



Department of Management

Master Thesis in Advanced Corporate Finance

***Islamic Finance: A comparison between conventional and Islamic financial instruments  
and possible investment opportunities in times of financial instability.***

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*Risk comes from not knowing what you are doing*

*[Warren Buffet]*

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## List of Abbreviations

AAOIFI: Accounting and Auditing Organization for Islamic Financial Institutions

AMF: Autorité des marchés financiers

BaFin: Bundesanstalt für Finanzdienstleistungsaufsicht, the German Federal Financial Supervisory Authority

CAGR: Compounded Annual Growth Rate

CDO: Collateralized Debt Obligations

CDS: Credit Default Swap:

Consob: Commissione nazionale per le società e la Borsa, the Italian authority dedicated to investor protection, efficiency, transparency and development of the Italian securities market<sup>1</sup>.

Destatis: Statistisches Bundesamt, the Federal Statistical Office of Germany

DIB: Dubai Islamic Bank

ECB: European Central Bank

ESG: Environmental, Social and Governance

ETF: Exchange Traded Funds

GCC: Gulf Cooperation Council

IBB: Islamic Bank of Britain

ICM: Islamic Capital Market

IFSB: Islamic Financial Services Board

IMF: International Monetary Fund

MENA: Middle East and North Africa

OIC: Organization of Islamic Cooperation

OTC: Over the Counter

PLS: Profit-and-Loss Sharing

RAPM: Risk Adjusted Performance Measure (Modigliani)

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<sup>1</sup> [www.Consob.it](http://www.Consob.it)

SCF: *Shari'ah*-compliant financing

SME: Small and Medium Enterprise

SPV: Special Purpose Vehicle

TEV: Tracking Error Volatility

## Glossary of Arabic Terms

*Faqih*: Islamic jurisprudence experts.

*Fiqh*: the Islamic jurisprudence

*Gharar*: Informational Asymmetry.

*Hadith*: further primary source, it is considered a sort of evidence of the *Sunnah*.

*Halal*: Allowed Activities.

*Haram*: Prohibited activities

*Ibadah*: Islamic rule about the obligatory worship of God.

*Ijarah*: literally “giving something for rent”, it is a contract linked to the concept of “western” leasing.

*Istina*: sales agreement in which the goods are negotiated before they exist physically.

*Maysir*: Gambling.

*Muamalat*: Islamic rules about daily life

*Mudarabah*: PLS like financing contract

*Murabaha*: trade plus mark-up halal financing practice.

*Musharakah*: “pure profit and loss sharing” contract, equity-like investment in which two or more subjects bring together their own risk capital with the aim of carrying out an activity.

*Qura'an*: the central religious text of Islam.

*Riba*: This Arab term is usually translated as “excess” or “increase” but integrated within the Islamic economic context, it is more commonly translated as "usury" because it represents any surplus of money that a debtor is required to pay to his creditor together with the lent amount, as a compensation aimed at paying the loan<sup>2</sup>.

*Salam*: sale contract where the price for the good is paid in advance, at the conclusion of the deal, while the delivery of the purchased good takes place in a future date decided ex-ante.<sup>3</sup>

*Shari'ah*: Islamic Divine Law

*Sukuk*: "certificates of equal value representing undivided shares in the ownership of tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activity"<sup>4</sup>.

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<sup>2</sup> Idda, 2019

<sup>3</sup> AIAF 167, October 2015, ISSN 2280-949X

<sup>4</sup> www.AAOIFI.com



*Sunnah*: literally "well known path", is a primary source of law and represents *Prophet Mohammed* normative behaviour<sup>5</sup>.

*Ulama*: Islamic Theologists.

*Zakat*: this term is usually translated as "doing charity", but its true meaning is payment of a share of their wealth towards the poorest.

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<sup>5</sup> Elasrag, Hussein 2014

## Introduction

Between September and October 2008, after the American house market collapse and the consequent global financial meltdown, the Western World had to face the most serious and delicate crisis in almost a century. One of the reasons behind the financial outbreak crisis was the strong propensity for the financial institutions to make profits acting with speculations and inventions of exotic financial products, like collateralized debt (CDOs) and credit default swaps (CDSs). Because of the utilization of these risky banking activities, they have been identified as responsible for the financial crisis, and their stakeholders put more pressure on the banking industry, resulting in an increase of attention to sustainability<sup>6</sup>. For many investors, the outbreak of the so-called “Great Recession” has been the turning point to take investment choices characterized by an ethical background and with the prospect of supporting sustainable development, intended as a “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”<sup>7</sup>.

In this context of financial turbulence and economic crisis, the attention has been catalysed by a financial system based on moral and ethical principles that had been hit by the financial meltdown much less than the western world, the so-called “Islamic Financial system”, the only example of a financial system directly based on the ethical precepts of a major religion.<sup>8</sup> In fact, Islamic Finance is based on *Shari’ah*, the Islamic law that provides guidelines for several aspects of Muslim life, from religion to politics and from business to legal system aspects<sup>9</sup>. Because of this peculiarity, the aim of Islamic finance is not limited to give investment guidelines, but it also to shape financial and legal practices and instruments consistent with the Islamic Law contained in the *Qur’an*<sup>10</sup>.

If the global financial crisis has brought the big western banks to their knees, even leading to bankruptcy some historical financial institutions like Lehman Brothers, the Islamic banks experienced an unexpected boom<sup>11</sup>. The reason has to be searched in the principles of Islamic law, which made sure that the tools used by Islamic finance were less exposed to the problems of the West ones. In fact, *Shari’ah* establishes three capital principles regarding finance: the proscription of interests (*Riba*), considered a form of usury; the sharing of risks and profits between creditor and debtor (Profit-and-Loss-Sharing Principle-PLS) and the obligation to support all financial transactions on real assets, excluding, at least from a theoretical point of view, the use of derivative products such as those that provoked the crisis in the West.

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<sup>6</sup> Biezen, P. (2009)

<sup>7</sup> World Commission on Environment and Development (WCED, 1987)

<sup>8</sup> Elasrag, Hussein, 09. April 2011

<sup>9</sup> Elasrag Hussein, 2016

<sup>10</sup> The *Qur’an*, the central religious text of Islam.

<sup>11</sup> [www.ilsole24ore.it](http://www.ilsole24ore.it)

According to the precepts of the Qur'an, money is considered a measure of value and must create real value for the participants to the transaction and must not be used as a commodity in on and of itself<sup>12</sup>. Although this system has drawn its attention at the beginning of the “Great Recession”, Islamic finance has been present on the international financial since 1975 when the Dubai Islamic Bank (DIB) was founded. Contrary to expectations, the Dubai Islamic Bank has been such a success that even today it is among the most powerful financial operators in the world, which turn out to be the first national Islamic bank to have become operational and independent worldwide.

The Dubai Islamic Bank proposed itself as the first Islamic international financial institution, whose purpose is the economic development of the associated countries in compliance with the *Shari'ah*. Since that date, the financial world has registered an increasing number of Islamic institutions, carrying out activities with basic economic principles different from the western ones developed by a long tradition and in the late 70s, Islamic Finance reached Europe, with the creation in Luxemburg of the Islamic Finance House, the first Islamic institution in the west. At the basis of the significant development of Islamic finance in the last forty years, there is the increasingly important role played by the Muslim oil-producing states in the Middle East and countries like Malaysia and Indonesia, which have become the main Islamic financial hubs. Moreover, other essential elements for the spreading of Islamic finance have been the growth of Islamic sovereign funds and the spread of Muslim people in western countries, especially in the United Kingdom, Germany, Australia and in the United States.

These factors contributed to make *Shari'ah*-compliant finance an accepted and vibrant element in international financial transactions<sup>13</sup> and nowadays companies and governments are increasingly issuing *Sukuk*<sup>14</sup>, the Islamic financial bonds, whose total outstanding is 466 billion Dollars. Meanwhile, Islamic finance has kept pace with the rapid changes in the market, adopting fintech and digital banking. Although the former is taking Islamic finance to the next level, recent growth is still solidly based on traditional banking services and products.

The Islamic finance industry was estimated to be worth \$2.5 trillion in 2018 and forecast to reach \$3.5 trillion by 2024<sup>15</sup>, thanks to the presence and the action of 1396 Islamic Financial Institutions around the World which assets are estimated to grow at a compounded annual growth rate (CAGR) of 5.5% by 2024 (data from “State of the Global Islamic Economy Report 2019/2020”)<sup>16</sup>.

