thalassinos EI. (2020). FinTech, Blockchain and Islamic Finance: An Extensive Literature Review, *International Journal of Economics and Business Administration* Volume VIII Issue 2, 65-86
- Reuters (2020). Blockchain development may facilitate market growth for Islamic financial instruments. <https://blogs.thomsonreuters.com/answerson/blockchain-islamic-financial/>

- 
- S&P Global (2020). Islamic Finance 2020-2021: COVID-19 Offers an Opportunity for Transformative Developments. <https://www.spglobal.com/ratings/en/research/articles/200615-islamic-finance-2020-2021-covid-19-offers-an-opportunity-for-transformative-developments-11533355>
  - Shaikh, S. and Zaka, F. (2019). Blockchain Sukuk-Financing, in: Innovations in Enterprise Information Systems Management and Engineering. Innovations in Enterprise Information Systems Management and Engineering, pp. 66–76.
  - Smolo, E. and Habibovic, E. (2012). Barriers to Growth of Islamic Finance: Issue of Standardisation. In book: Islamic Banking and Finance: Principles, Instruments and Operations, Edition: 1st, Chapter: 29, Publisher: The Malaysian Current Law Journal, Editors: Adnan Trakic, Hanifah Haydar Ali Tajuddin, pp.715-737
  - Szabo, N. (1994). Smart Contracts. Available at: <http://szabo.best.vwh.net/>
  - Tasnia, M., Mustapha, I. M., Shakil, M. H. (2017). Critical Assessment of the Legal Recourse for the Case of Sukuk Default for the Asset-Backed Sukuk and Asset-Based Sukuk Structures, European Journal of Islamic Finance 7(1): 1-6
  - Thakor, AV., (2020). "Fintech and banking: What do we know?," Journal of Financial Intermediation, Elsevier, vol. 41(C)
  - Underwood, S. (2016). Blockchain beyond bitcoin. Communications of the ACM, 59 (11) (2016), pp. 15-17
  - Walport, M. - U.K. Government Chief Science Advisor (2015). Report introduction to “Distributed ledger technology: beyond block chain”. U.K. Government Office for Science, 2016.
  - Wüst, K. and Gervais, A. (2018). Do you Need a Blockchain?. Crypto Valley Conference on Blockchain Technology (CVCBT), pp. 45-54, doi: 10.1109/CVCBT.2018.00011.
  - Yaacob, H., and Abdullah, A. (2012). Standards Issuance for Islamic Finance in International Trade: Current Issues and Challenges Ahead. International Congress on Interdisciplinary Business and Social Science 2012 (pp. 492-497). Jakarta: Elsevier.

- Yean, T. W. (2009). Sukuk: issues and the way forward. *International Legal*
- Zulkhibri, M. (2015). "A synthesis of theoretical and empirical research on sukuk," *Borsa Istanbul Review, Research and Business Development Department, Borsa Istanbul*, vol. 15(4), pages 237-248, December.
- Muhamed, N.A., Radzi, R.M. (2011). Implication Of Sukuk Structuring: The Comparison On The Structure Of Asset Based And Asset Backed Ijarah Sukuk, 2nd International Conference on Business and Economic Research (2nd ICBER 2011) Proceeding 2011-466, Conference Master Resources.





## Part 3 – Sustainability

### Chapter 6

# Comparing ESG Rating: between new European regulation and the Non Financial Disclosure

---

**Abstract:** This paper aims to contribute to developing a new holistic ESG rating methodology in order to support the discussion about a sustainability rating process “EU Compliant”. The literature review highlights the need for a new ESG rating approach encouraging the comparison between different rating agencies opinions. Until now, ESG rating agencies employ different benchmarks and principles to evaluate firms ESG attitudes, with the risk to turn into a mere scoring selection criterion in portfolio management decisions. The development of a standardized European regulation would improve market performance and transparency, following the MIFID II and NFRD

directives. This study contributes to align the sustainable rating methodology towards comparable and standardized criteria.

## 6.1 Introduzione

L'anno 2019 si è aperto con rinnovata attenzione verso le tematiche ambientali e di sostenibilità. In Europa, l'*Action Plan sulla finanza sostenibile*<sup>19</sup> della Commissione Europea ha posto le basi per un modello di mercato finanziario che favorisca la crescita ad impatto sociale ed ambientale positivo. Le nuove linee guida sugli investimenti *ESG* (*Environmental, Social, Governance*), pubblicate il 18 giugno 2019 dal Technical Expert Group (TEG) sulla Finanza Sostenibile<sup>20</sup>, hanno dato ulteriore impulso all'azione intrapresa dai policy makers europei. Tali *guidelines*, per il momento dedicate ai soli investimenti *green*, sono di fondamentale importanza affinché intermediari finanziari, *asset manager* ed investitori istituzionali possano orientare gli investimenti in attività ad impatto ambientale positivo. Nella stessa prospettiva, la Commissione Europea ha già pubblicato le prime Comunicazioni in materia di *non financial disclosure*, così come previsto dalla Direttiva 2014/95/UE in materia di dichiarazioni non finanziarie.<sup>21</sup>

L'elaborazione di una serie di *standards* minimi in tema di *disclosure* e di *benchmarks* comuni, proposti dalle istituzioni europee, ha come obiettivo l'armonizzazione, non tanto delle metodologie di *rating* ESG, quanto dei *driver* e degli indicatori utili alla

---

<sup>19</sup> Action Plan: Financing Sustainable Growth. European Parliament and European Commission. COM/2018/097 final.

<sup>20</sup> Technical Expert Group on Sustainable Finance (TEG), 2019. Report on UE Taxonomy, Report on EU Green Bond Standard, Interim Report on Climate benchmarks and benchmarks' ESG disclosures. Documenti disponibili online da: [https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group\\_it](https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_it)

<sup>21</sup> Communication from the Commission – Guidelines on non-financial reporting: Supplement on reporting climate-related information C/2019/4490. Disponibile online da: [https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:52019XC0620\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:52019XC0620(01)&from=EN)

definizione di ciò che può essere, o non essere, considerato sostenibile, eliminando il rischio di fenomeni di asimmetria informativa. Il *rating* ESG, complementare rispetto a quello tradizionale che analizza soltanto le variabili economico-finanziarie, è già utilizzato dagli operatori, sia per la costruzione di appositi indici, sia allo scopo di migliorare le valutazioni in termini di scelte d'investimento, in considerazione degli obiettivi di sostenibilità sociale, ambientale e di *governance*.

In generale, infatti, la letteratura si concentra ormai da tempo sulla valutazione delle performance associate alla selezione di indici che soddisfino determinati requisiti ESG attraverso l'utilizzo di apposite metodologie di *scoring* o *rating* (Friede et al., 2015; Auer et al., 2016; Garcia et al., 2017; Halbritter et al., 2016;). In particolare, sempre un maggior numero di studi ha rilevato un legame positivo tra i fattori ESG (o più in generale fattori "non finanziari") e le performance delle società nonché degli strumenti finanziari ad essere correlati (Verheiden et al., 2016). Nella valutazione di sostenibilità nonché nelle analisi in tema di rating ESG, si riscontra in generale un *gap* per lo più riconducibile ad una mancanza di trasparenza e ad una carenza di informazioni disponibili. Molto spesso, in passato, i campioni oggetto di analisi risultavano inoltre di modesta entità e non assicuravano l'ottenimento di risultati robusti (Escrig-Olmedo et al., 2010; Finch, 2004; Kempf e Osthoff, 2007; Van de Velde et al., 2005).

Al fine di valorizzare il ruolo ed il significato delle variabili ESG nonché la loro valutazione e applicazione in tema di *rating* occorre quindi concentrarsi sugli aspetti tecnici dell'industria ESG nonché sulla trasparenza informativa del mercato. Ad oggi, esiste un elevato grado di disomogeneità tra le varie tipologie di *rating* ma, soprattutto, una sostanziale ibridizzazione tra rating e giudizi di *scoring*. Il percorso del legislatore europeo, tuttavia, rende la valutazione ESG di un'emittente, o di uno strumento finanziario, un elemento non più trascurabile per le scelte strategiche di *manager* e investitori, nonché come parametro da considerare anche in un'ottica di *risk management*. L'obiettivo è quindi

quello di superare il concetto di *rating* ESG come etichetta o parametro di valutazione della sostenibilità di un'impresa o di uno strumento finanziario.

In questo scenario, il presente articolo ha come obiettivo quello di porre le basi per un impianto metodologico integrato, utile ad implementare un sistema di *rating* ESG “*EU Compliant*” che favorisca la comparabilità tra i diversi *rating* di sostenibilità. L'obiettivo prende spunto da quanto verificato in letteratura circa un evidente e spesso non marginale disallineamento nei giudizi forniti dalle agenzie di *rating/scoring* ESG, le quali utilizzano parametri e principi di valutazione spesso diversi tra loro e che, nella maggior parte dei casi, limitano il perimetro della finanza sostenibile, riducendo il tutto a variabili discriminatorie ai fini delle scelte di portafoglio. Una maggiore standardizzazione del quadro regolamentare consente di favorire la trasparenza e il miglior funzionamento del mercato, così come previsto dalla Direttiva MIFID II e dalla NFRD in tema di *disclosure*, ma anche allineare di riflesso le metodologie di *rating* verso giudizi comparabili.

A tale scopo, nella prima parte, sarà fornito un quadro generale riguardante l'industria del *rating* ESG e le sue caratteristiche principali in tema di *business model* e funzionamento. Successivamente, il lavoro proseguirà, quindi, lungo due direttrici: inizialmente verranno descritte le metodologie di *giudizi ESG* più utilizzate dagli operatori, per proseguire poi nell'analisi del quadro regolamentare riguardante i *benchmarks* e alcune delle più rilevanti raccomandazioni fornite dal TEG alla Commissione Europea in materia di *rating* di sostenibilità. Questo consentirà, infine, di offrire un quadro complessivo di analisi e interpretazione, alla luce del nuovo perimetro disegnato dalla Commissione Europea, con particolare riferimento a quanto stabilito in materia di informazioni non finanziarie. Si propone, infatti, una mappa logica utile a stimolare un processo di allineamento tra *rating* di sostenibilità e dichiarazioni non finanziarie. Lo studio si inserisce in quel filone della letteratura che contribuisce a creare le condizioni per aumentare efficienza e trasparenza sul mercato della finanza sostenibile.

## 6.2 L'industria dei rating di sostenibilità: definizioni, ruoli ed opportunità

La definizione di sostenibilità è, oggi, di estrema importanza per la costruzione di un sistema finanziario che favorisca una crescita con impatto sociale ed ambientale positivo. In particolare, con il termine “finanza sostenibile” l'Unione Europea ha riconosciuto la necessità di dover *“tenere in debita considerazione, nell'adozione di decisioni di investimento, i fattori ambientali e sociali, per ottenere maggiori investimenti in attività sostenibili e di più lungo termine”*.<sup>22</sup> L'orientamento assunto dalle istituzioni e dai mercati finanziari europei è, quindi, incentrato a garantire la stabilità finanziaria e la crescita economica integrando i fattori ambientali, sociali e di *governance* (ESG). L'interesse per questa attività è comune non solo ad investitori istituzionali, come banche, fondazioni, fondi pensione o assicurazioni, ma abbraccia una categoria più ampia che comprende anche fondi e società di gestione del risparmio, grazie alla crescente attenzione agli investimenti ESG. In tale contesto, sia dal lato della domanda (piccoli e grandi investitori), che dal lato dell'offerta (imprese ed emittenti), l'attenzione ai rating di sostenibilità sociale ed ambientale, è uno dei principali requisiti per poter gestire al meglio le proprie risorse finanziarie (Tabella 6.1). Per questo motivo, la maggioranza degli operatori si sta dotando di sistemi che consentono agli utenti finali di poter individuare gli strumenti classificabili con l'etichetta “ESG”, ma soprattutto che siano in grado di definire il “grado” di sostenibilità raggiunto. Di comune opinione è considerare la sostenibilità come un vantaggio e non un ostacolo per i sistemi finanziari. Occorre però fare chiarezza soprattutto dal lato emittenti, in considerazione del proliferare di soggetti fornitori di rating ESG o di sostenibilità. Un ruolo fondamentale è svolto dalle autorità di vigilanza e dalla regolamentazione, che si

---

<sup>22</sup> Action Plan: Financing Sustainable Growth. European Parliament and European Commission. COM/2018/097 final.

devono far carico dell'onere di fornire un adeguato set informativo con definizioni chiare e applicabili oltre che a linee guida largamente condivisibili.

**Table 6.1 Il rating di sostenibilità dal lato della domanda**

Soggetti	Ruoli ed opportunità
<b>Investitori</b>	Questa categoria spesso si avvale dei <i>rating</i> di sostenibilità per il contenimento del rischio reputazione e per comparare i differenti <i>applicants</i> nel processo di scelta e gestione del portafoglio. Grazie al servizio fornito dalle SRAs, anche soggetti diversi dai Socially Responsible Investments Funds, come <i>mutual funds</i> , fondi pensione, banche ed altri intermediari finanziari, possono integrare i criteri di sostenibilità all'interno del loro modello di <i>business</i> e fronteggiare rischi reputazionali e operativi.
<b>Stakeholders</b>	Sottoporre un emittente a <i>solicited sustainability rating</i> , significa anche motivare gli <i>stakeholders</i> e il personale impiegato alla cooperazione con il <i>management</i> per affrontare una sfida comune volta al raggiungimento di obiettivi di sostenibilità, anche migliorando le relazioni con gli investitori ed il mercato.
<b>Emittenti</b>	Aziende, emittenti di strumenti finanziari, fondi, SGR, governi nazionali, e città sono i soggetti destinatari dei giudizi di <i>rating</i> che possono così sottoporsi a valutazioni indipendenti del loro rischio reputazionale ed operativo.
<b>Istituzioni finanziarie e non finanziarie</b>	Le istituzioni finanziarie e non, possono avvalersi di <i>rating</i> di sostenibilità da affiancare al tradizionale giudizio di merito creditizio, anche nella valutazione del rischio di controparte. Il rischio ESG assume quindi un ruolo centrale accanto ai tradizionali rischi finanziari.

Fonte: elaborazione propria su dati Standard Ethics<sup>23</sup>

A partire dalla necessità di una maggiore chiarezza in termini di rating ESG, il *background* finora descritto riconduce all'esigenza di una classificazione delle attività considerate sostenibili, e della valutazione del diverso grado di sostenibilità di uno strumento finanziario o di un'istituzione. In questo spazio, si inserisce l'utilizzo di un sistema di *rating*, complementare rispetto a quello tradizionale, il quale, affiancato ad una corretta tassonomia, prenda in considerazione non solo variabili economico-finanziarie, ma anche un nuovo gruppo di variabili "non finanziarie", comunemente definite *Non Financial*

<sup>23</sup> Guide to Standard Ethics Rating Essentials (2018). What are sustainability ratings and how do they work? Disponibile online da: [http://standardethicsrating.eu/images/Documents/1.\\_Sustainability\\_Rating\\_definitions\\_Guide\\_2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/1._Sustainability_Rating_definitions_Guide_2018_1.pdf)

*Information* (NFI)<sup>24</sup>. Le NFI contemplano i fattori sociali, ambientali e di *governance* per migliorare la responsabilità delle imprese nei confronti del mercato e degli *stakeholders*.

A tale scopo, evidente è lo sforzo dell'Unione Europea, la quale ha riconosciuto l'importanza della comunicazione al mercato di informazioni relative alla sostenibilità, riguardanti i fattori ESG, al fine di individuarne i rischi e accrescere la fiducia degli investitori e consumatori. La Direttiva 2014/95/EU (meglio conosciuta come *Non-Financial Reporting Directive* – NFRD)<sup>25</sup> e successive raccomandazioni, ha previsto la diffusione delle informazioni di carattere non finanziario per alcune imprese e gruppi di grandi dimensioni (ad esempio società quotate, banche, assicurazioni), già a partire dal 1° gennaio 2017. Nel frattempo, il TEG istituito dalla Commissione Europea, ha pubblicato il primo *Final Report* in tema di *climate disclosure*<sup>26</sup> e sottoposto a revisione finale un *Taxonomy Technical Report*, in base ai compiti ad esso assegnati dalla Commissione, in attuazione dell'*Action Plan* e di successivi regolamenti.<sup>27</sup> Accanto a questa tassonomia, il TEG ha anche concluso il processo di elaborazione dei cd. “*Minimum standards of the “EU Climate Transition” and “EU Paris-aligned” benchmarks*”<sup>28</sup>, al fine di fronteggiare il rischio di *greenwashing* (verniciatura verde) e di rendere chiara e univoca la definizione di sostenibilità e di impatto ambientale per tutti i settori e per tutte le attività economico-finanziarie. Le indicazioni fornite dal TEG, saranno di supporto all’emanazione da parte

---

<sup>24</sup> Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, recepita in Italia con D.L. n. 254 del 30/12/2016. Disponibile online da: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095>

<sup>25</sup> Idem

<sup>26</sup> TEG Report on Climate-related Disclosure (Gennaio 2019). Disponibile online da: [https://ec.europa.eu/info/sites/info/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/19011\\_o-sustainable-finance-teg-report-climate-related-disclosures\\_en.pdf](https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/19011_o-sustainable-finance-teg-report-climate-related-disclosures_en.pdf).

<sup>27</sup> ibidem

<sup>28</sup> Ivi pag. 3

della Commissione Europea di “Comunicazioni non vincolanti”, così come previsto dalla NFRD<sup>29</sup>, in attesa di avere un quadro regolamentare completo.

Dal lato dell'industria del *rating*, l'implementazione di una *Sustainable Rating Methodology*, che prenda in considerazione il nuovo contesto disegnato dal legislatore europeo, diventa un esercizio inevitabile. Tuttavia, questa nuova metodologia di *rating* necessita di una struttura standardizzata che ne permetta la comparabilità, come nel caso dei *rating* tradizionali, e che rispecchi una coerenza con quanto emerso a livello europeo su input dell'*Action Plan*. Da parte del legislatore, d'altro canto, è richiesta particolare cura per evitare che si inneschino fenomeni di *greenwashing*, legati alla presenza di una regolamentazione ancora frammentata e incompleta. Il business del rating ESG rischia di essere infatti soltanto un modo per farsi pubblicità, approfittando del *trend* del momento rispetto ai temi ambientali o più in generale relativi alla sostenibilità. Il tema è invece più ampio, considerando che il *rating* di sostenibilità può risultare utile per:

- coniugare rendimenti economico-finanziari e obiettivi di carattere “etico”;
- effettuare un controllo strategico delle variabili e quindi dei rischi ESG;
- orientare le scelte d'investimento;
- controllare la ESG *performance* raggiunta.

Il paragrafo successivo evidenzia un *gap* metodologico, dovuto soprattutto ad una mancanza di armonizzazione dal punto di vista dei principi alla base delle singole metodologie. Come in ogni mercato in via di sviluppo, il rischio di imbattersi in fenomeni di asimmetria informativa, incorrendo in strumenti ed emittenti etichettati “ESG”, ma che non rispettano in realtà la natura di sostenibilità, è molto alto. Il processo di valutazione della sostenibilità non può essere risolto soltanto implementando un processo di selezione o scoring. Per questo motivo è necessario, già livello regolamentare, definire ciò che è

---

<sup>29</sup> Ibidem



sostenibile o *green* da ciò che non lo è, così da rendere l'acronimo ESG in un indicatore chiaro e trasparente, che non sia soggetto ad abusi da parte degli operatori. A tale scopo, in merito ai diversi ruoli in capo alle Credit Rating Agencies (CRA) ed alle Sustainable Rating Agencies (SRA), l'High Level Expert Group on Sustainable Finance (HLEG) della Commissione Europea, ha fornito nel *Final Report* del Gennaio 2018 alcune importanti raccomandazioni riportate nella Tabella 6.2 seguente.

**Table 6.2 CRAs vs SRAs: le raccomandazioni dell'HLEG**

Credit Rating Agencies (CRAs)	Sustainable Rating Agencies (SRAs)
<p><b>Integrazione dei fattori ESG e del rischio ESG</b> (<i>sustainable or green risk</i>) nonché di fattori di sostenibilità a lungo termine all'interno delle loro metodologie di <i>credit risk analysis</i>.</p> <p>ESMA <i>guidelines</i>:</p> <ul style="list-style-type: none"> <li>• <i>Green risk and credit risk</i>;</li> <li>• <i>backtesting</i>: le CRAs possono avere un ruolo cruciale per capire quale ruolo hanno i fattori ESG nel caso di fallimento di una società;</li> <li>• <b>public disclosure methodology</b>: necessità di rendere pubbliche le metodologie adottate.</li> </ul>	<p><b>“Rating doesn't mean scoring or ranking”</b></p> <p>Necessità di fornire al mercato metodologie di <i>rating</i> che considerino i fattori ESG come componente fondamentale per garantire una crescita stabile e sostenibile, e non solo per processi di <i>scoring</i> orientati ad analisi di <i>performance</i>.</p> <p>Necessità di <b>standardizzare le metodologie</b> esistenti per garantire la comparabilità e diminuire il rischio di <b>greenwashing</b>.</p>
<p>Aggiornamento costante delle metodologie utilizzate, secondo le più recenti disposizioni regolamentari.</p>	<p><b>Solicited Sustainability Rating</b>: necessità di sviluppare modelli di business di tipo <b>applicant-pay</b> per garantire indipendenza e assenza di conflitti di interesse.</p>

Fonte: elaborazione propria su dati HLEG, Final Report 2018.

Le CRAs sono oggi istituzioni di rilievo, in grado di influenzare con i propri metodi di valutazione del rischio, la sostenibilità e la stabilità dei sistemi finanziari. Per questo motivo, è importante che, per evitare un rischio di tipo sistemico, esse si dotino di un approccio a lungo termine, che prenda in considerazione anche i fattori ESG, come fattori non soltanto legati ad un concetto etico-morale, ma necessari per la sostenibilità del settore

economico e finanziario. Le CRAs devono, quindi, dotarsi di metodologie di valutazione del rischio che considerino anche i fattori ESG, sia come *driver* del rischio di credito, sia come componenti di rischio sistemico (ESG risk or Green Risk). Dall'altro lato, le SRAs devono tenere in considerazione che l'industria dei prodotti ESG e *green* è in costante crescita, ed i sistemi finanziari necessitano, sempre di più, di metodologie di *rating* che considerino la sostenibilità, non solo al fine di garantirne il confronto in termini di performance degli emittenti, ma come componente fondamentale per una crescita economica con impatto ambientale positivo. Ad oggi, sono ancora molti i passi da fare in questo senso.<sup>30</sup> Le valutazioni ESG degli strumenti e degli emittenti vengono operate ricorrendo principalmente a metriche di *scoring*.

Infine, dal lato dell'offerta, il mercato dei giudizi di sostenibilità distingue diversi operatori in base al loro modello di business, alla loro indipendenza, alla metodologia o alla tipologia di clienti. Le tipologie di *rating* ESG oggi esistenti, sono per lo più di tipo *declarative*, e ad uso degli investitori. In questo caso, il modello di business adottato (*investors-pay model*), presenta delle criticità dovute ad una mancanza di trasparenza nei confronti del mercato, nonché ad una restrizione nella divulgazione del *rating*. Gli investitori potrebbero, inoltre, nutrire interesse nei confronti di un *rating* superiore o inferiore, a seconda della posizione detenuta su uno strumento finanziario. Per quanto riguarda il funzionamento del *rating declarative*, il processo prevede che un soggetto terzo (definito "consulente ESG"), elabori, dietro corrispettivo, un giudizio *tailor-made*, spesso non associato direttamente al suo nome. Questa tipologia di *rating* ed il modello di business associato non presenta grandi divergenze, evidenziando quindi un perimetro di operatività ristretto. Diverso è, invece, il caso dei *rating* di tipo *solicited* o *requested*. In questo caso, è il soggetto emittente a farsi carico del pagamento della *rating agency*, la quale opera

---

<sup>30</sup> HLEG Final Report 2018. Financing a Sustainable European Economy. Disponibile online da: [https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report\\_en.pdf](https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report_en.pdf)

attraverso un modello di business detto *issuers-pay model* o anche *applicant-pay model*. Il giudizio finale associato allo strumento o all'emittente avviene, quindi, in totale indipendenza, proprio come nel caso del *rating* di credito, dove la valutazione finale è di pubblico dominio. Soltanto nel caso di modelli di business del tipo *applicant-pay* si potrà, quindi, parlare di *Solicited Sustainability Rating* (SSR) (Tabella 6.3).<sup>31</sup>

**Table 6.3 Tipologia di Rating e Modello di Business utilizzato dalle SRA**

	Tipologia di Rating	Modello di Business
Sustainable Rating	Declarative	Investors-Pay Model
	Solicited/Unsolicited	Applicant-Pay Model

Fonte: elaborazione propria.

Da questa analisi, ne deriva che l'orientamento da seguire sembrerebbe incentrato verso l'adozione di modelli di business di tipo *applicant-pay*<sup>32</sup>, in grado di garantire indipendenza e di evitare conflitti di interesse tra *raters* e *rated*, migliorando, così, i servizi offerti. Ma non solo: l'aumento della numerosità e di importanza di istituzioni come le SRA, ha contribuito ad accrescere l'interesse collettivo verso l'industria ESG, che oggi conta sempre più strumenti finanziari che minimizzano i rischi ESG e catturano le opportunità di investimento sostenibile. In particolare, i dati provenienti dal mondo dell'*impact investing*<sup>33</sup> registrano, a livello globale, una quantità *assets* gestiti pari a 502 miliardi di dollari<sup>34</sup>.

<sup>31</sup> - Idem

- Guide to Standard Ethics Rating – Essentials (2018). What are sustainability ratings and how do they work?

Disponibile online da:

[http://standardethicsrating.eu/images/Documents/1.\\_Sustainability\\_Rating\\_definitions\\_Guide\\_2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/1._Sustainability_Rating_definitions_Guide_2018_1.pdf)

<sup>32</sup> idem

<sup>33</sup> Secondo la definizione del GIIN, per *impact investing* si intendono quegli investimenti che vengono realizzati con l'intenzione di generare un ritorno sociale ed ambientale positivo che sia misurabile, ad di là della possibilità di generare anche un ritorno finanziario. La caratteristica principale è quindi la presenza dell'impatto, definito ex ante e misurato ex post in modo oggettivo e verificabile. La capacità di generare un impatto positivo è determinante per poter definire uno strumento "ESG compliant".

<sup>34</sup> Annual Impact Investor Survey 2018, GIIN. Disponibile online da:

<https://thegin.org/research/publication/annualsurvey2018>

L'interesse per questa tipologia di attività non si ferma soltanto ad investitori istituzionali come banche, fondazioni, fondi pensione o assicurazioni, ma raggiunge anche la categoria dei fondi e delle società di gestione di risparmio, che determinano una crescente domanda di strumenti ed emittenti “sostenibili” dal punto di vista ambientale e sociale. Come per le CRAs, in ogni caso, è bene che le autorità di vigilanza e la regolamentazione riconoscano e delimitino l'attività di rating di sostenibilità/ESG fornito dalle SRAs. L'esperienza maturata con le CRAs ha dimostrato l'importanza ed il potere che lo strumento del rating può avere sui mercati, anche in ottica sistemica.

### **6.3 Le principali agenzie di rating e la “Sustainability Rating Methodology”**

Nel paragrafo precedente si è offerta una breve presentazione dell'industria del rating di sostenibilità, con particolare attenzione alla necessità di fornire una standardizzazione delle definizioni e di alcuni processi già a livello regolamentare. Infatti, il processo di review della letteratura in tema di rating ESG o di sostenibilità ha evidenziato uno scarso approfondimento sul tema, complice anche la novità degli argomenti trattati. A seguito di una review della letteratura (con l'ausilio del database bibliometrico Scopus Elsevier), utilizzando le *keywords* “ESG” e “rating” e osservando un orizzonte temporale di dieci anni (2009-2019), la ricerca ha prodotto soltanto 96 risultati. Tra questi, si nota una mancanza di contributi che approfondiscano il tema delle agenzie di rating e dei giudizi di sostenibilità, nonché delle metodologie sottostanti. Già in precedenza, si è evidenziato che tra i contributi più diffusi e citati in letteratura, il tema ESG emerge soltanto come semplice criterio di *scoring* per la composizione di indici di mercato, con particolare attenzione dal lato delle performance.

Per tali motivi è necessaria un'analisi più approfondita delle metodologie oggi applicate e più diffuse sul mercato, che ne permette l'evidenziazione di caratteristiche e differenze. È infatti di estrema importanza distinguere le varie metodologie in base ai criteri evidenziati nel paragrafo precedente, anche al fine di poterle sistematizzare in ragione di una metodologia che sia *compliant* rispetto alle disposizioni e i principi della nuova regolamentazione europea. Dall'analisi di alcuni contributi si evidenzia un notevole disallineamento tra i vari giudizi ESG forniti da emittenti diversi ma riferiti a soggetti medesimi. Inoltre, il proliferare delle SRAs, e quindi delle varie metodologie, ha causato, tra le altre, alcune problematiche quali (Olmedo et al. 2019)<sup>35</sup>:

- mancanza di trasparenza, dovuta ad una scarsa documentazione di pubblico dominio riguardante i criteri e i processi di valutazione utilizzati all'interno della *Sustainability Rating Methodology* (difficoltà riscontrata anche nel lavoro di raccolta dei dati predisposto all'interno di questo capitolo);
- commensurabilità, ovvero la difficoltà di comparazione dovuta all'espressione di stessi concetti in differenti modi.

Allo stesso modo, Berg et al. (2019), misurando il grado di divergenza rispetto ai *giudizi* di sostenibilità di alcune tra le più importanti agenzie attive sul mercato, rilevano una forte correlazione inversa tra i vari giudizi di forniti. In particolare, la correlazione tra i vari *giudizi* ammonta in media a 0,61, in un range da 0,42 a 0,73. Anche essi sottolineano l'evidente *gap* rispetto al tradizionale *rating* di credito: a titolo di esempio, Moody's e Standard & Poor's, hanno una correlazione pari a 0,99, a sostegno di quanto detto all'inizio del presente capitolo. Questo grado di correlazione inversa distorce il processo decisionale con fenomeni di asimmetria informativa evidenti, influenzando i prezzi delle società soggette al *rating* ESG, e disperdendone gli effetti sui prezzi degli *assets*.<sup>36</sup> È quindi evidente

---

<sup>35</sup> Olmedo, et al. (2019). Rating the Raters: Evaluating how ESG Rating Agencies Integrate Sustainability Principles. *Sustainability* 2019, 11, 915, [www.mdpi.com/journal/sustainability](http://www.mdpi.com/journal/sustainability).