The idea behind the work is to study the ability of Islamic finance tools to be integrated into a non-Islamic context, despite being based on very stringent religious dictates and to study whether Islamic financial

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<sup>12</sup> Elasrag, Hussein 09. April 2011, Munich Personal RePec Archive.

<sup>13</sup> Elasrag, Hussein, 09. April 2011, Munich Personal RePec Archive.

<sup>14</sup> *Sukuk* is the plural form of *Sakk*.

<sup>15</sup> State of the Global Islamic Economy Report 2019/2020, DinarStandard.

<sup>16</sup> State of the Global Islamic Economy Report 2019/2020, DinarStandard

instruments can offer good investments and financing opportunities in a situation of financial volatility such as the 2008 global financial meltdown and the “corona-virus outbreak recession” of early 2020. After analysing the characteristics of Islamic finance and the financial instruments that characterize it, the work will be focused on the analysis of a case study. The case study will compare the performance of a portfolio made up of conventional instruments, bonds, and an Islamic portfolio made up of "*Sukuk*", the Islamic bond instrument.

In the first chapter, after analysing the historical features and the distinctive characteristics underlying this system, the work will be focused on the description of the main elements of prohibition related to it, such as the prohibition of *Riba*, as well as the critical implications that has one of the five pillars of the Islamic religion, the *Zakat*, that is the annual tax imposed on each Muslim to help the less wealthy faithful. In the end, the importance of the role of money within this peculiar economic context will be faced, analysing its connection with the theological and social sphere in which it develops.

In the second chapter, the attention will be shifted on the major investment and financial contracts and products built following with the Koranic law that are already widespread among current bank agents, and on the financial instruments currently available in investments on regulated secondary markets. Among all, the emphasis will be on the bond instrument (*Sukuk*) because of its strong assimilability to the existing traditional bonds traded on regulated markets.

The third chapter will be characterized by the analysis of how Islamic finance developed in the last years, its possible future scenarios and how it developed in the western countries, in particular in the United Kingdom, the central hub of Islamic finance in the western world, in Germany, with particular focus on the issue of *Sukuk* by the Saxony-Anhalt land, Luxemburg, France and Italy.

In the end, a case study will be analysed, with the aim of comparing the performances of a financial portfolio composed entirely of Islamic *Sukuk* and a financial portfolio composed of bonds belonging to the euro area. The starting point of the analysis will be a comparison of how the two systems react to financial instability, comparing the system's reaction to the 2008 financial crisis and 2020's one with an indices analysis. A portfolio analysis will then be carried on, building an Islamic portfolio and a conventional one and comparing them through the study of performance indicators in a period of intense financial instability.

The final aim is to show how the Islamic financial product can represent a serious investment alternative for investors who have not a high-risk appetite and how the Islamic financial system, thanks to its intrinsic characteristic, can create a new frontier for investments and financing.

# 1. The Islamic Model

## 1.1 *Shari'ah* and Islamic Finance

The Islamic economic model has its peculiarity in its foundation: *Shari'ah*, the Divine Law of Islam in its metaphysical and pragmatism form, which has as its main sources the *Qur'an*, the *Sunnah and Hadith* (sayings) of the Prophet Mohammed<sup>17</sup> and that prescribes guidelines for several aspects of Muslim life, including religion, politics, economics, banking, business and law. It can be divided into two typologies of rules: one related to the obligatory worship of God (*ibadah*) and the other related to daily life (*muamalat*), that includes also commercial and financial dealings intended as moral economic transactions<sup>18</sup>.

The *Qur'an* is the Holy Book of Islam and represents the message intended for every man on earth and revealed by Allāh to the Prophet Muhammad through the Archangel Gabriel in the period from 610 to 632 AD, the year of Muhammad's death.

*Sunnah*, that literally means "well known path", is a primary source of law and comprises the traditions or known practices of Prophet Mohammed<sup>19</sup> and represents Prophet's normative behaviour.

*Hadith* is a further primary source and it is considered a sort of evidence of the *Sunnah*. The extent to which *sunnah* is derived or differentiated from *hadith* depends on the context and school of thought being considered<sup>20</sup>.

In the analysis of religious sources, a central role is covered by *Fiqh*, the Islamic jurisprudence, which allows an appropriate reading and a correct interpretation of the divine will. It is "knowledge of the practical regulations and rules of the *Shari'ah* acquired by reference to and detailed study of the sources"<sup>21</sup>. In addition to these primary sources, there are also secondary sources that have the aim to deal with matters on which *Qur'an* and *Sunnah* are silent. These sources are *qiyas* and *ijmah* and are based on individual reasoning<sup>22</sup>.

The nature of the Divine Law therefore means that religion has a very strong impact on the life of Muslims and, consequently, even economic behaviour cannot be separated from the religious dictates that govern it, thus making the Islamic economic system a market economy based on strong moral values<sup>23</sup>. Inter alia, this system is characterized by the principles of cooperation, in the sense that an economic exchange must be beneficial for both the parts involved, and responsibility, that means a person's reward must be based on his efforts. The presence of this principles as a dogma in the economic system, means that, for example both

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<sup>17</sup> Islāhī, a.a. (1989)

<sup>18</sup> Abu-Tapanjeh, A.M., (2009)

<sup>19</sup> Salah, O. (2010)

<sup>20</sup> Elasrag Hussein April 2011

<sup>21</sup> Salah, O. (2010)

<sup>22</sup> Younis, 2012

<sup>23</sup> Elasrag Hussein April 2011

monopolism, exploitation and gambling are forbidden. The belief that the economic system is permeated with values of divine derivation and that Allah himself created this world with the aim of satisfying the needs of all people, led to the creation of an economic system characterized by a "win / win framework"<sup>24</sup> where one person can succeed without necessarily create a loss for others.

Therefore, in this context, Islamic financial institutions operate according to the principles on which the Islamic economic system is based, providing financial services and products according to the principal of human benefit dictated by *Shari'ah*. For these reasons Muslims around the world have had a moral restriction from making use of traditional financial instruments, which do not totally respect the Islamic moral principles. This situation faced a change when Islamic finance began its raise in the 70s. From that moment on Islamic finance began to offer a different concept from the conventional banking system<sup>25</sup>, with the creation of instruments and product guided by the *Shari'ah*, which dictates the distinction between what is right and what is wrong and what is permissible and what is not.<sup>26</sup> Therefore, Islamic finance is defined as a banking concept that satisfies the divine law in both form and spirit<sup>27</sup> and as a consequence, an Islamic bank is a financial institution that respect the rules imposed by *Shari'ah* and financial practices that conform to Islamic law<sup>28</sup> are defined as *Shari'ah-compliant financing* (SCF).

Until the 1970s Islamic finance has been based on very simple financial transactions and based primarily on trust between the two sides of the transaction. An example of these transactions is *hawala*, a money transfer without money movement.<sup>29</sup> The context changed radically in 1970 due to the foundation of the Islamic Development Bank (IDB), which had the primary purpose of "promoting the economic development and social progress of Muslim communities in accordance with the principles of Sharia"<sup>30</sup>. The general objective was to adapt the banking system and the financial system to a context of globalization from which the Islamic financial world could not remain excluded. The creation of the Islamic Development Bank was therefore the first revolutionary step to try to combine professional financial activity with religious principles dictated by the "Divine Law".

Nowadays, many Islamic countries claim that the religious sources of *Shari'ah* are the main sources of their law but in the meantime they have built a hybrid legal systems that mix norms inspired by the tradition of Islamic law with norms typical of common law and civil law. An example can be found in Malaysia, Bahrain, Pakistan and United Arab Emirates<sup>31</sup>. These countries have a "dual economic and civil system": civil law is anchored in *Shari'ah*, while commercial law follows the rules and practices of international trade. These

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<sup>24</sup> Elasrag Hussein, 09. April 2011

<sup>25</sup> Abd Hakim Abd Razak, April 2015

<sup>26</sup> Abd Hakim Abd Razak1, School of Law, Trinity College

<sup>27</sup> al-Ukhuwwa, I. and R. Levy, 1938.

<sup>28</sup> Elasrag Hussein, April 2011

<sup>29</sup> JOST, P. M., & SANDHU, H. S. (2000).

<sup>30</sup> IDB Annual Report 2018

<sup>31</sup> Alvaro, CONSOB (2014)

differences, in particular for what concern the regulation of the economic system, are the result of the complexity in the identification of the set of rules that oversee some subjects, due to the fact that only the 3% of the verses present in the Qur'an has a real regulatory content and that they are often not easy to interpret<sup>32</sup>.

## 1.2 *Shari'ah* principles and prohibitions relevant to finance

The fundamental assumption on which the Islamic financial and economic system is based is that money cannot be used to create other money, or in other words, it cannot be considered and used as an instrument of earning. This characteristic of the Islamic financial system is the point of origin of all the other theological aspects that influence its functioning.

As previously mentioned, the principles of *Shari'ah* can be divided into two typologies: *ibadah* and *muamalat*. In the latter, which deals with economics activities, actions are divided in *haram*, that is forbidden acts, and *halal*, that is permissible acts. Moreover, *muamalat* also defines *zakat*, that is the moral obligation that every Muslim has of giving charity. Later in this chapter, we will proceed to the description of key *Shari'ah* principles and prohibitions relevant to finance.

### 1.2.1 Prohibition of interest: *Riba*

The *Qur'an* defines the "Prohibition of *Riba*". This Arab term is usually translated as "excess" or "increase" but integrated within the Islamic economic context, it is more commonly translated as "usury" because it represents any surplus of money that a debtor is required to pay to his creditor together with the lent amount, as a compensation aimed at paying the loan<sup>33</sup>. *Riba* are generally divided into two typologies: *Riba al-fadl* and *Riba al-naseeyah*. The former refers to an increase or excess paid in a direct exchange of commodities<sup>34</sup>, which Sunna states must be repaid with the same goods and to the same extent. The latter refers to the interest applied to an economic loan and agreed upon when it was granted. The interest, therefore, will aim to repay the creditor for the time in which he deprived himself of his money, thus representing a practice absolutely prohibited by Islamic law.

This definitions are more in line with the well-known notion of interest but according to the Islamic Law the concept of making money from money without effort is *haram*<sup>35</sup>, and consequently, not permissible as the *Qur'an* states "That is because they say, "Trade is [just] like interest." But Allah has permitted trade and has forbidden interest"<sup>36</sup>. Starting from that, several theologians states that the increase in wealth is compliant with *Shari'ah* only if inserted in a real productive context, that is, only if real growth generates profit and not the

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<sup>32</sup> S. GOITIEN

<sup>33</sup> Idda, 2019

<sup>34</sup> Salah, 2010

<sup>35</sup> Ahmad, I. (1996)

<sup>36</sup> *Qur'an, Sure (2:275)*

expectation of an unjustified remuneration, capable of flowing into the sphere of monetary speculation. In fact, the gaining of allowed profits determined ex post is the consequence of successful economic action which result is an increase of wealth while interest, that is determined ex ante, is a cost that is accrued regardless of the outcome of the activity transactions and cannot create wealth in the event of corporate losses<sup>37</sup>.

This prohibition is also attributable to the negative equity and distributive justice effects<sup>38</sup>. In fact, Islam promote social justice according to which the two sides of a financial transaction have the obligation to share premiums and losses and that the process of accumulation of wealth must be representative of productivity and since *Riba* does not care this concern it is prohibited<sup>39</sup>. Under the Islamic Law therefore, it is not allowed the passive return of money and it is not recognized its temporal value.

As a result it is not allowed to make money by lending it but it is only allowed to earn a return from investments in allowed commercial activities, taking into account the Profit-and-Loss-Sharing principle, in absence of which the contractual illegality would be incurred. The existence of such principle implies that all profits and losses are shared and the risk is equally distributed coherently with the capital quota conferred<sup>40</sup> and consequently in the Islamic financial system the profit sharing ratio is the fixed, not the rate of return<sup>41</sup>.

### 1.2.2 Prohibition of informational asymmetry: *Gharar*

Certainty and absence of risk or hazard are fundamental elements in the Islamic financial system. Unlike the ban on *Riba*, *Gharar* is not defined precisely by the Qur'an or the Sunna. One of the most important aspect of the Islamic context is that there must be no uncertainty in every commercial transaction or contract. This mechanism implies that involved parties are encouraged to obtain “perfect knowledge” of the counter values of the object before committing to a contract as far as that is possible. Consequently, in the Islamic financial system, every profitable result or effort should not be dependent on luck. Another consequence on the prohibition of *Gharar* is that the those who in a traditional system could be more vulnerable because less informed, are protected from exploitation<sup>42</sup>.

Despite the importance of prohibiting information asymmetry, while *Riba* is absolutely forbidden, a certain degree of *Gharar* remains acceptable and it is prohibited only in conditions of complete uncertainty. Minor *Gharar* is permitted where the contract is charitable, the uncertainty is slight, or there is a public need for the transaction<sup>43</sup>. Therefore, all those contracts that are based on future events in which the object does not exist

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<sup>37</sup> The Fundamentals of Islamic Banking and Finance: A Prologue Abd Hakim Abd Razak1, School of Law, Trinity College

<sup>38</sup> Khan (1986)

<sup>39</sup> El-Gamal, 2000

<sup>40</sup> Akyol, 2008

<sup>41</sup> Akyol, 2008

<sup>42</sup> Akyol, 2008

<sup>43</sup> Abdullah and Chee, 2010



yet at the time of their stipulation are not allowed unless there is a guarantee of their existence on the date established for delivery.

An example of contracts not foreseen by the Islamic system for the prohibition of *Gharar* are conventional insurance contracts. They are not allowed by *Shari'ah* because it doesn't exist certainty neither about payment and about the occurrence of the insured event.

In the context of Islamic Finance, as Elasrag Hussein (2011) states in his study, examples of *Gharar* are:

- Advising a customer to buy shares of a company that is subject to a takeover bid, expecting that its share price can rise.
- Buying a real estate good the price of which is to be specified in the future.
- When the subject matter or specifications to a contract are unknown.
- Deferred payment under a contract where the deferment is for an unknown period.

### 1.2.3 *Maysir*: Prohibition of speculation and gambling

Under the law of *Shari'ah* it is forbidden both to gain a profit from speculation and gambling. *Maysir* has several elements in common with *Gharar*. In fact, at the basis of speculation and gambling there is information asymmetry and moral hazard. As a general law, therefore, the exercise of activities involving asymmetric information and excess of uncertainty or risk, in full compliance with the prohibition of *Gharar*, is prohibited. However, if the *Maysir* has elements of *Gharar*, it is not possible to say the opposite because the *Maysir* is always prohibited without any derogation, like the *Riba* and unlike the *Gharar*.

The reason for this absolute ban is to be found in social reasons because gambling is considered something that lead men to ruin. This sentiment This feeling is well expressed in the *Qur'an*:

*“O’ you who truly believe wine, gambling, idolatrous stones, divination arrows are unclean works of Satan. Avoid them for you to thrive. In truth, with wine and gambling, Satan wants to sow enmity and hatred among you and move you away from the memory of Allah and from prayer ”* <sup>44</sup>.

The effect of this strong prohibition inevitably reflects on finance, particularly on the financial insurance contracts. In fact, derivative instruments like swaps and futures are entirely based on the probability of an uncertain future event to happen and, under the Divine Islamic Law, these instruments are comparable to a gambling practice and for that reason are forbidden.

This prohibition could affect even the use of the equity instrument, because *Shari'ah* is open to interpretations about *Maysir* for what concern the difference between prohibited speculation and legitimate commercial speculation. In fact, the latter is not always clear in practice and there are cases where it can be difficult to

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<sup>44</sup> *Qur'an, Sura (90-91)*

distinguish between the two<sup>45</sup>. For instance, it is generally accepted to make an equity investment in a company but, depending on the duration of the investment and on the reason of the gain, it could be forbidden. From this point of view, it is possible to identify the equity investment as a sort of “grey area”.

#### 1.2.4 Prohibition of investing in *Haram* activities

Muslims have the absolute prohibition to invest in and take profit or every form of benefits from activities not allowed by *Shari'ah*. The reason is that, according to the principle of the Islamic Divine Law, every ethically incorrect economic activity will cause tremendous social problems, from the creation of iniquity to the corruption of human soul. Therefore, it is not possible to invest in activity like breweries, alcohol, pornography or in pork products, but every activity that create a benefit for an investor has to be *halal*. The main aftermath of this strict interpretation is that Muslims would not be able to invest in a wide range of western businesses. Therefore, to offer Muslims to expand their possibility of investing in Western business activities without violating Islamic Law, in the last years several scholars and theologists have considered the possibility for Muslims to invest in such kind of activities which are not entirely *Shari'ah* compliant at some conditions. According to Hussein (2011) , some of these conditions are that the principal business activity must be permissible under *Shari'ah*, possible income from prohibited activities must be a very small percentage of the overall income and that the debt of the company must be limited.