<sup>36</sup> HLEG Final Report 2018, ivi pag. 6

la necessità di rendere più semplice l’accesso all’industria del *rating* ESG, per le società e per i soggetti coinvolti, migliorando così i tempi di risposta alla crescente domanda da parte del mercato. Occorre, inoltre, giungere ad una normalizzazione delle varie metodologie di *rating* disponibili sul mercato, con un miglioramento dei processi di analisi quantitativa, nonché della trasparenza da parte delle agenzie.<sup>37</sup> La problematica più rilevante è riscontrabile senz’altro dal fatto che le differenze tra i vari *rating* non sono di tipo qualitativo, quindi di tipo opinionistico, ma bensì quantitativo, legato a problemi di misurazione, di ambito (utilizzo di indicatori diversi) e di peso (attribuzione di diversi gradi di importanza).<sup>38</sup> Si ribadisce che la regolamentazione deve percorrere un percorso di standardizzazione dei *driver* che concorrono alla formazione di un giudizio (*rating*) di sostenibilità (ESG, green) e non delle metodologie che concorrono alla formulazione di tale giudizio, proprio come accade per il tradizionale *rating* di credito. Questo percorso, come si vedrà nel paragrafo successivo, è possibile allorché le linee guida fornite dalla Commissione Europea in tema di NFI, diventino vincolanti per tutti i soggetti coinvolti e, quindi, facilmente inseribili all’interno delle metodologie di *rating*, considerando sempre il ruolo chiave che un giudizio di *rating* deve possedere.

Il processo normativo è sicuramente lungo e complesso. Da notare che ad oggi, l’Unione Europea ha focalizzato la propria attenzione alla dimensione *environment* (E), dedicando momentaneamente spazio ridotto alle altre due componenti (S e G). In particolare, si è conclusa soltanto una parte del processo normativo, con l’emanazione da parte della Commissione delle *guidelines* non vincolanti sulle NFI. Grazie alla definizione di *driver* comuni, sarà possibile identificare con esattezza quali sono le attività sostenibili dal punto di vista ESG ed i parametri rispetto ai quali sarà possibile definire un differente

---

<sup>37</sup> Sustainability, (2019). Rate the Raters 2019. Expert Survey Results. February 2019. Disponibile online da: <https://sustainability.com/wp-content/uploads/2019/02/SA-RateTheRaters-2019.pdf>

<sup>38</sup> BERG F., KOELBEL J.F., RIGOBON R., (2019). Aggregate Confusion: The Divergence of ESG Ratings. MIT Sloan School of Management, Working Paper 5822-19. August 15, 2019.

grado di sostenibilità. La Tabella 6.4 riporta le principali agenzie di *rating* che si occupano anche di fattori ESG, accanto ad una breve descrizione delle loro principali caratteristiche e della metodologia adottata, la quale verrà successivamente studiata nel dettaglio, al fine di rilevare eventuali mancanze o opportunità. La *review* metodologica si basa sulle informazioni di pubblico dominio o disponibili su esplicita richiesta alle stesse. Si sottolinea che in alcuni casi, non è stato possibile definire i punti chiave del processo metodologico, o non sono stati trovati riferimenti espliciti all'implementazione di una metodologia di *rating* di sostenibilità.

**Table 6.4 Elenco delle principali Sustainable Rating Agencies (SRA)**

Agenzie di Rating	Tipologia di Rating e metodologia adottata
<b>Standard Ethics Ratings</b>	<ul style="list-style-type: none"> <li>• Applicant-Pay Model</li> <li>• Solicited/Unsolicited Sustainability Rating</li> <li>• Analyst-driven rating process</li> <li>• Principi ONU, OCSE, EU</li> <li>• No utilizzo KPIs</li> </ul>
<b>S&amp;P Global Ratings – ESG Evaluation</b>	<ul style="list-style-type: none"> <li>• Applicant-Pay Model</li> <li>• Solicited</li> <li>• Analyst-driven rating process</li> <li>• Possibile utilizzo delle raccomandazioni TFCF</li> <li>• Utilizzo di KPIs</li> </ul>
<b>Moody's – Vigeo-Eiris</b>	Non disponibile
<b>Fitch Ratings – ESG Relevance Score</b>	L'analisi dei documenti disponibili al pubblico ha evidenziato la mancanza di una metodologia di una metodologia di <i>rating</i> di tipo <i>sustainable</i> . È invece presente un modello di <i>scoring</i> per la classificazione ESG.
<b>Thomson Reuters (Refinitiv) – ESG Score</b>	<ul style="list-style-type: none"> <li>• Investors-Pay Model</li> <li>• Declarative ma con la presenza di fattori esogeni per “pulire” lo <i>score</i></li> <li>• Informazioni interne ed esterne (Analyst and Questionnaire Driven rating Process)</li> <li>• Utilizzo di indicatori associati alle diverse tematiche E, S, G (assimilabili ai KPIs)</li> </ul>
<b>MSCI ESG Rating</b>	<ul style="list-style-type: none"> <li>• Applicant-Pay model</li> <li>• Solicited Sustainability Rating</li> <li>• Analyst-driven rating process</li> <li>• Analisi informazioni endogene ed esosogene</li> <li>• Utilizzo KPIs</li> </ul>

<b>Sustainalytics</b>	Non disponibile
<b>RobecoSAM (Dow Jones)</b>	Le informazioni di pubblico dominio non consentono di definire l'impianto metodologico utilizzato per l'elaborazione del <i>rating</i> ESG.
<b>ISS-Oekom</b>	

Fonte: elaborazione propria.

### 6.3.1 Standard Ethics Ratings

Standard Ethics Ratings è, senz'altro uno dei *leader* mondiale nella formulazione di *rating* di sostenibilità. Essendo un'agenzia indipendente e consolidata, che opera con un modello di business di tipo *applicant-pay* e con un approccio di tipo istituzionale, non offre nessun tipo di consulenza a investitori privati ed istituzionali, ma fornisce soltanto *Solicited Sustainability Rating* richiesti dall'emittente sottoposto a giudizio. Una delle caratteristiche principali riguarda la metodologia utilizzata nella formulazione del *rating*. Standard Ethics opera seguendo la stessa procedura adottata dalle tradizionali CRAs. La metodologia di raccolta dei dati, *analyst-driven rating process*, prevede l'elaborazione di dati raccolti direttamente dai richiedenti, segregati ed utilizzati solo per la formulazione del *rating* e non per altre attività. Accanto a questa serie di dati, Standard Ethics si avvale di valutazioni basate su documenti pubblici (come quelle rilevabili dall'elaborazione delle recenti NFI), interviste e incontri con gli *applicants*. Questo *business model* consente, quindi, a questa agenzia di poter garantire un giudizio finale imparziale ed indipendente. Diverso è invece il caso del *questionnaire-driven process*, utilizzato dalle società di consulenza per fornire *rating* di tipo *declarative*, il quale consiste nell'elaborazione di dati raccolti con l'ausilio di appositi questionari somministrati all'entità target. Un secondo importante aspetto nella metodologia adottata da Standard Ethics riguarda gli *standard* di riferimento utilizzati, secondo un approccio definito “Institutional approach”. Infatti, gli standard in tema di sostenibilità e di governance utilizzati per l'implementazione dell'algoritmo metodologico, si basano sui principi di sostenibilità, governance e CSR emanati dall'ONU, dall'OCSE e dall'Unione Europea, nonché sui principi sanciti dalla Dichiarazione Universale dei Diritti



Umani (1948). Questi *standards*, opportunamente ponderati sulla base del tipo di attività svolta dall'*applicant*, garantiscono un vantaggio competitivo agli utilizzatori, in considerazione del fatto che vengono largamente condivisi a livello internazionale. Tuttavia, non vengono utilizzati dati derivanti dai *Key Performance Indicators* (KPIs), bensì l'agenzia si avvale di un algoritmo costruito da sei gruppi di variabili che garantiscono la comparabilità del *rating* attribuito ai vari emittenti:

- 1) FCeu: fair competition, dominant position, market distortions, corruption;
- 2) SAeu-oecd: shareholders' agreements, including voting rights;
- 3) Mw: market weight and shareholding structure, including major investor analysis;
- 4) IDEu-oecd: independent directorship, including risk and control management;
- 5) CGun-oced-eu: corporate governance and corporate social responsibility policies;
- 6) K: Sustainability at Risk (SaR);

È chiaro che un processo di questo tipo potrebbe sollevare delle perplessità, derivanti dalla difficoltà in termini di comparazione, soprattutto nel caso di giudizi di rating provenienti da agenzie diverse ma per lo stesso emittente. L'elemento caratterizzante dei KPIs risiede proprio nella facilità di interpretazione e comparazione. A livello metodologico, il processo di valutazione si articola in tre fasi (Guidelines, Rating e Final Report) e si avvale di un'analisi che segue un processo di tipo *top-down*, che porta all'assegnazione di un *rating* sulla base di specifiche classi di merito (Figura 6.1). Il giudizio di rating varia da "EEE" che garantisce la massima *compliance* rispetto ai principi internazionali suddetti, fino a "F", considerato il livello più basso di *compliance* e di capacità di gestione del rischio reputazionale ed operativo in situazioni di crisi. La scala di *rating* passa infine per "E+", che indica un basso grado di sostenibilità e sancisce il passaggio dell'*applicant* verso la zona "*Lower Investment Grade*" e "*Non-investment Grade*".<sup>39</sup>

---

<sup>39</sup> - *ivi* pag. 4

Figure 6.1 Classi di rating utilizzate da Standard Ethics

EEE	EEE-	EE+	EE	EE-	E+	E	E-	F
Full	Excellent	Very strong	Strong	Adequate	Non-compliant	Low	Very Low	Lowest level
Investment Grade					Lower Investment Grade		Non-investment Grade	

Fonte: Standard Ethics

### 6.3.2 S&P Global Ratings – ESG Evaluation

S&P Global Ratings ha recentemente implementato una metodologia per la fornitura di un parametro di riferimento ESG, chiamato ESG Evaluation. La metodologia utilizzata ha lo scopo di “fornire un’analisi intersettoriale e relativa sul modo in cui i fattori ambientali, sociali e di governance potrebbero influenzare l’operatività futura di una organizzazione e portare a un impatto finanziario rilevante”.<sup>40</sup> ESG Evaluation è un servizio distinto dal *rating* creditizio, che si fonda su analisi qualitative e non quantitative, basate sulla capacità dei soggetti interessati di essere preparati di fronte ai rischi ed alle opportunità, sulla base delle loro performance ESG. L’obiettivo è quello di fornire un nuovo *benchmark* di sostenibilità “con un approccio olistico e predittivo”. ESG Evaluation è il risultato di due componenti:

- 1) *ESG Profile*: il profilo ESG riflette il giudizio di S&P Ratings rispetto all’esposizione attuale e a breve termine del soggetto valutato rispetto ad una serie di rischi ed opportunità ESG osservabili e paragonabili ad altri soggetti. La

- Guide to Explaining Solicited Ratings Essentials (2018). Disponibile online da:

[http://standardethicsrating.eu/images/Documents/3\\_Explaining\\_Solicited\\_Ratings\\_Guide\\_2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/3_Explaining_Solicited_Ratings_Guide_2018_1.pdf)

- Guide to Standard Ethics Scoring Model Essentials (2018). Disponibile online da:

[http://standardethicsrating.eu/images/Documents/4\\_Scoring\\_Model\\_Guide\\_2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/4_Scoring_Model_Guide_2018_1.pdf)

<sup>40</sup> S&P Global Ratings – RatingsDirect (2019). The ESG advantage: exploring links to corporate financial performance. Disponibile online da: [https://www.spglobal.com/\\_assets/documents/ratings/the-esg-advantage-exploring-links-to-corporate-financial-performance-april-8-2019.pdf](https://www.spglobal.com/_assets/documents/ratings/the-esg-advantage-exploring-links-to-corporate-financial-performance-april-8-2019.pdf)

valutazione avviene grazie all'utilizzo di 12 fattori ESG (Tabella 6) considerando se il loro potenziale impatto finanziario, diretto o indiretto, è opportunamente mitigato. Ogni gruppo di fattori esprime, in una scala da 0 a 100, il contributo che i tre profili *environmental*, *social* e *governance* hanno sull'ESG Profile, espresso anch'esso su una scala da 0 a 100. La metodologia utilizzata prevede l'utilizzo di dati qualitativi e quantitativi dichiarati dalla società opportunamente ponderati sulla base di un parametro di riferimento detto ESG Risk Atlas<sup>41</sup> che attribuisce l'importanza di ogni fattore rispetto al settore e all'area geografica, nonché l'utilizzo di un approccio *forward-looking* rispetto all'impatto di un evento *ESG-related* sulla società.

2) *Preparedness Opinion*: questa seconda componente è considerata per valutare, sia la "Preparazione" della società rispetto a *shocks* di lungo periodo, sia la capacità di affrontare tali *shocks*, non solo rispetto alle tematiche ESG ma anche rispetto a cambiamenti tecnologici e regolamentari. La valutazione viene fatta considerando la capacità del *management* e dell'assetto organizzativo di considerare ed incorporare i fattori ESG all'interno della strategia aziendale (Tabella 6.6), esprimendo uno dei seguenti giudizi: *excellent*, *good*, *developing*. Il giudizio finale è di tipo qualitativo ed è espresso utilizzando la classificazione indicata in Tabella 6.5.

---

<sup>41</sup> S&P Global Ratings – ESG Risk Atlas (2019). Disponibile online da:  
<https://www.spglobal.com/en/research-insights/articles/navigating-the-esg-risk-atlas>

Rilevante è la possibilità che l’ESG Evaluation offre alla sua clientela riguardante la possibilità di integrare al giudizio finale anche un grado di *compliance* rispetto ai principi stabiliti dalla *Taskforce on Climate-related Financial Disclosure* (TCFD)<sup>42</sup>. La TCFD ha individuato 11 raccomandazioni articolate in 4 aree tematiche (*governance*, strategia, gestione dei rischi, metriche e *target*), che le imprese finanziarie e non, dovrebbero integrare al proprio *dataset* informativo nei confronti del mercato. Queste raccomandazioni sono di tipo volontario e largamente condivisibili ed applicabili, e saranno analizzate nel dettaglio nel paragrafo successivo.