#### 1.2.5 *Zakat*: Imperative of doing charity

The Arab term *Zakat* is usually translated as “doing charity”, but its true meaning is payment of a share of their wealth towards the poorest. *Zakat* has a purifying significance, as the *Qur'an* states:

*“Take alms on their goods to purify and cleanse them”*<sup>46</sup>.

The role of *Zakat* finds an extreme importance from a social point of view. In fact, the existence of this contribution makes possible to avoid the centralization of the surplus of money in the hands of a few. In that way the contribution itself can be considered a useful tool, not only for the purification of the sins of the individual faithful, but as a mechanism useful to eradicate the egoism of the whole society through the exercise of a work of altruism.

Therefore. the *Zakat* is as an element of fundamental importance for the harmonious development of society in the Islamic context, in which social justice and solidarity are considered rule of civil life. This act of “purification” discourages the accumulation of wealth by a small percentage of society and the development of social resentment by the weaker part of the society.

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<sup>45</sup> Elasrag, Hussein, 09. April 2011

<sup>46</sup> Qur'an, Sure IX:103

### 1.3 How money is considered in Islam

The role of money is what most differentiate Islamic finance from “traditional finance”, in which money represents a real commodity and for that reason can be object of sale and speculation. Therefore, this system is based on the “time value of money”, the theory that give origin to interest rate principle. On the contrary in the Islamic system *Shari’ah* identify money as a simple a unit of account and vehicle of exchange for purchasing real goods or services and not as a reserve of wealth in order that can increase its value over the time. In this sense traditional finance is completely opposite to Islamic principles, in which money and commodity have two different roles and consequently they are threatred in different ways.

First of all, according to *Shari’ah* principles money has no fundamental value. While other commodities are held for trade purposes, money’s use has been restricted to its basic purpose. Secondly, as mentioned above, *Shari’ah* forbid the use of money to create other money and consequently forbid *Riba*. If in case of exceptional reasons, if money has to be exchanged for money or if it is borrowed, the payment on both sides must be equal, so that it is not used for the purpose it is not meant<sup>47</sup>.

In conclusion, money is considered like a sort of "potential" capital that becomes actual only after it makes possible the creation of a productive activity. Islam recognizes the time value of money, but only when it acts as capital, not when it is "potential" capital<sup>48</sup>.

### 1.4 The Interpretation of *Shari’ah* Principles

In Islamic countries instead of a central authority with the role of imposing a single dogma on the various local communities, there are four different Sunni legal schools and a multiplicity of jurisprudential interpretations and practice. This aspect could be a threat to the expansion of Islamic finance and for that reason, starting from the nineties, the main Islamic financial institutions created several international bodies with the aim to act as a “standard-setter”<sup>49</sup>. The two most important bodies are:

- the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI): based in Bahrain, its aim is to identify and to interpret recommendations for financial institutions in accounting and audit<sup>50</sup>.

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<sup>47</sup> Elasrag, Hussein, 09. April 2011

<sup>48</sup> Elasrag, Hussein, 09. April 2011

<sup>49</sup> Alvaro, Consob (2014)

<sup>50</sup> www.AAOFI.com

- the Islamic Financial Services Board (IFSB): based in Malaysia, its institutional purpose is issuing recommendations and guiding principles for Islamic financial institutions in the banking, insurance and financial sectors.<sup>51</sup>

Together with these two important institutions, a fundamental role in the Islamic financial system is covered by the “*Shari'ah* Supervisory Board”, that is a corporate council that every Islamic financial institution must compulsorily have. Its role is to ensure that the activities of the firm itself and the contracts, products, services, and operations stipulated, offered and structured, comply with *Shari'ah* from a religious point of view and to the indications provided by the international standard setters. “*Shari'ah* Supervisory Boards” are composed by *faqih*<sup>52</sup> and *ulama*<sup>53</sup>, experts who operate independently while availing themselves of the advice of financial experts and have four main functions<sup>54</sup>:

- To give certification of *Shari'ah* compliance of products made by the company.
- To make control operations over compliance by the company with religious rules.
- To carry out Audit activities.
- To give advice to management.

Another important role of this board is to guide Islamic markets on the compliance of certain products and services concerning Islamic Law through a work between various financial institutions to operate a financial engineering process on traditional financial products to adapt them to Islamic criteria.

The aim of that operation is to receive the certification of the validity of a new financial instrument by AAOIFI, IFSB and some Central Banks thus reaching an official standardization.

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<sup>51</sup> IFSB.org

<sup>52</sup> Literally, “jurisprudence experts”

<sup>53</sup> Literally, “theologians”

<sup>54</sup> Alvaro, Consob (2014)

## 2 Islamic Financial Instruments

According to Hussain, Shahmoradi and Turk (2015) and according to the International Monetary Fund (2015) the Islamic *halal* finance products are contract-based and may be classified into three broad categories:

- Debt-like Financing
- Profit-and-loss-sharing-like financing
- Services

In these categories there are basic contracts, created to carry out simple purchase and sale operations, rather than financing an activity in compliance with the *Shari'ah*, that are at the basis of more complex transactions typical of the insurance market and of the financial market.

Lately in this chapter the main contracts the main contracts belonging to these categories will be discussed.

The second part of this chapter will be dedicated to the description and the analysis of the most important Islamic financial market products: stocks, Islamic Mutual Funds and ETF<sup>55</sup>, derivatives and *Sukuk*.

### 2.1 Debt-Like Financing

The most important contracts of this category are *Murabaha*, *Istina*, *Salam* and *Ijarah*. Although these contracts seem to have some aspects in common with western interest-based ones, they are based upon a completely different system. In fact, their typical aspects, like the mark-up financing, make them *Shari'ah* compliant products and tools cannot not be considered as substitutes for interest-based ones, because the underlying ratio is completely different. Moreover, it is necessary to consider that, according to the precepts of *Shari'ah*, for every contracts or product or action undertaken it is fundamental the concept of intention, which is a constraint for every Muslim<sup>56</sup>.

#### 2.1.1 *Murabaha*

*Murabaha* is a trade plus mark-up halal financing practice. It is one of the most widely used instruments for short-term financing in Islamic finance<sup>57</sup>.

The mechanism of this contract is based on the traditional notion of purchase finance. As described in the Picture 1.1 below, when a purchaser needs financing in order to buy a good, the financier, usually a bank, purchases the good from the producer and then resells the good to the purchaser at the original price plus an agreed mark-up, which depends on the type of good, on the transaction size and on the customer's

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<sup>55</sup> Exchange Traded Funds

<sup>56</sup> Schacht (1995)

<sup>57</sup> Alasrag, Hussien, 2010

credit rating<sup>58</sup>. The good is delivered immediately while the payment can also be deferred. An important characteristic of that instruments is that the seller informs the buyer about the cost of acquiring the specified product and the profit margin is negotiated between them<sup>59</sup> ex-ante.

With this system the financier plays not only a lending function but also takes on the risk of the transaction<sup>60</sup>. In fact, he is exposed at the risk to remain with the ownership of the traded good if the purchaser deletes the buying or if the good does not meet the original conditions. From an operative point of view *Murabaha* contracts can act as a surrogate for mortgage financing, but with the strong difference due to the presence of the obligation of having ownership of the good to trade.



Figure 1: The structure of a *Murabaha* contract, Gatti Stefano, (2018)

In order to be *Shari'ah*-Compliant *Murabaha*, according to several scholars<sup>61</sup>, has to respect some requirements:

- The good must exist at the time of the sale
- The bank should be in ownership of the good in the moment of the selling
- The cost price must be known and declared to the customer ex ante
- The time of payment and the time of delivery of the good must be specified

### 2.1.2 *Salam and Istina*

*Salam* and *Istina* are the two financial instruments that represents the exceptions to the Islamic principle of the prohibition of informational asymmetry known as *Gharar*.

Starting from *Salam*, it is a sale contract where the price for the good is paid in advance, at the conclusion of the deal, while the delivery of the purchased good takes place in a future date decided ex-ante<sup>62</sup>. The gain for the financier, like in western forward and futures contracts, is the difference between the agreed price and the market price of the same goods<sup>63</sup>.

This instrument can be comparable to futures contracts in conventional finance because both *Salam* and futures have the same mechanism of delivery. However, there is a strong difference between them:

<sup>58</sup> Zaher and Hassan, 2001

<sup>59</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

<sup>60</sup> Gatti Stefano, *Project Finance in Theory and Practice* (Third Edition), Academic Press, 2018

<sup>61</sup> Aykol, 2008

<sup>62</sup> AIAF 167, October 2015, ISSN 2280-949X

<sup>63</sup> Gatti Stefano, *Project Finance in Theory and Practice* (Third Edition), Academic Press, 2018

with a *Salam* contract the price of the specified good is paid in advance at the conclusion of the deal, while with a future contract that does not happen.

Moreover, *Salam* respect *Shari'ah* principles. Firstly, Islamic law permits only goods and not money to be the subject of a *Salam* contract<sup>64</sup>. Secondly, it is not possible to sell a *Salam* to other parties making benefit from market changes, but it is only possible for the parties to reach an agreement if one of them is suffering great losses. Another important aspect of *Salam* is that the good can be sold in advance only if certain characteristics of quality and quantity are decided between the parties.

Furthermore, this instrument is usually used for the raw materials market, while it is not possible to use it for the real estate transactions because the good must be tangible at the time of the agreement.



Figure 2: The structure of a *Salam* contract Gatti Stefano, (2018)

For what concern *Istina*, it is a sales agreement in which the goods are negotiated before they exist physically. Therefore, the buyer orders to a supplier the production of a specific asset, establishing its characteristics, price and payment methods, since, differently from *Salam*, it is not required in advance. Another difference with the *Salam* contract is that delivery must not happen at the contract creation but it is possible to make the delivery within an established period, with a penalty in case of delay. Each party has the right to withdraw from the contract before the production work starts while the manufacturer has a moral obligation to supply the good respecting the agreement. Therefore, because of their own nature, *Istisna* contracts adapt very well to the financing of work in progress linked to the development of infrastructure projects.

### 2.1.3 *Ijarah*

*Ijarah*, which literally means “giving something for rent”, is a contract linked to the concept of “western” leasing. In its pure definition this typology of contracts can be compared to “operative leasing”. In fact, it is based on the split between ownership and possession: the user (*lessee*) agree to pay a scheduled monthly lease payment to the financer (*lessor*), which have the responsibility of the maintenance of the asset because he is recognized as the owner. The present value of the sum of the lease payments is equal to the purchase value of the asset plus a mark-up applied as remuneration for the risk linked to the ownership of the asset<sup>65</sup>. At the end of the leasing period the user has the option to buy the asset at nominal value<sup>66</sup>. Alternatively, it is possible to use the other form of *Ijarah*, that correspond to a conventional financial leasing: *ijarah wa-iqtina*.

<sup>64</sup> Akyol, 2008

<sup>65</sup> Porzio 2009

<sup>66</sup> Al-Omar & Abdel-Haq, 1996

The customer pays rent together with a monthly payment in order to take over a portion of the asset, reducing the share of ownership of the bank the customer becomes the only owner of the asset<sup>67</sup>. Both the typologies of *Ijarah* have to respect several conditions in order to comply with the principle of *Shari'ah*:

- The asset should have a long productive life.
- Because of the prohibition of *Gharar*, any speculation must be avoided by agreeing on the lease payments at the time of contract<sup>68</sup>
- Because of the prohibition of *Riba*, it is not allowed any payment that exceed the principal amount, unless this portion will end in *Zakat*.

## 2.2 Profit-and-Loss-Sharing-Like-Financing

The aim of the Profit and Loss Sharing Principle is trying to establish a fair society in which usury and interest are not contemplated and in which social justice can be achieved. In fact, according to PLS Principle, in Islamic Finance the rate of return of financial assets can be determined only at the end of the transaction and it is not possible to make it fixed in advance. The lender has a right to reward, but this compensation should be proportionate with the risk involved, which cannot be fully known in advance<sup>69</sup>, in spite of what happen in most of conventional finance contracts. According to *Shari'ah*, only taking a risk can justify a predetermined form of positive economic return, and for that reason the lender will earn a fixed return, because he is carrying on the risk of default. As mentioned in previous chapter, the existence of such principle implies that all profits and losses are shared and the risk is equally spread in accordance with the capital conferred, creating a system in which the profit sharing ratio is the fixed and the rate of return is not.

Within Islamic Finance, the PLS principle is expressed through two financial instruments: *Mudarabah* and *Musharakah*. These instruments take a further importance because they are shaped for exploit the risk-taking attitude of an entrepreneur. According to several scholars, the PLS financing mode can be useful to create and help a class of entrepreneurs in emerging countries like most of Islamic countries are. The reasons, according to Tariqullah Khan are that PLS financing<sup>70</sup>:

- Spread the risk of projects between the entrepreneur and the financier, thus encouraging entrepreneurial activities.<sup>71</sup>
- Does not require collateral ensuring access to funds only based on financial merit of projects<sup>72</sup>.

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<sup>67</sup> Akyol, (2008)

<sup>68</sup> Zaher and Hassan, 2001.

<sup>69</sup> Younis, 2012

<sup>70</sup> Tariqullah Khan

<sup>71</sup> Tariqullah Khan

<sup>72</sup> Tariqullah Khan



On the other hand, Debt-Like financing concentrates the burden of risk on the entrepreneur side presenting a stronger lack for the aspects of risk spreading compared to PLS financing.

### 2.2.1 *Mudarabah*

The *Mudarabah* is a PLS like financing contract that, according to IMF scholars, belongs to the “profit-sharing and loss-bearing” financing modality, whereby the financier (investor, bank) provides capital and the beneficiary provides labor and skills<sup>73</sup>. For that reasons it has similarities with the “conventional” limited partnership agreement. *Mudarabah* involves two actors: the financier, called *Rabb al-mal*, that entrusts money to the other part called *Mudarib*<sup>74</sup>, the entrepreneur or labor partner. The lender provides the capital, while the entrepreneur brings his experience and know-how with the objective to gain a profitable return from the investment, without demanding any compensation for the concrete management of the operation. The profits made are shared between the two subjects according to a proportion established ex ante, at the time of the conclusion of the contract, while losses would be borne by the financier who does not have the right to interfere in the management of the financed operation, unless negligence, misconduct, or breach of contract can be proven.<sup>75</sup> In addition to the principle that the providers and users of capital should share risks and rewards, all *Mudarabah* transactions follow two main rules: the division of profits between the two parties must necessarily be on a proportional basis and cannot be a lump sum or guaranteed return<sup>76</sup> and *Rabb al-mal* is not responsible for losses beyond the capital provided and *Mudarib* is responsible for its efforts in terms of time and work, in contrast with conventional finance in which entrepreneur have to bear all losses. Because of these aspects, *Mudarabah* are considered high risk contracts and, therefore, in addition to being assimilated to the limited partnership agreement, many scholars compare them to an investment fund in which managers handle a pool of funds. In fact, in this case the agent-manager has limited liability and the capital is invested in broadly defined activities, and the terms of profit and risk sharing are customized for each investment<sup>77</sup>.

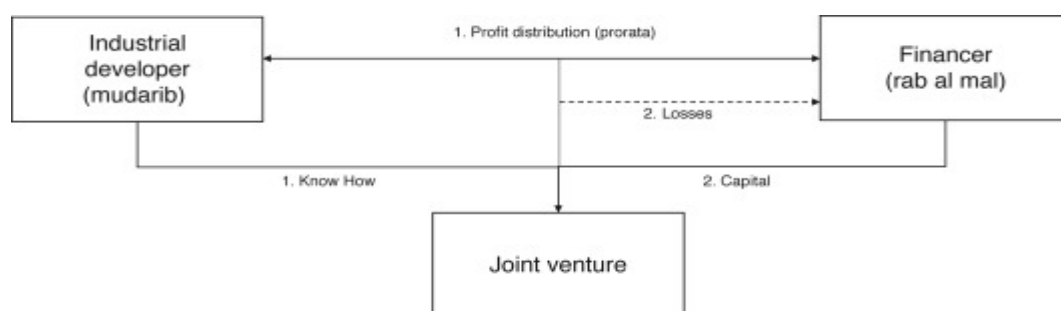


Figure 3 The structure of a Mudarabah contract. Gatti Stefano, (2018)

<sup>73</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

<sup>74</sup> Elasrag, Hussein, 09. April 2011

<sup>75</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

<sup>76</sup> Elasrag, Hussein, 09. April 2011

<sup>77</sup> Elasrag, Hussein, 09. April 2011

## 2.2.2 *Musharakah*

IMF scholars classify *Musharakah* as a “pure profit and loss sharing” contract. This particular contract can be explained as an equity-like investment in which two or more subjects bring together their own risk capital with the aim of carrying out an activity.