**Table 6.5 I 12 fattori ESG utilizzati per la valutazione dell’ESG Profile di S&P Global Ratings**

<b>Environmental</b>	<b>Social</b>	<b>Governance</b>
<b>GreenHouseGas Emissions (GHG)</b>	Workforce and Diversity	Structure and Oversight
<b>Waste and Pollution</b>	Safety Management	Code and Values
<b>Water use</b>	Customer engagement	Transparency and reporting
<b>Land use</b>	Communities	Cyber-Risk and Systems

Fonte: elaborazione dati S&P Global Ratings

**Table 6.6 Fattori di valutazione della long-term Preparedness di S&P Global Ratings**

<b>Fattori</b>	<b>Valutazione dei fattori</b>	<b>Giudizio finale – Preparedness Opinion</b>
<b>Awareness</b>	• Excellent	Best in class
<b>Assessment</b>	• Good	Strong
<b>Action Plan</b>	• Developing	Adequate
<b>Decision-making</b>		Emerging
<b>Culture</b>		Low

Fonte: elaborazione propria su dati S&P Global Ratings

<sup>42</sup> La Task Force on Climate-related Financial Disclosures (TCFD) è stata costituita nel 2015 dal Financial Stability Board (FSB) – l’organismo che promuove e monitora la stabilità del sistema finanziario mondiale – con il compito di elaborare una serie di raccomandazioni sulla rendicontazione dei rischi legati al cambiamento climatico. L’obiettivo è guidare e incoraggiare le aziende ad allineare le informazioni divulgate alle aspettative e alle esigenze degli investitori. Disponibili online da: <https://www.fsb-tcf.org/>

### 6.3.3 Thomson Reuters ESG Scores

Thomson Reuters, proprio come i suoi *competitor*, ha colto l'importanza di elaborare i dati ESG provenienti dal mercato e di offrire un sistema di *scoring* che consenta di integrarne i dati nei processi ESG. Questi *scores* consentono di analizzare i singoli fattori E, S, e G attraverso l'elaborazione dei dati provenienti dai documenti pubblicati dai singoli soggetti sottoposti al processo di *screening*, e pubblicamente consultabili.<sup>43</sup> Tali dati vengono, successivamente, raggruppati sulla base di 10 tematiche distinte, alimentate a loro volta da 178 indicatori (Tabella 6.7). Accanto a questo *dataset*, Thomson Reuters utilizza informazioni di tipo esogeno, per l'elaborazione di un ESG Controversies Score, che consideri tutti quegli avvenimenti che possano penalizzare la società ed impattare sul rischio ESG e derivanti soprattutto dal contesto sociale e di *governance* (frodi, sfruttamento forza lavoro, scandali, ecc...). Questi due processi di *scoring* vengono, infine, combinati per giungere ad un indicatore finale, l'ESG Combined Score, che possa fornire al mercato un'informazione completa sulla sostenibilità del soggetto analizzato.<sup>44</sup>

**Table 6.7 Tematiche oggetto di analisi per l'individuazione del Thomson Reuters ESG Scores**

<b>Environmental</b>	<b>%</b>	<b>Social</b>	<b>%</b>	<b>Governance</b>	<b>%</b>
<b>Resource Use (19)</b>	11%	Workforce (29)	16%	Management (34)	19%
<b>Emissions (22)</b>	12%	Human Rights (8)	4,5%	Shareholders (12)	7%
<b>Innovation (20)</b>	11%	Community (14)	8%	CSR Strategy (8)	4,5%
		Product Responsibility (12)	7%		

\*tra parentesi il numero degli indicatori associati a ciascuna tematica. Accanto ad ogni indicatore è indicato il valore relativo in termini percentuali rispetto alla somma degli indicatori (178). Fonte: elaborazione dati Thomson Reuters.

<sup>43</sup> Sono esclusi i dati relativi alle GHG emissions, per le quali viene assegnato un valore fisso quando non sono fornite dal soggetto analizzato.

<sup>44</sup> Thomson Reuters ESG Score (2019). Disponibile online da:

[https://www.refinitiv.com/content/dam/marketing/en\\_us/documents/methodology/esg-scores-methodology.pdf](https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scores-methodology.pdf)

Il processo di *scoring* inizia con l’elaborazione degli *ESG data*, che si ricorda sono di tipo endogeno. Il mancato utilizzo di principi internazionali, come quelli utilizzati nelle metodologie analizzate precedentemente, ne rende difficile la comparabilità. Ogni singola società, infatti, potrebbe non adeguarsi agli *standard* di sostenibilità ESG internazionali ed europei, fornendo una *disclosure* insufficiente rispetto al percorso intrapreso dalla recente regolamentazione, che mira a garantire una maggior comparabilità degli indicatori. Il giudizio attribuito potrebbe essere influenzato da questi fattori ed essere difficilmente comparabile sia con gli altri *scores* forniti dalla stessa Thomson Reuters, sia con quelli elaborati dagli altri *competitors*. Le informazioni raccolte ed elaborate vengono, successivamente, inserite nell’algoritmo implementato da Thomson Reuters che consente di giungere ad uno *score* di tipo numerico, derivante dalla ponderazione delle 10 categorie rispetto al valore totale, in base a quanto riportato in Tabella 8. Lo *score range* calcolato viene, quindi, convertito in base ad una tabella di conversione secondo una scala da A+ ( $0.92 < \text{score} \leq 1$ ) a D- ( $0 \leq \text{score} < 0.08$ ).

#### 6.3.4 MSCI ESG Ratings

MSCI si colloca tra i fornitori di *rating* ESG più all’avanguardia con una metodologia molto simile a quella implementata da Standard Ethics Ratings e S&P Global Ratings. Il modello utilizzato, infatti, è un modello di tipo *applicant-pay* al servizio di investitori istituzionali, emittenti e società finanziarie e non. Come dichiarato dalla stessa agenzia, la metodologia alla base del giudizio di *rating*, è stata designata per “aiutare gli investitori a conoscere i rischi e le opportunità derivanti dai fattori ESG, ed integrarli nel processo di costruzione e gestione del loro portafoglio”. MSCI ESG Ratings, come le altre agenzie, ha elaborato un algoritmo alimentato da un *dataset* formato, sia da informazioni facilmente reperibili dal soggetto sottoposto ad analisi (*public disclosure*), sia da macroinformazioni di tipo esogeno (database accademici, governativi, ONG, ecc...). I principi alla base della metodologia adottata si basano su alcuni interrogativi che prendono in

considerazione i costi che, nel lungo periodo, le esternalità negative possono far gravare sul soggetto analizzato, ma anche quali sono le opportunità che i fattori ESG possono offrire ad un determinato modello di business. In breve, la metodologia utilizzata ha come obiettivo l'individuazione dei rischi e delle opportunità dei fattori ESG gravanti sul soggetto, l'esposizione rispetto a tali fattori, nonché la loro capacità di gestione. A tale scopo, MSCI\ESG Rating individua, ogni anno, 37 Key Issue Scores & Weight, rispettivamente appartenenti ai tre fattori E, S, e G, ed appartenenti a 10 sotto-tematiche (Tabella 6.8).<sup>45</sup>

**Table 6.8 MSCI ESG Key Issue Scores & Weight**

<b>Fattori</b>	<b>Tematiche</b>	<b>Key Issues Scores &amp; Weight</b>		
<b>Environmental (E)</b>	Climate Change	Carbon Emissions	Financing Environmental Impact	
		Product Carbon Footprint	Climate Change vulnerability	
	Natural Resources	Water Stress	Raw Material sourcing	
		Biodiversity and land use		
	Pollution & Waste	Toxic Emissions & Waste	Electronic Waste	
		Packaging Material & Waste		
	Environmental Opportunities	Opportunities in Clean Tech	Opp's in Renewable Energy	
		Opp's in Green Building		
	<b>Social (S)</b>	Human Capital	Labor Management	Human Capital development
			Health & Safety	Supply Chain labor standards
Product Liability		Product Safety & Quality	Privacy & Data Security	
		Chemical Safety	Responsible investment	
		Financial Product Safety	Health & Demographic Risk	
Stakeholder Opposition	Controversial Sourcing			

<sup>45</sup> MSCI ESG Research. MSCI ESG Ratings Methodology (2018). Disponibile online da: <https://www.msci.com/documents/10199/123a2b2b-1395-4aa2-a121-ea14de6d708a>

<b>Governance (G)</b>	Social Opportunities	Access to Communications	Access to Health Care
		Access to Finance	Opp's in Nutrition & Health
	Corporate Governance	Board	Ownership
		Pay	Accounting
	Corporate Behaviour	Business Ethics	Corruption & Instability
		Anti-competitive Practices	Financial System Instability
			Tax Transparency

Fonte: elaborazione dati MSCI ESG Ratings.

Anche in questo caso, MSCI ESG Rating è in grado di fornire un giudizio finale basato su una scala di *merito* che va dal migliore (AAA) al peggiore (CCC). In particolare, per giungere all'assegnazione del *rating* i dati raccolti riguardanti il soggetto sottoposto ad analisi vengono classificati e pesati in base all'informazione contenuta, aggregandoli nei 37 punti chiave sopra elencati, per i quali viene, infine, assegnato un punteggio. I singoli fattori E, S, e G, forniranno, quindi, uno *score* in base ai singoli *Key Issue* appartenenti ad esso. La sommatoria dei punteggi consentirà di determinare un *Final Industry-Adjusted Score* che corrisponderà al *rating* finale, secondo una scala che va dal punteggio più alto AAA (8.6/10.0) a quello più basso CCC (0.0/1.4). Le valutazioni delle prestazioni del soggetto analizzato non sono assolute ma sono esplicitamente intese come relative, rispetto agli *standard* e alle prestazioni dei *competitor* appartenenti al settore.

## 6.4 Un'analisi comparata dei modelli di rating sostenibili

Dall'analisi delle principali metodologie presenti sul mercato è possibile fare alcune considerazioni. In particolare, tali considerazioni consentono di comprendere l'orientamento intrapreso dal mercato soffermandosi sui modelli di business e sui principi adottati.



Preliminarmente si nota che, tra quelle di pubblico accesso, le metodologie più diffuse per la definizione del *rating/giudizio* di sostenibilità si basano su un modello di tipo *applicant-pay*. Questa prima peculiarità è segno di un'attenzione da parte dei soggetti fornitori di tale servizio, verso il problema della trasparenza e del conflitto di interessi, al centro del dibattito sulla scelta del modello da utilizzare, sulle variabili da tenere in considerazione e sul trattamento dei dati raccolti. In particolare, soltanto Thomson Reuters – ESG Score utilizza un modello di tipo *investors-pay*, producendo un servizio di *rating* di tipo *declarative*. Come evidenziato nel paragrafo 2, questo processo metodologico utilizza alcune variabili esterne soltanto al fine di depurare gli *score* ottenuti processando i dati pubblici forniti direttamente dall'impresa. È chiaro che un processo di questo tipo, che si avvale per lo più delle informazioni pubblicate dall'impresa (magari con l'ausilio della rendicontazione non finanziaria o dei bilanci sociali), potrebbe generare inevitabilmente fenomeni di *moral hazard*. Tra l'altro un problema di questo tipo si coniuga inevitabilmente con quello riguardante la raccolta e l'utilizzo dei dati per il processo di formazione del rating. Dall'analisi delle metodologie, non è chiaro se ci sia o meno un processo di raccolta dei dati migliore. È evidente però che un processo che si basi sull'alimentazione di indicatori intermedi (*score*) per la creazione di un rating di tipo *declarative* rischia di non essere esaustivo e completamente veritiero e trasparente. Ancora una volta la mancanza di *standards* e variabili comuni da utilizzare, sia per le imprese coinvolte che per i soggetti emittenti del giudizio di rating genera un disallineamento. Anche nel caso dell'*Analyst-driven* e del *Questionnaire-driven process*, utilizzati in maniera congiunta per il rating di tipo *solicited/unsolicited*, emergono delle criticità. In questo caso, se da un lato la raccolta dei dati viene svolta direttamente dal soggetto emittente migliorandone l'interpretazione e la comparabilità, dall'altro la scelta dell'utilizzo di questionari per la raccolta dei dati comporta la manifestazione di dubbi in merito all'oggettività delle informazioni raccolte. Come nel caso del bilancio finanziario per gli intermediari finanziari, occorre quindi un equilibrio informativo. In presenza di linee guida comuni e di un maggiore controllo da

---

parte delle autorità di vigilanza è possibile migliorare la *disclosure* riguardante le informazioni non finanziarie agevolando il processo di raccolta dei dati da parte dei soggetti emittenti del rating.

Ultimi due aspetti, non meno importanti, riguardano l'utilizzo dei *Key Performance Indicators* e dei principi adottati per la definizione delle tematiche e dei fattori oggetto di analisi. Come si vedrà più avanti, la regolamentazione ritiene indispensabile l'individuazione di KPIs all'interno dei quali è possibile mettere in luce determinati parametri da rispettare. Se da una parte S&P Global Ratings, Thomson Reuters e MSCI ESG Rating si avvalgono di KPIs, anche se tra loro differenti, Standard Ethics Ratings preferisce l'implementazione di un algoritmo che contenga al suo interno dati quantitativi basati sui principi di sostenibilità definiti da ONU, OCSE e Unione Europea nonché da Dichiarazioni Internazionali. Non bisogna, infatti, dimenticare che sia il *rating* di sostenibilità da una parte, che l'informazione non finanziaria dall'altra non può ridursi ad una mera pubblicazione di indicatori di *output*. Il concetto di misurazione di impatto si manifesta, infatti, in una fase successiva rispetto al raggiungimento di un risultato che possa essere definito in linea con le definizioni di sostenibilità. Questo lavoro, pur non entrando nel merito dei criteri quantitativi di assegnazione dei punteggi intermedi per l'individuazione del giudizio finale, evidenzia un problema a monte derivante da problematiche metodologiche-operative che si riflette in un problema di comparabilità tra i vari giudizi forniti, così come sostenuto dalla letteratura. È bene infatti ricordare che le differenze riscontrate in termini di misurazione spiegano soltanto il 53% della differenza totale tra i vari *giudizi* ESG, segno che si tratta di un'influenza da parte di una serie multipla di variabili (Berg et al. 2019). Anche in questo caso occorre quindi trovare un equilibrio informativo. Se da un lato i KPIs sono essenziali per permettere la comparabilità dei dati rispetto al solo utilizzo di informazioni di tipo qualitativo, dall'altro il giudizio sulle variabili ESG non può essere soltanto il frutto dell'alimentazione di indicatori di performance.

La *review* condotta permette, quindi, di individuare in un primo momento tre fattori chiave, al fine di poter raggiungere maggior trasparenza e utilizzo dei *giudizi* di sostenibilità, nonché l'integrazione dell'*ESG risk* all'interno della multidimensionalità dei rischi in capo ai soggetti operanti nei sistemi finanziari:

- 1) dichiarazione preliminare del modello di *rating* adottato (*applicant/investors pay*);
- 2) pubblicazione della metodologia adottata e trasparenza di utilizzo del rispetto degli *standard* regolamentari di sostenibilità;
- 3) adeguamento della metodologia all'utilizzo dei KPIs e dei criteri stabiliti dalla regolamentazione europea, ed esplicitazione della politica e della strategia adottata nell'ambito delle tematiche ESG.

A tal fine, la regolamentazione europea ed in particolare il lavoro svolto dal TEG possono essere la risposta alle criticità finora emerse. Lo studio delle linee guida non vincolanti pubblicate dalla Commissione Europea in tema di *climate-related disclosure*, consente di superare queste problematiche. Infatti, almeno per ciò che riguarda la tematica ambientale, tali linee guida forniscono un'indicazione delle informazioni rilevanti e obbligatoriamente rendicontabili, nonché dei principali indicatori da rispettare. Nonostante ad oggi tali indicazioni siano soltanto "raccomandate e consigliate" e non vincolanti, spianano la strada ai soggetti coinvolti ed alle agenzie di rating verso una maggiore integrazione dei processi informativi.

## 6.5 L'applicazione della Non Financial Requirement Directive (NFRD): un approccio armonizzato tra imprese e agenzie di *rating*

La Commissione Europea ed il TEG, nell'ambito dei compiti assegnatagli dall'*Action Plan*, operano in sinergia per accelerare un processo normativo iniziato nel 2018, che richiede un rapido intervento per ridurre le emissioni di gas serra (GHG) e per creare un'economia a basse emissioni di carbonio. Si nota una maggiore concentrazione, in questa fase, verso tematiche ambientali (E), a discapito delle altre due (S, G). È chiaro, quindi, che le indicazioni qui fornite, per la standardizzazione delle metodologie di *rating* analizzate nel paragrafo precedente, sono incentrate, soprattutto, sui fattori legati al tema *environment* (E). A livello internazionale, nel 2015 il Financial Stability Board (FSB) del G20, ha istituito la *Task Force on Climate-related Financial Disclosure* (TCFD), con il compito di elaborare una serie di raccomandazioni sulla rendicontazione dei rischi legati al cambiamento climatico.<sup>46</sup> Nel giugno 2017, la TCFD ha pubblicato per la prima volta un *final report* contenente 11 raccomandazioni articolate in 4 aree tematiche, riassunte in Figura 6.9: *governance*, strategia, gestione dei rischi, metriche e target.<sup>47</sup>

**Table 6.9** Raccomandazioni sulle informazioni non finanziarie distinte in base alle 4 aree tematiche

<b>Governance</b>	<b>Strategia</b>	<b>Gestione del rischio</b>	<b>Metriche e obiettivi</b>
<b>Pubblicazione struttura di Governance in merito a rischi</b>	Pubblicazione impatti correnti e prospettici derivanti da rischi ed opportunità legate al clima	Rendicontazione del processo di risk management	Rendicontazione delle metodologie implementate e degli obiettivi

<sup>46</sup> <https://www.fsb-tcfid.org/>

<sup>47</sup> Final Report – Recommendations of the TCFD, Giugno 2017. Disponibile online da: <https://www.fsb-tcfid.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf>

## 245 Comparing ESG Rating: between new European regulation and the Non Financial Disclosure

<b>ed opportunità legate al clima</b>	su attività, strategia e pianificazione finanziaria		
<b>Rendicontazioni raccomandate</b>			
<b>Board-oversight</b>	Descrizione rischi ed opportunità legate al clima nel breve, medio e lungo periodo	Descrizione processi organizzativi	Descrizione delle metriche utilizzate
<b>Ruolo del management</b>	Descrizione degli impatti sull'attività, strategia, pianificazione	Descrivere i processi organizzativi dell'azienda volti alla gestione dei rischi legati al clima	Divulgare le GHG di Scope 1 e 2 e, qualora appropriato, di Scope 3 e i connessi rischi
	Analisi di scenario per valutazione della resilienza	Integrazione dei rischi legati al clima al rischio complessivo	Descrizione obiettivi e performance

Fonte: elaborazione dati TCFD<sup>48</sup>

Il lavoro condotto dal TEG della Commissione Europea e le Comunicazioni pubblicate integrano le raccomandazioni della TCFD e forniscono alle imprese orientamenti coerenti con la Direttiva NFRD<sup>49</sup>, che ha modificato la Direttiva 2013/34/UE<sup>50</sup> relativa ai bilanci d'esercizio di alcune tipologie di imprese, ovvero quelle di grandi dimensioni che costituiscono enti di interesse pubblico (anche in forma di gruppo), come le banche. L'articolo 2 della Direttiva in questione prevede che *“La Commissione elabora orientamenti*

<sup>48</sup> MSCI ESG Ratings Methodology, ivi pag. 13

<sup>49</sup> Si ricorda che le raccomandazioni che appartengono alle “Comunicazioni della Commissione”, e non sono vincolanti per gli Stati membri e per i soggetti interessati. In particolare, in questo caso esse si riferiscono a quanto previsto dall'articolo 2 della Direttiva 2014/95/UE (NFRD).

<sup>50</sup> Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC. Disponibile online da: <https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32013L0034&from=EN>

---

*non vincolanti sulla metodologia di comunicazione delle informazioni di carattere non finanziario, compresi gli indicatori fondamentali di prestazione generali e settoriali, al fine di agevolare la divulgazione pertinente, utile e comparabile di informazioni di carattere non finanziario da parte delle imprese.*" A tal proposito, nel 2017 la Commissione ha pubblicato i primi orientamenti non vincolanti sulle informazioni di carattere non finanziario, relativi alla metodologia di comunicazione di tali informazioni. Questi orientamenti hanno lo scopo di aiutare le imprese a comunicare informazioni di carattere finanziario che siano *"di qualità, pertinenti, utili, coerenti e più comparabili"* al fine di favorire una crescita sostenibile, garantendo la trasparenza da parte dei soggetti interessati.

<sup>51</sup> Per soddisfare le esigenze emerse al punto 2 delle considerazioni finali del capitolo precedente, riguardanti la necessità di adottare una maggiore trasparenza rispetto alla struttura della metodologia utilizzata dalle SRA, la Commissione Europea precisa che una corretta comunicazione delle informazioni di carattere non finanziario deve rispettare i seguenti principi. Pertanto, tali informazioni devono essere:

- 1) Rilevanti;
- 2) Corrette, equilibrate e comprensibili;
- 3) Complete ma concise;
- 4) Strategiche e lungimiranti;
- 5) Orientate alle parti interessate;
- 6) Coerenti e sistematiche.

Tali indicazioni sono in linea con quanto evidenziato dai soggetti fornitori di *rating*, che comprendono l'esigenza di valutare la sostenibilità di imprese e soggetti emittenti, adattando *driver* e metodologia in funzione della tipologia di attività, dell'ubicazione geografica, nonché del diverso ruolo che esse possono avere nella

---

<sup>51</sup> Communication from the Commission 2017/C 215/01 – Guidelines on non-financial reporting (methodology for reporting non-financial information). Disponibile online da: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017XC0705\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017XC0705(01)&from=EN)

valutazione e gestione dei rischi legati al clima. La stessa Commissione sottolinea, infatti, come il tema della sostenibilità, in continua evoluzione, richiede un continuo aggiornamento e perfezionamento sia nella gestione dei rischi e nella *disclosure* al mercato, sia nell'implementazione delle metodologie per la loro valutazione. Per consentire una miglior valutazione dei rischi collegati ai temi ESG, si ricorda che la Direttiva NFRD, ha introdotto una doppia rilevanza rispetto all'impatto che una determinata attività può avere su una determinata impresa, così come indicato nelle Comunicazioni della Commissione 2017/C 215/01. In particolare:

- **Rilevanza finanziaria:** “il riferimento all'«andamento dell'impresa, dei suoi risultati e della sua situazione» rimanda alla rilevanza finanziaria, nel senso lato dell'incidenza sul valore dell'impresa. Le informazioni relative al clima devono essere comunicate se necessarie alla comprensione dell'andamento dell'impresa, dei suoi risultati e della sua situazione. Questa prospettiva è quella che di solito interessa maggiormente gli investitori;”

- **Rilevanza ambientale e sociale:** il riferimento all'«impatto dell'attività dell'impresa» rimanda alla rilevanza ambientale e sociale. Le informazioni relative al clima devono essere comunicate se necessarie alla comprensione dell'impatto esterno dell'impresa.” Questa prospettiva è quella che di solito interessa maggiormente gli *stakeholders*.<sup>52</sup> Tuttavia, anche un crescente numero di investitori è interessato a considerare informazioni riguardanti temi ambientali, nell'ottica di comprendere e misurare meglio l'incidenza sul clima dei propri portafogli di investimento.

Il percorso normativo fin qui delineato, prosegue con le Comunicazioni della Commissione 2019/C 209/01, le quali rientrano tra quelle previste dall'articolo 2 della

---

<sup>52</sup> Ivi pag. 13

---

NFRD ed integrano le precedenti “Orientamenti sulle comunicazioni di carattere non finanziario”.<sup>53</sup> Queste comunicazioni, da interpretare in combinato disposto con la NFRD e le Comunicazioni 2017/C 215/01, rispecchiano il prodotto finale del lavoro condotto dal TEG (*Report on Climate benchmarks and benchmarks’ ESG disclosures*) e riguardano la necessità di fornire nuovi orientamenti sulle comunicazioni relative al clima da integrare alle informazioni non finanziarie. La Commissione continua a sottolineare l’importanza di valutare gli orientamenti suggeriti, qualora le questioni di rilevanza finanziaria e le questioni di rilevanza ambientale e sociale possano influire sull’attività dell’impresa, considerata la sovrapposizione di queste due prospettive. Infatti, in risposta ai cambiamenti climatici, le eventuali ripercussioni positive e/o negative possono trasformarsi in nuove tipologie di rischio e nuove opportunità dal punto di vista finanziario. Alla luce di quanto detto, è quindi opportuno che l’impresa consideri il *climate-related risk*, seguendo una *double materiality*: il rischio che l’attività abbia ripercussioni negative sul clima, quindi il rischio che l’attività svolta dall’impresa possa gravare sull’ambiente, ed il rischio di ripercussioni negative sull’impresa, ovvero il fatto che i rischi legati alle tematiche ambientali (o più in generale ESG) possano gravare sui risultati finanziari dell’impresa (rischi fisici e rischi di transizione). Ad esempio, tra questi ultimi si ricordano rischi giuridici (controversie), rischi tecnologici, rischi reputazionali, oppure rischi derivanti da fattori esterni come fenomeni meteorologici cronici sempre più frequenti o estemporanei ma disastrosi. Grazie alla capacità delle imprese di saper valutare e gestire, in ogni momento, le varie tipologie di rischio derivanti dalla loro attività, anche i rischi connessi alle tematiche ambientali possono rappresentare un’opportunità. Dalle analisi del dettato regolamentare, è possibile notare come il legislatore incoraggi coloro che contribuiscono al processo di mitigazione dei cambiamenti climatici e al loro adattamento, operando anche investimenti verso un processo produttivo più sostenibile. Questo processo consiste nell’intraprendere

---

<sup>53</sup> Communication 2019/C 209/01, ivi pag. 3



azioni verso la riduzione degli effetti negativi derivanti da essi, nonché la prevenzione e minimizzazione dei danni che essi possono causare. Diverso è il caso del processo di mitigazione dei cambiamenti climatici, che invece consiste soltanto nella riduzione o prevenzione delle emissioni di GHG, i quali, come visto in precedenza, rappresentano un punto fondamentale delle politiche ambientali internazionali. La creazione di una tassonomia Europea delle attività sostenibili potrà contribuire a riconoscere le azioni volte a contribuire alla mitigazione e adattamento dei cambiamenti climatici. Così facendo, anche nel processo di *rating*, il valutatore esterno potrà tener conto e premiare, quelle imprese che riescono positivamente nel processo di trasformazione dei rischi in opportunità, nonché, che forniscono supporto all'investimento di capitali privati in azioni legate alla sostenibilità, così come auspicato dall'*Action Plan*. Per questo motivo la Commissione consiglia fortemente di valutare l'impatto di questi rischi all'interno della propria attività, ritenendo opportuno redigere una dichiarazione in tal senso e spiegando come le imprese sono giunte a tali conclusioni.<sup>54</sup>

### 6.5.1 L'integrazione del fattore Environment (E) all'interno del processo informativo della NFRD

L'articolo 1 della Non Financial Reporting Directive (NFRD, 2014/95/UE) ha apportato alcune modifiche alla Direttiva 2013/34/UE in materia di Bilanci delle società, introducendo con l'articolo 19bis la dichiarazione di carattere non finanziario (DNF). In particolare, tale articolo, introduce l'obbligo di fornire alcune informazioni chiave considerando i seguenti ambiti<sup>55</sup>:

- 1) una breve descrizione del **modello di business** dell'impresa;
- 2) una descrizione delle **politiche applicate** dall'impresa in merito ai tali aspetti, comprese le **procedure di dovuta diligenza** applicate (due diligence);

---

<sup>54</sup> idem

<sup>55</sup> Ivi pag. 1

- 
- 3) il **risultato** di tali politiche (outcome);
  - 4) **principali rischi e loro gestione** (risk and risk management);
  - 5) definizione degli **indicatori fondamentali di prestazione** (anche conosciuti come *Key Performance Indicators - KPIs*).<sup>56</sup>

Per ogni ambito, in fase di redazione della dichiarazione non finanziaria, l'impresa deve considerare un numero limitato di informazioni seguendo delle raccomandazioni non vincolanti (seppur di interesse primario) suggerite dalla Commissione (cd *General Disclosure – Type 1*<sup>57</sup>), nonché delle raccomandazioni complementari (*Supplementary and other disclosure – Type 2 and 3*). Ai fini del raggiungimento dell'obiettivo individuato nel presente lavoro, in questa fase ci si occuperà soltanto delle Comunicazioni principali.

#### *6.5.1.1 Business model dell'impresa*

Di comune opinione è la necessità che occorre individuare in che modo i cambiamenti climatici influiscano sul modello di business di un'impresa, direttamente o indirettamente. In precedenza, si è visto come la NFRD ha introdotto una doppia rilevanza: finanziaria ed ambientale/sociale. A tal proposito, è necessario che l'impresa adotti una prospettiva *a più lungo termine* per saper individuare e fronteggiare i *climate-related risks* nel tempo. È chiaro che, per ciò che concerne in maniera diretta il rapporto tra modello di business e rischi legati al clima, occorre considerare, anzitutto, il tipo di attività svolta dall'impresa, l'ubicazione geografica e settoriale, nonché la tipologia e la qualità degli investimenti adottati per la mitigazione e riduzione dei fattori di disturbo ambientali. Per agevolare il processo di valutazione, nonché per consentirne la comparabilità, il TEG e la

---

<sup>56</sup> Si ricorda che per favorire la convergenza a livello dell'UE e globale, gli orientamenti riportati fanno riferimento ad alcuni quadri e *standards* ampiamente riconosciuti (TCFD, Global Reporting Initiative (GRI), Climate Disclosure Standards Board (CDSB), Sustainability Accounting Standards Board (SASB), International Reporting Council (IIRC), EMAS, CDP).

<sup>57</sup> Il TEG ha classificato le informazioni *type 1*, come l'insieme di quelle informazioni che l'impresa *should disclose*, ovvero per le quali c'è una maggiore aspettativa di attività minima di *reporting*.

Commissione, suggeriscono un metodo basato sull'analisi degli scenari, così come suggerito anche dalla TCFD<sup>58</sup>. Nella Tabella 6.10, sono riportate le informazioni suggerite dalla Commissione in tema di *business model*.

**Table 6.10 NFI: modello di business**

***Business Model – Type 1 General Disclosure***

Descrizione dell'influenza esercitata dai rischi e dalle opportunità legate al clima sul modello aziendale, strategia e pianificazione finanziaria dell'impresa in tema di *climate-related risks* (rif. Racc. TCFD, Strategy, b)).

Descrizione dell'impatto positivo o negativo dell'impresa sul fattore Environment.

Descrizione del grado di resilienza del *business model* e della strategia adottata considerando diverse tipologie di scenario. (Rif. Racc. TCFD, Strategy, c))

Fonte: elaborazione propria su dati Commissione Europea e TEG<sup>59</sup>

### *6.5.1.2 Politiche adottate e processo di due diligence*

I sistemi di governance e controllo interno costituiscono oggi un elemento molto importante all'interno delle imprese finanziarie e non. Le informazioni riguardanti il coinvolgimento e la responsabilità del CdA e della direzione su tali tematiche, indicano senz'altro il livello di consapevolezza e di sensibilità raggiunto dall'impresa. Le politiche societarie adottate e l'impegno dimostrato in tal senso, è di grande aiuto per fornire al mercato ed agli *stakeholders* valide informazioni sulle attività intraprese in tema di sostenibilità ambientale. Questi aspetti, più qualitativi che quantitativi sono riportati nella Tabella 6.11.

---

<sup>58</sup> Ivi pag. 13

<sup>59</sup> - Ivi pag. 13  
- Ivi pag. 1

**Table 6.11 NFI: politiche applicate e processi di dovuta diligenza**

**Politiche e processi di *due diligence* – Type 1 General Disclosure**

- Descrizione delle politiche societarie riguardanti le tematiche ambientali (mitigazione ed adattamento legati al clima)
- Descrizione degli obiettivi intrapresi riguardanti le tematiche ambientali e climatiche nell'ambito delle politiche societarie, in particolare quelli in materia di GHG, riferendosi agli obiettivi nazionali ed internazionali nonché agli accordi COP21 2015.
- Descrivere il tipo di sorveglianza che il CdA esercita sui rischi e sulle opportunità legati al clima (Rif. Racc. TCFD, Governance, a)).
- Descrivere il ruolo della direzione nella valutazione e gestione dei rischi e delle opportunità connessi al (Rif. Racc. TCFD, Governance, b)).