As showed in the picture 2.4 below, both parties of the operation, that is the entrepreneur or industrial developer and the financier, contribute to the capital of the operation, in a mechanism comparable to the western “Joint Venture” or “Project financing”. The proportion of the investment are agreed in advance and the profit and loss distribution is regulated *pro rata*<sup>78</sup> according to the Islamic law.

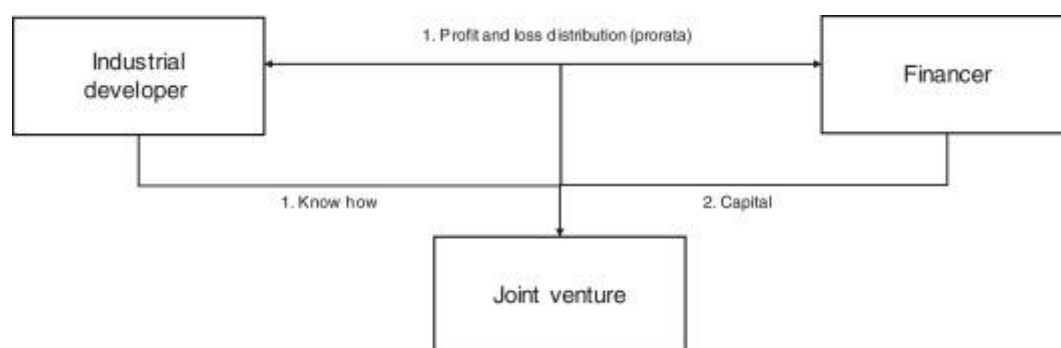


Figure 4: The structure of a *Musharakah* contract. Gatti (2018)

The main peculiarity of this contract is that the profits deriving from this partnership are distributed on the basis of an agreement, while the losses are distributed according to share investment made by the parties who, which is the reason why the *Musharakah* is considered an equal participation contract and consequently the Islamic financing instrument that best complies with *Shari'ah* law's profit and loss sharing principles

Another important advantage linked to the *Musharakah* contract is the fact that the lender who contributes his capital can contribute to the investment not only through cash payments, but also with his own work, through the rental of machinery or equipment, or directly with goods transferred in kind. In fact, this instrument usually has been used for financing fixed assets and working capital of medium- and long-term duration<sup>79</sup>.

It is possible to divide *Musharaka* in two different typologies depending on the reason on which the partnership is based:

- *Sharikah al milk*: partnership based on joint ownership.
- *Sharikah al uqud*: partnership based on a contractual relationship.

<sup>78</sup> Latin expression for “proportionally”

<sup>79</sup> Elarag, Hussein, 09. April 2011

## 2.3 Services

In the services categories it is possible to find safe-keeping contracts, demand deposits such as *Wadilah*, and agency contracts, such as *Wakalah*. The former are deposits held at the bank as a trustee for safekeeping purposes<sup>80</sup>, guaranteed in capital value without earning any return. The latter are contracts in which one party acts as an agent to the other to undertake transactions on his behalf<sup>81</sup>.

## 2.4 Capital Market Instruments

In the last decades the international securities markets have seen an increasing quantity of financial instruments based on Islamic principles. However, most of these instruments are severely limited. It is due in particular to the ban on *Gharar*, which is in contrast with the increasingly widespread practice of short selling and by the Koranic principle of Profit-and- Loss-Sharing, together with the prohibition of *Riba*-interest, which make Islamic finance incompatible with the conventional interest-based debt market, which represent an important part of capital market instruments. The pursuit of these principles has a strong influence on the Islamic financial system, both as regards investment opportunities and as regards the trading of financial instruments. However, Islamic financial institutions have developed over the years several *Shari'ah*-compliant financial products, thus achieving the creation of both an Islamic stock market and the Islamic bond market, the so-called *Sukuk*, also thanks to the ethical role that Islamic financial instruments have. In particular, the debut of important conventional banking giants in the *Shari'ah*-compliant financial products market shows how much the Islamic finance sector is moving important steps towards its success at an international level: for instance in 2014 one of the most important American investment banks, Goldman Sachs, issued *Sukuk* for a 500 million dollar amount.

### 2.4.1 Islamic Stock Market

Islamic finance has a natural predisposition for the stock market, which can be the ideal field for the application of risk-sharing principles. However, the stock market can be exploited by Islamic financial institutions provided that it is not used for speculative purposes and that the corporate purpose of the players is an activity considered as *halal*. The latter issue has a strong importance for Islamic investment funds, which must adhere to very specific rules in their portfolio-selection process. Moreover, even the prohibition of *Gharar* and *Maysir* represent an obstacle that poses further distance between Islamic finance and conventional

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<sup>80</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

<sup>81</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

finance because of the effect that these two bans have on the use of derivative instruments, like futures, forward and options.

The equity investment that follows the dictates of *Shari'ah* is basically represented by the *Musharaka* contract, which requires adhesion and full participation in the economic initiative, unlike what happens in conventional finance. For such reason in the Islamic financial model the use of preference shares and any other participatory tool that may limit the PLS principle is prohibited.

In Islamic finance, in order to make an equity investment, certain rules must be followed. Starting from the principles explained before, an investor must first do an industry screening to identify the company in which *Shari'ah* allow him to invest (*halal* companies), and then have to develop a financial screening to identify *halal* companies which respect the allowed level of financial ratios. The rule of the financial screening is identified by the Islamic Indices, which will be discussed in the following paragraph.

## 2.4.2 Islamic Mutual Funds and ETF

The implementation of Islamic Mutual Funds refers to a *Mudarabah* contract, in which the subscribers pay the capital and entrust the management to the *Mudarib*. Islamic Mutual Funds can represent a solid alternative both for Islamic investors who want to invest without breaking the *Shaaria* rules and for western investors worried about the great volatility of financial markets. In fact, Islamic funds have a high level of stability because they respect prohibition of speculation, with the direct consequence to be strongly connected with the “real economy”. This instrument born in the 80s from an idea of Saudi Commercial Bank which had the aim to allow access to investments not only to institutional bodies or private individuals with large assets but also to the small public<sup>82</sup>. However, over the years, Islamic regulated stock markets have not reached up yet a development that allows investors to diversify sufficiently. This happened mainly because of the insufficient capitalization of the banks and the non-existence of a developed interbank market. Another factor that influenced the development of Islamic Funds is the respect of *Shari'ah* principles. First, Islamic Funds' managers are restricted in their ability to exploit superior information or winning markets<sup>83</sup>, for instance using leverage. On the other hand, several scholars argue that thanks to *Shari'ah* law the potential damage caused by a manager is limited<sup>84</sup>. Another critical aspect of Islamic Funds is that the companies in the portfolio must respect the *Shari'ah* principles and, consequently this means the exclusion of certain sectors and some specific companies. All the *halal* activities that are authorized to become part of the portfolio are therefore identified through the “*Shari'ah* board's” surveillance. There is therefore an absolute ban on investing in activities that do not respect the Koranic principles such as businesses related to tobacco, pornography, pork and alcohol.