Fonte: elaborazione propria su dati Commissione Europea e TEG<sup>60</sup>

### 6.5.1.3 I risultati raggiunti

La *disclosure* in tema di risultati raggiunti, riguardo alle tematiche ambientali, aiuta le parti interessate ad una valutazione complessiva dell'impresa. Al fine di valutare tali risultati, l'impresa necessita di una serie di dati qualitativi e quantitativi (si veda paragrafo 6.5.1.4 – KPIs), a sostegno delle analisi condotte. Nella Tabella 6.12 sono elencate nel dettaglio le informazioni rilevanti da pubblicare rispetto agli obiettivi, strategie, azioni e decisioni dell'impresa connesse alle tematiche legate al clima.

**Table 6.12 NFI: outcomes**

**Comunicazione sui risultati raggiunti – Type 1 General Disclosure**

- Descrizione dei risultati delle politiche adottate dall'impresa in materia di cambiamenti climatici, comprese le *performance* raggiunte rispetto agli indicatori utilizzati e agli obiettivi prefissati per la gestione dei rischi e delle opportunità legati al clima (Rif. Racc. TCFD, Metrics and Targets, c)).
- Descrizione dell'andamento delle emissioni GHG rispetto agli obiettivi prefissati e relativi rischi nel tempo (Rif. Racc. TCFD, Metrics and Targets, c)).

Fonte: elaborazione propria su dati Commissione Europea e TEG<sup>61</sup>

---

<sup>60</sup> Ibidem

<sup>61</sup> Ibidem

#### *6.5.1.4 Individuazione dei rischi e risk management*

Come accade per le informazioni di tipo finanziario, anche in questo caso occorre valutare i principali rischi connessi all'attività dell'impresa nonché le modalità di gestione degli stessi. In questo senso l'informativa dovrebbe includere sia i rischi derivanti dall'impatto negativo dell'impresa sul clima, sia quelli derivanti dall'impatto negativo dei cambiamenti climatici sull'impresa (cd rischi fisici e di transizione), nonché eventuali collegamenti. Anche in questo caso la Commissione evidenzia delle informazioni per le quali viene consigliata la pubblicazione, le quali sono riepilogate in tabella 6.13.

**Table 6.13 NFI: risks and risk management**

##### **Valutazione e gestione dei rischi – Type 1 General Disclosure**

Descrizione dei processi e delle metriche impiegate per individuare e valutare i rischi connessi al clima nel breve, medio e lungo periodo. [Rif. Racc. TCFD, Risk Management, a)].

Descrizione dei principali rischi connessi al clima che l'impresa ha rilevato nelle varie attività di produzione e gestione (dipendenza da capitale naturale, biodiversità, ecc...) (Rif. Racc. TCFD, Strategy, a)).

Descrizione dei processi di *risk management* connessi ai fattori climatici (Rif. Racc. TCFD, Risk Management, b)).

Descrizione delle modalità con cui i processi di individuazione, valutazione e gestione dei rischi legati al clima sono integrati nel *risk management* (Rif. Racc. TCFD, Risk Management, c)).

Fonte: elaborazione propria su dati Commissione Europea e TEG<sup>62</sup>

#### *6.5.1.5 L'utilizzo dei Key Performance Indicators (KPIs)*

Ultimo elemento su cui la Commissione Europea pone l'attenzione è l'utilizzo dei *Key Performance Indicators* (KPIs). L'utilizzo di indicatori di *performance* è di fondamentale importanza per consentire una valutazione quantitativa interna ed esterna del grado di sostenibilità di un'impresa su ognuno dei temi E, S, e G. Oltretutto, l'utilizzo di indicatori è senz'altro di aiuto nel processo metodologico che conduce all'assegnazione del giudizio di *rating* di sostenibilità. Anche l'orientamento internazionale ha evidenziato l'efficacia nell'utilizzo di indicatori di *performance* per consentire la valutazione e la

---

<sup>62</sup> Ibidem

---

comparazione rispetto agli obiettivi di sostenibilità prefissati dall'impresa, soprattutto per ciò che concerne la tematica che riguarda il clima (Final Report TCFD, Metrics and Target, c)).<sup>63</sup> È fondamentale che l'impresa renda conto delle metodologie di calcolo e di stima di tali indicatori, in riferimento alla strategia adottata, così che se ne possa garantire solidità e affidabilità. La Commissione Europea ha raccomandato l'utilizzo di alcune tipologie di indicatori, di seguito elencate:

- Emissioni di GHG, classificabili sulla base del GHG Protocol in:  
Emissioni dirette di GHG (*Scope 1*), emissioni indirette di GHG provenienti dall'attività produttiva (*Scope 2*) e tutte le altre emissioni indirette di GHG generate dalla *value chain* dell'impresa;<sup>64</sup>
  - Energia;
  - Rischi fisici;
  - Prodotti e servizi;
  - *Green Finance*.

La Tabella 6.14 riporta per ogni tipologia, alcuni tra i più importanti indicatori raccomandati dalla Commissione, compresi alcuni indicatori specifici per le banche e le imprese di assicurazione.<sup>65</sup> Si sottolinea che il TEG, così come le organizzazioni internazionali, consigliano il calcolo delle emissioni di GHG secondo la metodologia del GHG Protocol o della norma ISO 14064-1:2018<sup>66</sup>, o sulla base di quanto stabilito dalle

---

<sup>63</sup> Ivi pag. 13

<sup>64</sup> Greenhouse Gas Protocol Standards. Corporate accounting and Reporting Standards. Disponibile online da: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>. Tale classificazione è quella ampiamente accettata dalla regolamentazione internazionale.

<sup>65</sup> Per i dati completi si rimanda a Comunicazioni della Commissione 2019/C 209/01.

<sup>66</sup> ISO 14064-1:2018 Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals. Disponibile online da: <https://www.iso.org/standard/66453.html>

raccomandazioni della Commissione 2013/179/UE<sup>67</sup>, così da consentire l'aggregazione e la comparabilità dei dati tra imprese e giurisdizioni. Gli indicatori sotto riportati sono tutti *compliant* rispetto agli *standard* internazionali, in precedenza accennati, e alle politiche dell'Unione Europea in tema di sostenibilità. Si precisa che la Commissione Europea consiglia alle imprese (anche se non nel dettaglio), di considerare anche altre tipologie di indicatori oltre a quelli riportati in Tabella 15. Ad esempio: indicatori settoriali pertinenti per il settore di interesse, indicatori relativi a questioni ambientali correlate, indicatori relativi alle questioni sociali e collegate al capitale umano, indicatori relativi alle opportunità. Non essendo essi di fondamentale importanza ai fini del presente lavoro, si rimanda alle Comunicazioni della Commissione 2019/C 209/01.

**Table 6.14** Indicazione di alcuni KPIs

	<b>KPIs</b>	<b>Unità di misura</b>	<b>Logica</b>
<b>Emissioni di GHG</b>	Emissioni dirette di GHG generate da fonti di proprietà o controllate (Scope 1)	Tonnellate di CO <sub>2</sub> o equivalente	Attestazione della corretta misurazione della <i>carbon footprint</i> determinata dalle emissioni dirette
	Emissioni indirette di GHG provenienti dall'attività produttiva (Scope 2)	Tonnellate di CO <sub>2</sub> o equivalente	Attestazione della corretta misurazione delle emissioni risultanti dall'energia proveniente da combustibili fossili, necessaria al processo produttivo
	Tutte le emissioni indirette di GHG non incluse nell'indicatore precedente (Scope 2) generate nella <i>value chain</i> dell'impresa (Scope 3)	Tonnellate di CO <sub>2</sub> o equivalente	All'interno rientrano la maggior parte delle missioni generate dal processo produttivo (di origine indiretta). Questo indicatore consente la valutazione dell'accuratezza dei processi contabili e a comprendere in che

<sup>67</sup> Commission Recommendation of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations Text with EEA relevance. Disponibile online da: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013H0179>

			modo tali emissioni vengono analizzate.
<b>Energia</b>	Obiettivo in termini di emissioni assolute di GHG	Tonn. Di CO <sub>2</sub> o equivalente raggiunte o riduzione % rispetto all'anno di riferimento	Maggior comprensione dell'impegno delle imprese in materia di emissioni e valutazione degli obiettivi prefissati.
	Consumo e/o produzione totale di energia da fonti rinnovabili e non	MWh	Il consumo e la produzione di energia rappresentano una quota importante delle emissioni di GHG.
	Obiettivo di efficienza energetica e obiettivo di consumo e/o produzione di energie rinnovabili	%	Maggior comprensione dell'ambizione e strategia dell'impresa per il miglioramento dell'efficienza del processo produttivo, con conseguente riduzione dei costi.
<b>Prodotti e servizi</b>	Attività impegnate in regioni destinate a diventare più esposte a rischi fisici	%	Valore degli investimenti impegnati a fronteggiare i rischi fisici.
	Percentuale degli investimenti, spese e/o del fatturato proveniente da processi associati ad attività che rispettano i criteri di sostenibilità	%	Indicazione agli investitori interessati ad investimenti in imprese che contribuiscono alla mitigazione o all'adattamento ai cambiamenti climatici, senza pregiudicare altri obiettivi di sostenibilità.
<b>Green Finance</b>	Tasso delle obbligazioni verdi ( <i>Green Bond Ratio</i> ) legate al clima e/o tasso dei debiti verdi ( <i>Green Debt Ratio</i> )	% ( <i>Green Bond / Altri bond</i> )	Indicazione della modalità di finanziamento e raccolta dei capitali del piano di sostenibilità adottato dalle imprese.
<b>Banche e imprese di assicurazione</b>	Quantità o % degli attivi associati al carbonio in ciascun portafoglio	Valuta o %	Esposizione del portafoglio a settori a rischio
	Volume delle esposizioni per settore della controparte	Valuta o %	Indicazione della concentrazione delle esposizioni verso settori a rischio



Esposizione al rischio di credito e volumi delle garanzie reali per area geografica/paese	Valuta utilizzata	Indicazione della concentrazione delle esposizioni e delle garanzie reali nei paesi e nelle aree geografiche più esposte a rischi fisici.
Volume delle garanzie reali legate ad attività in settori che producono energia sostenibile.	% del volume totale delle garanzie reali	
Volume delle fonti destinate a finanziare le attività economiche sostenibili (in base a EU Taxonomy)	Valuta utilizzata e % di esposizione ai rischi	Concentrazione degli investimenti <i>green</i>

Fonte: elaborazione propria da Commissione Europea e TEG<sup>68</sup>

In conclusione, le raccomandazioni della Commissione, analizzate in questo paragrafo, permettono di comprendere il contenuto e la struttura richiesta dal legislatore alle imprese in tema di informazioni non finanziarie. Questo è di estrema importanza se esiste la volontà di giungere alla predisposizione di una serie di requisiti minimi e di *driver* che l'impresa stessa deve rispettare, al fine di rendere più chiaro e facilmente interpretabile il processo metodologico. Ma non solo: l'esistenza di precise indicazioni da parte del legislatore, contribuiscono alla prevenzione del rischio di *greenwashing*, cercando di evitare differenti livelli di trasparenza nella comunicazione dei dati. A tale scopo è importante sottolineare che il TEG sta ultimando, al fine di sottoporlo all'attenzione della Commissione, un *final report* sui "*climate benchmark e ESG disclosure*"<sup>69</sup>. Quest'ultimo documento ha l'obiettivo di fornire alla Commissione le basi per poter pubblicare ulteriori raccomandazioni in tema di *standards* e requisiti minimi per giungere all'armonizzazione

---

<sup>68</sup> Ibidem

<sup>69</sup> TEG Report on Benchmarks. Minimum Requirements for Climate Benchmarks and Benchmarks' ESG Disclosures. Disponibile online da: [https://ec.europa.eu/info/publications/sustainable-finance-teg-climate-benchmarks-and-disclosures\\_en#190618](https://ec.europa.eu/info/publications/sustainable-finance-teg-climate-benchmarks-and-disclosures_en#190618)

---

dei contenuti delle informazioni di tipo non finanziario. Infine, tale documento contribuisce anche alla riduzione dei fenomeni di *greenwashing* che si sviluppano soprattutto tra le lacune definitive della regolamentazione. L'adozione di questi criteri nella redazione della dichiarazione non finanziaria permette quindi, da un lato, la stesura di un documento veritiero e credibile in linea con quanto è previsto nell'essenza della NFRD e delle politiche in tema di sostenibilità, e dall'altro la possibilità per il valutatore esterno di poter esprimere un giudizio oggettivo, corretto e comparabile.

## **6.6 Un nuovo approccio per l'industria del *Rating* ESG: tra regolamentazione e vigilanza.**

Al fine di completare il ragionamento in un'ottica di integrazione dei principi NFRD nelle metodologie di *rating*, è utile anzitutto evidenziare l'esistenza di una corrispondenza tra gli obblighi previsti dalla NFRD e dall'informativa TCFD, così come evidenziato dal TEG. Il TEG ha, infatti, predisposto un grafico, riportato in Tabella 6.15, dal quale si comprende come nonostante i due *set* regolamentari utilizzano termini e concetti diversi, esistono corrispondenze che consentono di facilitare e rendere più chiaro il processo informativo da parte delle imprese, agevolando l'elaborazione di giudizi di *rating ESG* oggettivi e attendibili. È, quindi, evidente la presenza di una perfetta copertura di tutte le tematiche sviluppate dalla TCFD, all'interno della regolamentazione europea; segno che lo sviluppo dei 5 punti visti in precedenza (*Business Model*, Politiche e processi di *due diligence*, Risultati, individuazione dei rischi e *Risk management*, KPIs) sia sufficiente per garantire un'informativa *compliant* anche a principi internazionali.

Table 6.15 Mappatura delle corrispondenze tra NFRD e raccomandazioni TCFD

Raccomandazioni TCFD		Elementi NFRD			
		Modello aziendale	Politiche e procedure di dovuta diligenza	Risultati	Principali rischi e loro gestione
Governance	a) Sorveglianza c.d.a.		x		
	b) Ruolo della direzione		x		
Strategie	a) Rischi ed opportunità legate al clima				x
	b) Incidenza dei rischi e delle opportunità legate al clima	x			
	c) Resilienza della strategia dell'organizzazione	x			
Gestione dei rischi	a) Processi di individuazione e valutazione				x
	b) Processi di gestione				x
	c) Integrazione nella gestione complessiva dei rischi				x
Metriche e obiettivi	a) Metriche utilizzate				x
	b) Emissioni di GHG			x	
	c) Obiettivi			x	

Fonte: elaborazione da TEG<sup>70</sup><sup>70</sup> Ivi pag. 13

---

Quindi, se da un lato le imprese contribuiscono a rendere uniforme il processo informativo, sviluppandolo attraverso questi 5 punti, dall'altro, le agenzie di *rating* possono sviluppare algoritmi metodologici che abbiano come *driver* di valutazione questi stessi punti. Risulta, quindi, importante che i processi metodologici adottati dalle imprese, e contestualmente dalle agenzie di *rating*, si basino su medesimi *driver* di valutazione, seguendo ovviamente approcci diversi, in relazione alle differenti prospettive. In questo modo, diventa semplice anche per i *raters* fornire un giudizio trasparente e comparabile (come accade per il *rating* di credito).

A fronte dell'analisi condotta nel secondo capitolo nonché delle riflessioni e considerazioni fin qui raggiunte, si propone un approccio integrato, basato sulle nuove linee guida del regolatore europeo in tema di rating e finanza sostenibile (Tabella). Tale approccio è basato su una metodologia *applicant-pay* di tipo *analyst-driven*. Si ritiene, infatti, che tale modello di business nel quale è il soggetto sottoposto al giudizio di *rating* che si fa carico del pagamento, sia più equo, trasparente ed efficiente. In questo modo la valutazione di sostenibilità è diffusa in modo uniforme al mercato evitando di incorrere in fenomeni di asimmetria informativa. La tendenza verso modelli di tipo *applicant-pay* come nel caso del *rating* tradizionale, orienta la metodologia adottata verso l'emaneazione di giudizi di *rating solicited* o *unsolicited* che potrebbe risultare ottimale in un'ottica di processi di regolamentazione unificata anche in prospettiva di una disciplina di vigilanza prudenziale. Come nelle più diffuse metodologie presenti sul mercato, anche in questo caso si propone di considerare una fase intermedia in cui siano elaborati degli *score*, convertiti poi nella fase finale in *rating*.

Dal lato dell'impresa sottoposta a giudizio di *rating*, il tutto si fonda su una nuova aggiornata e dettagliata *disclosure*, che tenga in considerazione quanto stabilito dalla NFRD e che consenta alle agenzie di *rating* di poter disporre di un set informativo trasparente, esaustivo e standardizzato. La *compliance* delle imprese rispetto alla NFRD fornisce un

doppio vantaggio, consentendo un allineamento anche alle raccomandazioni della TCFD in ambito internazionale. Si precisa che, in questa prima fase, si tiene conto soltanto della variabile *Environmental (E)* in considerazione di quanto disposto dalla Commissione Europea.

Il processo di valutazione si suddivide in 5 fasi, corrispondenti ai 5 macroambiti NFRD/TCFD, che consentono di determinare per ogni macro ambito uno score tiene conto in questa prima fase soltanto della variabile “E” ma che può essere facilmente integrato anche con il tema *Social e Governance*:

- 1) Valutazione della sostenibilità del modello di business dell’impresa.
- 2) Valutazione delle variabili di *governance* dell’impresa;
- 3) Comparazione dei risultati pubblicati dall’impresa in termini di *performance* relative al *climate-related risk* rispetto a quanto rilevato dalla valutazione dell’agenzia di rating;
- 4) Valutazione del rischio: l’agenzia di rating provvede ad una valutazione del processo di individuazione e valutazione del rischio *climate related* in capo all’impresa con un impatto rilevante sull’attribuzione del giudizio di rating finale
- 5) Utilizzi dei KPIs: l’agenzia di rating confronta e valuta gli indicatori pubblicati dall’impresa anche in relazione agli indicatori previsti dalla NFRD

La metodologia con la quale si giunge alla definizione del *rating* di sostenibilità deve, quindi, in un primo momento, essere capace di **valutare la sostenibilità del business model dell’impresa** oggetto di analisi, anche in un’ottica *forward looking*, in considerazione della strategia e della pianificazione finanziaria adottate. In quest’ottica, la Dichiarazione Non Finanziaria dell’impresa non dovrebbe trascurare l’influenza delle tematiche ESG all’interno delle *business lines*. A tale scopo, la NFRD ha previsto la possibilità per l’impresa di condurre un test di resilienza del proprio *business model* in

---

merito alla sua sostenibilità di medio/lungo periodo. Inoltre, il processo che conduce alla definizione del *rating* potrebbe prevedere l'elaborazione di uno *stress test* per valutare la resilienza del modello al verificarsi di determinati scenari.<sup>71</sup> Così facendo si creerebbe un doppio livello di *stress test* (interno ed esterno) che consentirebbe di giungere ad una valutazione complessiva delle relazioni tra modello di business, sostenibilità dello stesso nel medio-lungo periodo e influenza delle variabili ESG su di esso. Si ribadisce che la previsione di una fase intermedia in cui vengano sviluppati dei parametri (o score), nei quali sia possibile collocare il soggetto, è essenziale al fine di consentire la conversione di un giudizio qualitativo (come può essere la valutazione del modello di business) in giudizio quantitativo.

Accanto alla valutazione del modello di *business*, così come previsto dalla regolamentazione, in via secondaria l'agenzia di *rating* deve procedere ad uno **studio delle politiche e delle procedure di due diligence adottate** che considerino la solidità dell'approccio societario verso le tematiche ambientali. Le questioni di *governance* di un'impresa sono fondamentali al fine di rendere noto agli *stakeholders* l'approccio dell'impresa verso le tematiche legate al clima. Questi ultimi possono, infatti, essere interessati a conoscere le politiche della società in tema di mitigazione e adattamento ai cambiamenti climatici, così come in generale sulle tematiche legate all'aspetto ambientale. La divulgazione dei processi di *due diligence*, seguendo le linee guida precedentemente riportate, permette, quindi, di conoscere e valutare la capacità dell'impresa di fronteggiare l'insieme dei rischi legati alla sostenibilità ambientale, limitandone l'impatto endogeno ed esogeno (soprattutto a livello finanziario), ed evidenziandone le opportunità che derivano dal *risk management*. Come già evidenziato in precedenza è essenziale che l'impresa individui e sappia gestire i rischi ESG e il loro impatto sui tradizionali rischi finanziari, dal momento che tutte le variabili solitamente definite come non finanziarie hanno sicuramente

---

<sup>71</sup> Si veda quanto riportato in tabella 11.

un impatto diretto ed indiretto dal punto di vista finanziario. Intraprendere nel profondo questo processo comporta la trasformazione del concetto di dichiarazione non finanziaria nel concetto di “dichiarazione extra finanziaria”, parte integrante del bilancio d’esercizio dell’impresa.

Proseguendo nella valutazione della sostenibilità complessiva dell’impresa occorre, inoltre, saper **valutare la solidità e la veridicità dei risultati** raggiunti in tema di sostenibilità anche in considerazione degli obiettivi prefissati. In particolare, la rendicontazione degli *outcome* consente agli investitori di poter valutare la posizione dell’impresa rispetto alle politiche intraprese per la gestione dei rischi e delle opportunità ESG. Questa è la prima parte di un processo di tipo quantitativo che conduce alla valutazione del grado di sostenibilità dell’impresa attraverso indicatori di tipo quantitativo. In quest’ottica, come detto in precedenza, è opportuno che anche i *raters* si dotino di appositi indicatori (basati su *guidelines* della regolamentazione, ma anche di elaborazione interna e di libera espressione) che consentano di valutare la capacità dell’impresa di saper soddisfare i propri obiettivi, anche considerando l’influenza sull’aspetto finanziario. Questo arricchisce la *Sustainable Rating Methodology* di un grado di soggettività che consente comunque di diversificare l’industria del rating oltre che di favorire lo sviluppo dinamico e virtuoso, verso metodologie sempre più aggiornate.

Il principio della doppia rilevanza introdotto dalle Comunicazioni della Commissione 2017/C 215/01 ha fornito un’indicazione chiara al mercato: occorre considerare il tema della sostenibilità, sia dal punto di vista della rilevanza finanziaria che da quello ambientale sociale. È proprio in questo principio che risiede uno degli aspetti cruciali che l’impresa deve tenere in considerazione, alla luce dei riscontri che poi renderà leggibili grazie all’**utilizzo dei KPIs**. L’attività di valutazione da parte delle agenzie di *rating* di sostenibilità, come nel caso del *rating* creditizio, considera rilevante la corretta gestione del rischio, nonché le azioni intraprese alla sua prevenzione e copertura. In questo

---

caso specifico, sarà fondamentale che l'impresa valuti la sua resilienza rispetto ai *climate-related risks* nel breve, medio e lungo periodo. Proprio per questo, l'ultima fase del processo di implementazione della metodologia per la definizione del giudizio di sostenibilità riguarda la valutazione dei rischi e della loro gestione, nonché dei KPIs, in linea con quanto suggerito dalla regolamentazione (rif. NFRD/TCFD). Poiché i rischi e le opportunità legate al clima sono rilevanti per tutte le imprese, qualsiasi esso sia il settore di attività, è necessario che esse si dotino e pubblichino un numero minimo di indicatori di *performance*, ponderati ovviamente rispetto a variabili esogene come ad esempio l'area geografica o il settore di attività. Di seguito sono riportate alcune considerazioni.

Grazie alle indicazioni suggerite dalla regolamentazione fin qui riportate, è importante che esse rendano trasparente e uniforme il *set* informativo e i criteri adottati per la costruzione di tali indicatori, così da agevolare il processo di valutazione esterna da parte dei *raters*. È stato più volte sottolineato in precedenza l'estrema importanza sia per gli investitori che per le altre controparti interessate, di avere una valutazione esterna dei rischi ambientali e climatici dichiarati dall'impresa, un processo non facile, ma per il quale le agenzie di *rating* hanno acquisito negli anni sufficiente *know-how*. È bene chiarire che la valutazione dell'impatto dei rischi ambientali potrebbe differire da quella dichiarata dall'impresa, e quindi portare all'individuazione di diverse criticità. La scelta dell'orizzonte temporale di riferimento è una di queste, la quale è ben diversa da quella intrapresa per la valutazione dei rischi finanziari, senz'altro più breve.

È questo un primo esempio di come, per colmare il *gap* riscontrabile nell'analisi dei dati quantitativi e qualitativi, di grande ausilio può essere l'utilizzo di appositi indicatori di *performance* o KPIs. Essendo dati numerici o percentuali, in questo caso è molto semplice per il valutatore esterno stabilire degli *score* intorno ai quali devono rientrare tali indicatori per essere considerati accettabili dal punto di vista della sostenibilità. Se il processo di costruzione è corretto, viene altresì azzerato il rischio di *greenwashing* ed è



molto semplice all'interno del processo metodologico assegnare un punteggio parziale e totale derivante dallo studio dei KPIs. L'orientamento assunto dalla regolamentazione può rappresentare, quindi, per le agenzie di *rating*, una mappa metodologica per implementare una metodologia di giudizio certificabile, esaustiva e comparabile. L'utilizzo di metodologie chiare, pubblicamente accessibili da parte dei soggetti interessati, e che rispetti le linee guida fornite dalla regolamentazione (in questo caso europea), basata su principi internazionali ampiamente condivisi, aumenta la trasparenza e la veridicità del giudizio di *rating* finale. In questo senso, viene mantenuto un "*institutional approach*" nella valutazione dei vari punti previsti all'interno delle tematiche suggerite dalla regolamentazione.

Nella *review* delle metodologie riportata nel secondo paragrafo, si è visto inoltre che l'utilizzo dei KPIs, fornisce una base di discussione sulle *performance* raggiunte dall'impresa, permettendo anche al valutatore esterno di fornire opportune indicazioni per la risoluzione di eventuali problematiche. Una maggiore armonia tra la *disclosure* ed il *risk management*, nonché dei *driver* presi in considerazione dalle agenzie di *rating*, contribuisce alla creazione di un sistema più solido, trasparente e che integra i fattori ESG, insieme ai loro rischi ed opportunità. La normalizzazione di questi *driver* contribuisce, inoltre, alla riduzione del *gap* riscontrabile in fase di giudizio. Infatti, le valutazioni interne dell'impresa potrebbero differire notevolmente da quelle effettuate dalle varie agenzie di *rating ESG*, le quali potrebbero, a loro volta, differire tra loro. Occorre, infatti, evidenziare che l'industria del *rating* è soggetta ad alcune distorsioni. Una di queste è il *rater effect*, ovvero quell'effetto in base al quale il giudizio positivo su un determinato soggetto sulla base di un determinato indicatore, influenza positivamente, il giudizio positivo su un altro indicatore.<sup>72</sup> Esiste, quindi, un grado di correlazione positiva tra i giudizi espressi dal valutatore. Questo è uno dei principali motivi per il quale un soggetto può ricevere un *rating*

---

<sup>72</sup> MOUNT M.K., SYTSMA M.R., HAZUCHA J.F., HOLT K.E., (1998). Rater-ratee rate effects in developmental performance ratings of managers. *Personnel Psychology*. Disponibile online da: [https://www.researchgate.net/publication/227972179\\_Rater-Ratee\\_Race\\_Effects\\_in\\_Developmental\\_Performance\\_Ratings\\_of\\_Managers](https://www.researchgate.net/publication/227972179_Rater-Ratee_Race_Effects_in_Developmental_Performance_Ratings_of_Managers)

---

completamente diverso da agenzie differenti. L'esistenza di una tassonomia, e di regole comuni, contribuisce, tra l'altro, a fornire un utile punto di partenza per eliminare questa tipologia di distorsione. Di seguito, nella Tabella 6.16, si suggerisce una matrice di raccordo tra NFRD e quindi DNF e *rating* di sostenibilità, utile al raggiungimento di una metodologia di espressione comune delle variabili non finanziarie.

Table 6.16 Non Financial Requirement Directive (TCFD aligned)

Macro ambiti NFRD/TCFD	Impresa	Agenzia di Rating		
		Approccio Applicant Pay - Analyst Driven Rating Process		
<i>Modello aziendale e Strategia</i>	<ul style="list-style-type: none"> <li>Definizione del Modello di Business</li> <li>Descrizione dell'influenza esercitata dai <i>climate-related risk</i> e del loro impatto</li> <li>Analisi di scenario per la valutazione del grado di resilienza e sostenibilità nel m/l periodo</li> </ul>	<ul style="list-style-type: none"> <li>Stress test per la valutazione del Modello di Business: valutazione oggettiva del grado di resilienza del modello sulla base degli scenari previsti dalle Raccomandazioni TCFD</li> </ul>	<b>Business Model Score</b>	<b>Rating di Sostenibilità</b>
<i>Politiche, procedure di due diligence e Governance</i>	<ul style="list-style-type: none"> <li>Politiche societarie e di Governance: impatto delle variabili <i>climate-related</i> in ottica bidimensionale</li> </ul>	<ul style="list-style-type: none"> <li>Processo di valutazione delle variabili <i>climate-related</i>, anche attraverso l'utilizzo di alcuni indicatori di <i>corporate governance</i></li> </ul>	<b>Due Diligence &amp; Policy Score</b>	
<i>Risultati</i>	<ul style="list-style-type: none"> <li>Descrizione dei risultati e delle performance raggiunte in tema di variabili <i>climate-related</i> e andamento delle emissioni di GHG</li> </ul>	<ul style="list-style-type: none"> <li>Comparazione dei risultati comunicati dall'impresa con quelli rilevati dal processo di valutazione interno all'agenzia</li> </ul>	<b>Outcome Score</b>	

<p><i>Principali rischi e loro gestione</i></p>	<ul style="list-style-type: none"> <li>• Adeguata disclosure in ottica bidimensionale: rilevanza finanziaria, ambientale e sociale.</li> <li>• Analisi dei <i>climate-related risks</i> che pendono sull'attività (rischi fisici e di transizione) nonché dell'impatto negativo di tale attività.</li> <li>• Descrizione dei processi di <i>risk management</i></li> <li>• Valutazione e gestione dei rischi finanziari rispetto alle variabili <i>climate-related</i></li> </ul>	<ul style="list-style-type: none"> <li>• Elaborazione dei dati e valutazione del processo di individuazione del grado di rischio e della corretta gestione, individuato mediante modello sviluppato internamente</li> <li>• Attribuzione giudizio di <i>rating</i> in relazione ai <i>climate-related risks</i></li> </ul>	<p><b>Climate-related Risk Score</b></p>	
	<p><i>KPI, metriche e obiettivi</i></p>	<ul style="list-style-type: none"> <li>• Rendicontazione delle <i>performance</i> attraverso i KPI</li> <li>• Utilizzo degli indicatori di <i>performance</i> minimi suggeriti dalla Commissione Europea (Emissioni di GHG, Energia, Prodotti e Servizi, Green Finance, Banche e Imprese di assicurazione)</li> </ul>	<ul style="list-style-type: none"> <li>• Analisi e comparazione dei KPI NFRD aligned rispetto agli standard metodologici elaborati dalle singole agenzie</li> </ul>	<p><b>KPI Score</b></p>
<p>Fonte: elaborazione propria</p>				

## 6.7 Conclusioni

Il presente lavoro contribuisce a mettere in evidenza l'importanza ed il contributo che i *rating* ESG possono fornire al sistema finanziario. In particolare, nella parte introduttiva, oltre ad analizzare le varie metodologie di giudizi ESG esistenti, si è sottolineata l'importanza di sistematizzare le indicazioni provenienti dal legislatore europeo in tema di sostenibilità, con riferimento al sistema finanziario. Non essendo ancora definita la regolamentazione riguardante l'universo ESG, tutto ciò è essenziale, al fine di poter raccordare tali indicazioni con quanto già messo in atto dai fornitori di *rating* operanti sul mercato.