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<sup>82</sup> Cox (2002)

<sup>83</sup> Rammal (2011)

<sup>84</sup> Abdullah, Hassan and Mohamad (2007)

However, what represents the most difficult limit to respect is the prohibition of *Riba* because it has not the only effect of banning the investment in western banks because they operates with *Riba*, but this prohibition also ban to invest in halal activities financed with a *Riba*-based system. Some funds, instead of the constant consultation of the *Shari'ah boards* take into account the Islamic indices in order to decide in which business activity it is possible to invest. The two most important Islamic indices are Dow Jones Islamic or the FTSE Global Islamic. These two indices were born consequently to the creation of the first purely Islamic capital market index, that is the Islamic Capital Market (ICM) of the Kuala Lumpur Stock Exchange in Malaysia<sup>85</sup>, and they are composed by securities approved by the respective boards and have a global geographical coverage. Other important Islamic indices are Islamic indices such as the *Dow Jones Islamic Market Index*, the *MSCI Global Islamic Indices*, the *Standard & Poor's Shari'ah Indices*. Generally, they are used as a benchmark by the funds to know if a security is *halal* or *haram*. The stock selection of these indices is a long and complex process that, beyond the identification of *halal* businesses, is characterized by three main steps that define the previously mentioned financial screening process<sup>86</sup>:

- Company must have a debt to equity ratio equal to or less than 33%. The reason is that debt is not acceptable according to *Shari'ah*, unless the part of the company financed by this *Riba* based system is a minority.

$$\frac{Debt}{Equity} \leq 33\%$$

- The sum of total income from non-operating interest activities that the company receives must be equal or less than 9% of company's total income. With such rule all those companies that make excessive use of activities that generate interest are excluded from the selection.

$$\frac{Non\ operating\ interest\ income}{Total\ Income} \leq 9\%$$

- Company must have an account receivable to total asset ratio equal or less to 47%.

$$\frac{Account\ Receivable}{Total\ Asset} \leq 47\%$$

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<sup>85</sup> V. Cox (2002)

<sup>86</sup> Rahman, Azhar, Yahya, Mohd Nasir, Mohd Herry, 2010/08/31,228-240

Since the respect of Koranic principles often presents the risk of excluding too many businesses from the investment portfolio, several contemporary scholars tend to allow investment in stocks with tolerable proportions of revenues from prohibited activities under the condition of “*Haram purification*”<sup>87</sup>. With that practice the investors identify in the balance sheet all the profits obtained through investment in *haram* activities and donate the amount they got from those to charities to purify their earnings from prohibited activities<sup>88</sup>. In that way the investors are purified for their “immoral investments” through the application of the previously mentioned Islamic principle of *Zakat*. That is the reason why, because of their multinational dimension, many Islamic Funds receive a very small proportions of their revenue from a prohibited activity. An example can be found in the Dow Jones Islamic Index, in which the *Shari’ah Supervisory Board* tolerates corporations, whose ratios of total debt, sum of cash and interest bearing security, and accounts receivable are less than a third of the corporation’s market capitalization<sup>89</sup>, while several Islamic indices use similar ratios<sup>90</sup>. In addition to mutual investment funds there are also Islamic Exchange Traded Funds (ETF), funds traded on markets whose investment objective is to replicate the *Shari’ah*-compliant-index used as a benchmark through passive management<sup>91</sup>. Islamic ETF invest only in Islamic indices that already had both the industrial and the financial screening to identify the company in which it is possible to invest, and that is the reason because they don’t need a *Shari’ah Supervisory Board*.

### 2.4.3 Derivatives and *Shaaria*

As mentioned in the previous chapter, one of the principles on which the entire Islamic financial system is based is the prohibition of *Gharar*, that is the prohibition of informational asymmetry. Consequently, according to the percepts of *Shari’ah*, a contract to be valid must not have any element of uncertainty, both as regards the price and quantity of the traded good, and as regards the future outcome of the contract.

On the base of this principle, it appears clearly that futures and forwards are completely incompatible with Islamic finance since they are in total and violation of the prohibition of *Gharar*. In fact, both the definition of the price and the delivery are postponed to a future moment because of the nature itself of these instruments. The presence of absolute uncertainty about all the fundamental elements of the contract makes future and forward derivative contracts based on the *Gharar* by definition, making these contracts unacceptable and prohibited by *Shari’ah* law<sup>92</sup>.

Another derivate contract rejected by *Shari’ah* is the option contract. In fact, the option is an independent asset, unrelated to an underlying contract. According to Islamic law, a contract can concern the ownership of an asset

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<sup>87</sup> Rammal

<sup>88</sup> Derigs and Marzban 2008; Ebrahim and Rahman 2005; El-Gamal 2006; Jaffer 2004; Rahail 2008

<sup>89</sup> Dow jones (2009)

<sup>90</sup> Derigs and Marzban 2008; Ebrahim and Rahman 2005; El-Gamal 2006; Jaffer 2004; Rahail 2008

<sup>91</sup> Alvaro, Consob (2014)

<sup>92</sup> Uberoi, Khadem (2011)

or a monetary obligation and, since the option cannot be linked to none of these cases, it is not accepted. Therefore, options can be traded if included within a contract for the transfer of an asset but cannot be exchanged as an independent asset.

Beyond the violation of the prohibition of *Gharar*, to further analyze the role of derivatives instruments in the Islamic context, it is necessary consider the original purpose for which derivatives are used. In fact, they have been created as a method of hedging the risk deriving from fluctuations in the market price of the underlying asset, as happens in future contracts, in which the coverage derives from the ex-ante fixing of the price of an asset that will be delivered in the future, while in the option contract, the risk is mitigated through or the opening of forward positions opposite to those of the main contract.

As a matter of fact, most of derivatives contract are not hold until the expiration but the position is closed earlier with a speculative operation. Such mechanism transforms the derivative instruments from being a risk-hedging method to becoming a mere speculative investment instrument, violating not only the prohibition of *Gharar*, but even the ban of *Maysir*. These two aspects of derivatives instruments are a strong obstacle to the development of Islamic derivative instruments.

However, because of the increasing role played by these instruments in the latest years, several Islamic scholars<sup>93</sup> recognized the importance of the benefits achievable through derivative instruments thanks to their risk hedging function in conventional finance, reaching the point of accepting the hedge as a legitimate tool for correct risk management and accepting the presence of some of these contracts as necessary because of the absence of similar “Islamic risk-hedging” instruments. This may be possible because the prohibition of the *Gharar* only involves the prohibition for the producer to guarantee for the creation of random and separate financial rights with respect to the transaction but not for a real good<sup>94</sup>.

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<sup>93</sup> Alvaro, Consob 2014 identifies in the discussion: A. JOBST - J.A. SOLÈ, Operative Principles of Islamic Derivatives – Towards a Coherent Theory, IMF Working Paper (WP/12/63), 2012; INTERNATIONAL SHARI’AH RESEARCH ACADEMY FOR ISLAMIC FINANCE (ISRA), The Financial Crisis and the Role of Derivatives, Atti della Seconda Tavola Rotonda ‘Oxford Islamic Finance’ del 15 aprile 2009, The Frontiers of Innovation in Islamic Finance, 2011, pp. 5-11; A. JOBST, The Economics of Islamic Finance and Securitization, Journal of Structured Finance, Vol. 13, n.1, pp. 1-22, 2007 (pubblicato anche negli IMF papers col n. 07/117, International Monetary Fund, Washington, 2007); A. JOBST, Derivatives in Islamic Finance, in Salman, Ali (Ed.) Islamic Capital Markets: Products, Regulation and Development, Islamic Development Bank, Islamic Research and Training Institute (IRTI); Jeddah, 2007; M.H. KAMALI, Islamic Commercial Law – An Analysis of Futures and Options, Islamic Text Society, Cambridge, UK, 2001, Chapter 10; O.I. BACHA, Derivatives Instruments and Islamic Finance: Some Thoughts for a Reconsideration, International Journal of Islamic Services, Vol. 1, n. 1, aprile-giugno 1999, pp. 9-25; M.T. USMANI, Futures, Options, Swaps and Equity Investments, New Horizon, Institute of Islamic Banking and Insurance, n. 59, 1996, p. 10 e ss.

<sup>94</sup> A. JOBST, Derivatives in Islamic Finance

## 2.4.4 Sukuk

In the Islamic context the most important capital market alternative to the stock market is represented by the emission of *Sukuk*, which represent the most important financing method<sup>95</sup> both for Islamic companies through corporate *Sukuk* and for State funding through sovereign issues, accounting for the 14% of overall assets of Islamic Finance industry. *Sukuk* are normally defined as “Islamic Bonds” but this is not the correct definition for this financial product. In fact, in the Islamic context, the exchange of bonds such as happen in conventional finance is not allowed because it would violate the prohibition of *Riba* since the loan is remunerated by the repayment of the invested capital plus interest. In fact, although the *Sukuk*'s aim is the same as conventional bonds, that is to obtain liquidity for the holders through the subscription of financial instruments, in Islamic finance the debt-financing is completely non-existent except for the benevolent loan without payment of interest that is assimilated to *Zakat*. However, the debt market is not absolutely prohibited but only its interest-based nature is.