Nella seconda parte, sono state evidenziate delle criticità dei giudizi ESG dovute, principalmente, ad una mancanza di riferimenti a specifici *standard* regolamentari, nonché alle difficoltà di comparazione tra diverse tipologie di indicatori e di approcci utilizzati per il processo di *screening*, *scoring*, e *rating* dei soggetti sottoposti a giudizio. Tale difficoltà è superabile grazie ad un processo di standardizzazione a livello regolamentare, sulla base di quanto previsto dall'*Action Plan*. Infatti, nel quarto e quinto paragrafo, sono stati, infine, evidenziati i fattori chiave su cui è necessario costruire una convergenza tra informativa ESG e metodologie di *rating*. Sono stati evidenziati i fattori chiave per la redazione di una dichiarazione non finanziaria che rispetti la definizione di sostenibilità e che si leghi alla doppia rilevanza tra variabili finanziarie e non, convergendo verso il concetto di dichiarazione extra finanziaria, che non può essere ridotta ad un mero bilancio sociale. In questo modo è stato possibile definire il perimetro lungo il quale le imprese, ma soprattutto le agenzie di *rating* ESG, dovrebbero muoversi al fine di rendere possibile l'emanazione di una regolamentazione condivisa a livello europeo.

Alla luce di quanto detto, per avviare una nuova fase di sostenibilità del sistema finanziario, sarebbe opportuno rendere vincolanti le Comunicazioni integrative alla NFRD,

---

sia dal lato delle imprese (e quindi del mercato) sia di riflesso dal lato dei soggetti valutatori (agenzie di *rating*). Le Comunicazioni della Commissione Europea, che riguardano le informazioni non finanziarie relative al clima, sono senz'altro un ottimo punto di inizio per sperimentare una serie di metodologie e di migliori prassi che l'impresa dovrebbe integrare nelle relazioni societarie, adeguandosi alle politiche Europee sulla sostenibilità. Proseguendo il percorso di regolamentazione in tema di *disclosure* riguardante i singoli fattori E, S, e G, si giungerà ad un unico blocco normativo di riferimento, che conterrà, sia una tassonomia delle attività considerate sostenibili, sia una serie di requisiti minimi per la pubblicazione delle informazioni non finanziarie per ogni fattore ESG, con i relativi indicatori di riferimento. Dall'altro lato, avendo già in cantiere un solido blocco normativo riguardante tutti i requisiti in tema di sostenibilità da adottare da parte delle imprese, sarà possibile anche stabilire delle linee guida per l'elaborazione di *standard* minimi di riferimento per la costruzione di metodologie di *rating* ESG, che diventino comparabili e rilevanti come nel caso dei *rating* di tradizionali. Questo percorso, così come auspicato dalla Commissione, deve, inoltre, proseguire incoraggiando contestualmente le imprese a dotarsi delle migliori prassi per la comunicazione delle informazioni non finanziarie, in considerazione della rapida evoluzione dell'industria ESG. Anche in questo caso, occorre, quindi, che venga svolto un lavoro congiunto tra regolamentazione e imprese, tenendo in considerazione la possibilità di quest'ultime di innovare e perfezionare le proprie metodologie di valutazione dei fattori ESG e del loro impatto sulla loro attività. Il primo passo verso la realizzazione di questo obiettivo è quello di integrare in maniera uniforme le indicazioni della Commissione Europea, incoraggiando le imprese ad integrare le Comunicazioni relative al clima (*climate-related disclosure*), alle relazioni non finanziarie periodiche. Inoltre, esse costituiscono anche degli ottimi *driver* per poter, in futuro, completare l'assolvimento degli obblighi di *disclosure* non finanziaria su tutte le questioni legate al fattore ambientale (E), di cui il clima costituisce solo una parte, e sui fattori "S" e "G". La Tabella 17, che considera in questa prima fase, soltanto la variabile ambientale (E),

di tipo *climate-related*, esprime una base metodologica senz'altro sposabile anche con gli altri due concetti di *governance* e *social*.

Il sistema finanziario, ed in particolare le agenzie di *rating* ESG, avranno tutti gli elementi disponibili per poter affinare le tecniche e le metodologie di *scoring* e di *rating*, convergendo verso quella che anche l'HLEG definisce una *Sustainability Rating Methodology* condivisa a livello europeo. Questa prima fase del percorso è in linea con quanto auspicato dall'Unione Europea nelle strategie di sviluppo sostenibile e di Unione del mercato dei capitali. Infine, per quanto riguarda il comparto bancario e finanziario, il completamento di questa prima fase permette di prendere in considerazione i fattori ESG anche all'interno delle disposizioni di vigilanza, proseguendo un percorso già in parte intrapreso. Secondo Banca d'Italia *"Vi è largo consenso tra i regolatori sul fatto che i rischi derivanti dai fattori ESG non rappresentano una categoria di rischio a sé stante. Va piuttosto individuato l'effetto di tali fattori sulle tradizionali categorie di rischio (di credito, di mercato, operativi). Occorre identificare i relativi meccanismi; prendere in considerazione tanto gli intermediari singoli quanto il sistema finanziario nel suo complesso; valutarne il riflesso sui canali di funding e sui diversi business model."*<sup>73</sup> L'integrazione delle informazioni sui rischi climatici e sui rischi legati ai fattori ESG<sup>74</sup> è già una priorità per il sistema bancario e finanziario europeo, anche in considerazione del fatto che è iniziato un percorso per valutare di integrare i rischi ESG all'interno del processo SREP (*Supervisory Review and Evaluation Process*), diffondendone quindi l'importanza

---

<sup>73</sup> Intervento del Vice Direttore Generale della Banca d'Italia Luigi Federico Signorini. Convegno "Sviluppo sostenibile, finanza e rischio climatico", Roma 3 luglio 2019. Disponibile online da:

<https://www.bancaditalia.it/pubblicazioni/interventi-direttorio/int-dir-2019/signorini-03072019.pdf>

<sup>74</sup> - Rif. Basilea III, "Pillar 3".

- Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012

---

anche a livello di Secondo Pilastro. Proprio in queste fasi, una rinnovata industria del *rating* ESG, sarà determinante nell'assumere quel ruolo occupato dalle agenzie di *rating* tradizionali all'interno di questi processi, allo scopo di contribuire agli adempimenti in materia di Secondo Pilastro.

## References

- Action Plan: Financing Sustainable Growth. European Parliament and European Commission. COM/2018/097 final.
- Annual Impact Investor Survey 2018, GIIN. Disponibile online da: <https://thegiin.org/research/publication/annualsurvey2018>
- AUER B.R., SCHUHMACHER, F., (2016). "Do socially (ir)responsible investments pay? New evidence from international ESG data," *The Quarterly Review of Economics and Finance*, Elsevier, vol. 59(C), pages 51-62.
- BERG F., KOELBEL J.F., RIGOBON R., (2019). *Aggregate Confusion: The Divergence of ESG Ratings*. MIT Sloan School of Management, Working Paper 5822-19. August 15, 2019.
- Commission Recommendation of 9 April 2013 on the use of common methods to measure and communicate the life cycle environmental performance of products and organisations Text with EEA relevance. Disponibile online da: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32013H0179>
- Communication from the Commission 2017/C 215/01 — Guidelines on non-financial reporting (methodology for reporting non-financial information). Disponibile online da: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017XC0705\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017XC0705(01)&from=EN)
- Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings, amending Directive 2006/43/EC of the European Parliament and of the Council and repealing Council Directives 78/660/EEC and 83/349/EEC. Disponibile online da: <https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32013L0034&from=EN>



## 273 Comparing ESG Rating: between new European regulation and the Non Financial Disclosure

---

- Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups, recepita in Italia con D.L. n. 254 del 30/12/2016. Disponibile online da: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32014L0095>
- ESCRIG-OLMEDO, E., MUNOZ-TORRES, M.J., FERNANDEZ-IZQUIERDO, M.A., (2010). "Socially responsible investing: sustainability indices, ESG rating and information provider agencies," International Journal of Sustainable Economy, Inderscience Enterprises Ltd, vol. 2(4), pages 442-461.
- Final Report – Recommendations of the TCFD, Giugno 2017. Disponibile online da: <https://www.fsb-tcf.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf>
- FINCH, N. (2004) International Rating Agencies and Sustainability. Macquarie Graduate School of Management, Project No. 952.
- FRIEDE G., BUSCH T., BASSENV A., (2015). ESG and financial performance: aggregated evidence from more than 2000 empirical studies, Journal of Sustainable Finance & Investment, 5:4, 210-233
- GARCIA, A.S., MENDES-DA-SILVA, W., ORSATO, R.J., (2017). "Sensitive industries produce better ESG performance: Evidence from emerging markets.", Journal of Cleaner Production 150, 135-147
- Greenhouse Gas Protocol Standards. Corporate accounting and Reporting Standards. Disponibile online da: <https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf>. Tale classificazione è quella ampiamente accettata dalla regolamentazione internazionale.
- Guide to Explaining Solicited Ratings Essentials (2018). Disponibile online da: [http://standardethicsrating.eu/images/Documents/3\\_Explaining\\_Solicited\\_Ratings\\_Guide\\_2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/3_Explaining_Solicited_Ratings_Guide_2018_1.pdf)
- Guide to Standard Ethics Rating – Essentials (2018). What are sustainability ratings and how do they work? Disponibile online da: [http://standardethicsrating.eu/images/Documents/1\\_Sustainability\\_Rating\\_definitions\\_Guide\\_2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/1_Sustainability_Rating_definitions_Guide_2018_1.pdf)
- Guide to Standard Ethics Rating Essentials (2018). What are sustainability ratings and how do they work? Disponibile online da:

---

[http://standardethicsrating.eu/images/Documents/1. Sustainability Rating definitions Guide 2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/1. Sustainability Rating definitions Guide 2018_1.pdf)

- Guide to Standard Ethics Scoring Model Essentials (2018). Disponibile online da: [http://standardethicsrating.eu/images/Documents/4. Scoring Model Guide 2018\\_1.pdf](http://standardethicsrating.eu/images/Documents/4. Scoring Model Guide 2018_1.pdf)
- HALBRITTER, G., DORFLEITNER, G., (2015). "The wages of social responsibility – where are they? A critical review of ESG investing," *Review of Financial Economics*, Elsevier, vol. 26(C), pages 25-35.
- HLEG Final Report 2018. Financing a Sustainable European Economy. Disponibile online da: [https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report\\_en.pdf](https://ec.europa.eu/info/sites/info/files/180131-sustainable-finance-final-report_en.pdf)
- <https://www.fsb-tcfd.org/>
- Intervento del Vice Direttore Generale della Banca d'Italia Luigi Federico Signorini. Convegno "Sviluppo sostenibile, finanza e rischio climatico", Roma 3 luglio 2019. Disponibile online da: <https://www.bancaditalia.it/pubblicazioni/interventi-direttorio/int-dir-2019/signorini-03072019.pdf>
- ISO 14064-1:2018 Greenhouse gases - Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals. Disponibile online da: <https://www.iso.org/standard/66453.html>
- KEMPF, A. & OSTHOFF, P. (2007) 'The effect of socially responsible investing on portfolio performance', *European Financial Management*, Vol. 13, No. 5, pp.908–922.
- MOUNT M.K., SYTSMA M.R., HAZUCHA J.F., HOLT K.E., (1998). Rater-ratee rate effects in developmental performance ratings of managers. *Personnel Psychology*. Disponibile online da: [https://www.researchgate.net/publication/227972179\\_Rater%20ratee\\_Race\\_Effects\\_in\\_Developmental\\_Performance\\_Ratings\\_of\\_Managers](https://www.researchgate.net/publication/227972179_Rater%20ratee_Race_Effects_in_Developmental_Performance_Ratings_of_Managers)
- MSCI ESG Research. MSCI ESG Ratings Methodology (2018). Disponibile online da: <https://www.msci.com/documents/10199/123a2b2b-1395-4aa2-a121-ea14de6d708a>
- OLMEDO E.E., FERNANDEZ-IZQUIERDO M.A., FERRERO-FERRERO I., RIVERA-LIRIO J. M., MUÑOZ-TORRES M.J., (2019). Rating the Raters: Evaluating how ESG Rating Agencies Integrate Sustainability Principles. *Sustainability* 2019, 11, 915, [www.mdpi.com/journal/sustainability](http://www.mdpi.com/journal/sustainability).
- Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements

## 275 Comparing ESG Rating: between new European regulation and the Non Financial Disclosure

---

for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012

- S&P Global Ratings – ESG Risk Atlas (2019). Disponibile online da: <https://www.spglobal.com/en/research-insights/articles/navigating-the-esg-risk-atlas>
- S&P Global Ratings – RatingsDirect (2019). The ESG advantage: exploring links to corporate financial performance. Disponibile online da: [https://www.spglobal.com/\\_assets/documents/ratings/the-esg-advantage-exploring-links-to-corporate-financial-performance-april-8-2019.pdf](https://www.spglobal.com/_assets/documents/ratings/the-esg-advantage-exploring-links-to-corporate-financial-performance-april-8-2019.pdf)
- SustainAbility, (2019). Rate the Raters 2019. Expert Survey Results. February 2019. Disponibile online da: <https://sustainability.com/wp-content/uploads/2019/02/SA-RateTheRaters-2019.pdf>
- TEG Report on Benchmarks. Minimum Requirements for Climate Benchmarks and Benchmarks' ESG Disclosures. Disponibile online da: [https://ec.europa.eu/info/publications/sustainable-finance-teg-climate-benchmarks-and-disclosures\\_en#190618](https://ec.europa.eu/info/publications/sustainable-finance-teg-climate-benchmarks-and-disclosures_en#190618)
- TEG Report on Climate-related Disclosure (Gennaio 2019). Disponibile online da: [https://ec.europa.eu/info/sites/info/files/business\\_economy\\_euro/banking\\_and\\_finance/documents/190110-sustainable-finance-teg-report-climate-related-disclosures\\_en.pdf](https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190110-sustainable-finance-teg-report-climate-related-disclosures_en.pdf)
- Thomson Reuters ESG Score (2019). Disponibile online da: [https://www.refinitiv.com/content/dam/marketing/en\\_us/documents/methodology/esg-scores-methodology.pdf](https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scores-methodology.pdf)
- VAN DE VELDE, E., VERMEIR, W., CORTEN, F. (2005) 'Finance and accounting corporate social responsibility and financial performance', *Corporate Governance*, Vol. 5, No. 3, pp.129–138.
- VERHEYDEN, T., ECCLES, R.G., FEINER, A., (2016). "ESG for All? The Impact of ESG Screening on Return, Risk, and Diversification," *Journal of Applied Corporate Finance*, Morgan Stanley, vol. 28(2), pages 47-55, June.