In 2008<sup>96</sup> the AAOIFI defined the *Sukuk* as "*certificates of equal value representing undivided shares in the ownership of tangible assets, usufructs and services or (in the ownership of) the assets of particular projects or special investment activity*"<sup>97</sup>. So *Sukuk* do not have a debt instruments nature<sup>98</sup> because they are securities representing shares of undivided ownership on a tangible asset, consistent with the principle of Islamic Finance according to which there must always be a close connection between financial instruments and underlying real assets.

At the basis of the *Sukuk* issuing there is a securitization process: the subject who need funds, called originator, creates a special purpose vehicle (SPV) with its own legal subjectivity which receives an amount of tangible assets from the originator. In exchange, the SPV issues *Sukuk* certificates, which will be subscribed by investors. The SPV uses the funds raised with the emission of certificates to pay for the assets transferred by the originator (with the price of certificates that cannot be different from the face value of assets) that will use the same funds to finance *Shari'ah* compliant projects<sup>99</sup>. In that way, investors will become owners of the assets proportionally with their contribution and they will join an Islamic contract created by the SPV with the originator<sup>100</sup> for the use of the assets. Depending on the Islamic contract initiated by the SPV, the *Sukuk* will be based on a different type: AAOIFI identifies about 14 typologies of *Sukuk*, like *Musharaka Sukuk* or *Ijara Sukuk*, and the most important of them will be discussed later in this chapter.

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<sup>95</sup> Data of Global University of Islamic finance

<sup>96</sup> This definition follows the 2003's statement in which AAOIFI defined "Investment Sukuk". [www.AAOIFI.com](http://www.AAOIFI.com)

<sup>97</sup> [www.AAOIFI.com](http://www.AAOIFI.com)

<sup>98</sup> Ariff, Safari, Mohammad 2012

<sup>99</sup> F. MIGLIETTA, 2012. Alvaro, Consob (2014)

<sup>100</sup> M.G. STARITA, C. Porzio, 2009



Moreover, there is an important distinction based on the contract that characterize underlying assets between “Asset-Backed *Sukuk*” and “Asset-Based *Sukuk*”.

Asset-backed *Sukuk* are characterized by a real sale of the assets from the originator to the SPV. Once transferred the asset, the originator lost definitively its availability and is no longer responsible for it<sup>101</sup> and *Sukuk*-holders rely only on the performance of the underlying assets for the return of their investment.

On the other hand, in case of Asset-based *Sukuk*, the SPV does not receive the full ownership of the assets, but only the beneficial interest<sup>102</sup>, so assets remain accounted in the originator's balance sheet. In that case, *Sukuk*-holders, beyond the performance of the underlying assets, can also rely on the resources of the originator, who undertakes to buy back the certificates upon expiry date. This mechanism makes this kind of *Sukuk* more similar to conventional bonds.

Figure 5: Characteristics of Asset-Based and Asset-backed *Sukuk*<sup>103</sup>.

	Asset-Based <i>sukuk</i>	Asset-Backed <i>sukuk</i>
Ownership	<i>Sukuk</i> investor only attains beneficial ownership, they do not attain real ownership of the asset	Full transfer of legal ownership of the underlying asset
Income source for the <i>Sukuk</i> holder	Main source of payment usually comes from the issuer’s cash flow.	Main source of payment is the revenue from the underlying <i>Sukuk</i> assets.
Funding cost	Market driven, depending on originator.	Capital driven, depending on the strength of the asset cash flow.
<i>Sukuk</i> Default	Possibility of default, <i>Sukuk</i> are structured to replicate Asset-Backed Securities.	Cannot default because there is not debt structure.

Asset-based *Sukuk* are the most common and widespread typology of *Sukuk* because of their similarity to all the conventional asset-backed securities (ABS). However, since in the financial crisis of 2008 they have been shown to be exposable to default and in latest years asset-backed *Sukuk* have attracted the attention of several investors and scholars mainly because of their stronger non-debt structure that make them very different from conventional finance debt-instruments. This attitude has highlighted how the overreliance on

<sup>101</sup> F. Miglietta 2012

<sup>102</sup> A beneficial interest is the right to receive benefits on assets held by another party, Investopedia.com

<sup>103</sup> Based on “Differences between asset-based and asset-backed *Sukuk*” academia.edu

borrowed funds has become an important cause of many bankruptcies at the basis of the financial crisis even in the Islamic Economy.

## Differences between conventional Bond and *Sukuk*

As written at the beginning of this chapter, conventional bonds and *Sukuk* seem to respond to the same economic need, that is to obtain liquidity for the holders. However, between these two instruments there are some important differences.

First of all, differently from the conventional bonds, *Sukuk*-holders income is generated by trading or real investment instead of lending, so they earn profit rather than interest<sup>104</sup>. Moreover, they receive this income only and exclusively if the underlying asset has generated a profit<sup>105</sup> because the value of the *Sukuk* remains connected with it<sup>106</sup>. Therefore, *Sukuk*-holders are exposed to the risk that their asset could not be profitable or could be destroyed. So, it is possible to state that the bond-holder is part of a loan-like contract and his financial right is cash flow-independent from the performance of the underlying assets while the remuneration of the *Sukuk*-holder it is not guaranteed because it strictly depends on the trend of the value of the underlying assets. This aspect makes *Sukuk* fully compliant with *Shari'ah* precepts because *Sukuk* the investor, as co-owners of productive assets, bears the same risk of the originator and that means the -holder's profit or loss is perfectly shared with the originator. Risk taking and Profit-and-Loss-Sharing are two essential requirements for *Sukuk* in order to be *Shari'ah*-compliant because a person that claim a share of income generated by an investment is not consistent with Islamic law unless he take responsibility for its outcome: income needs to be earned, if not by effort, then at the very least by taking risk<sup>107</sup>.

Another important difference is the one concerning the value of the financial product: while the determination of the price of a bond depends on expectations on interest rate movements, for the *Sukuk* that is linked to the expected return of the financed project<sup>108</sup>. Moreover, *Sukuk*-holder cannot receive any coupon payment, unless it is an anticipation of the final amount, which is determined at the expiration of the certificates in relation to the trend of the underlying activities

There are strong differences in the use of the collected resources: the issuer of a conventional bond has no restrictions on the use of the resources collected, while in the *Sukuk*, the instrument is issued together with a management contract of the SPV in which the is identified a "project manager" with an administrative role of the underlying assets following the indications of the investors. The investors have an important role in the relationship with the project manager: if the the project manager is the originator of the SPV, the *Sukuk*-holders have the possibility to recall his assignment in case they thought he was no longer suitable to fill the position.

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<sup>104</sup> Abdullah Abdul Karim, 2018/02/06, Asset-backed vs asset-based sukuk, ResearchGate

<sup>105</sup> Iqbal, Mirakhor (2011), p. 266.

<sup>106</sup> Elasrag, Hussein, 09. April 2011

<sup>107</sup> Abdullah Abdul Karim, 2018/02/06, Asset-backed vs asset-based sukuk, ResearchGate

<sup>108</sup> Alvaro, Consob (2014)

Moreover, it is contemplated the intervention of an Islamic Bank, which acts as guarantor both for the placement phase and to protect investors, buying back the certificates in the event of a “bad faith” management of the SPV that could potentially create damages for the investors. In that case, there is a cause for termination of the relationship and the SPV proceeds with the return of the assets to the originator at a predetermined price, which is used to repay the subscribers of the amounts previously paid and the vehicle SPV is dissolved.

For what concerns the market’s aspects and the compliance with the Islamic law the *Sukuk* have peculiarities that make them completely different from bonds. Starting from the market placement process, the issuance of a *Sukuk* must be 'certified' by a *Shari'ah board*. In this regards, while financial institutions, which are required by the AAOIFI to have an internal *Sharia* board, can sell their *Sukuk* both on the retail market and to institutional investors, industrial companies, which are not required to have an internal *Shari'ah* board, can only start a process of private placement with institutional investors or subjects with an internal *Shari'ah* Board<sup>109</sup>. Moreover, it has to be considered that only *Sukuk* certificates that are certified by the Fiqh Council of the OIC (Organization of Islamic Cooperation)<sup>110</sup> can be issued and freely traded on the secondary market and only the SPV in which the underlying assets consist mainly of tangible assets or financial rights can be certified, leaving less space for liquid assets or assets based on debt relationships. This implies that *Sukuk* certificates based on contracts such as *Murabaha*, *Salam*, and *Istisna* cannot be freely exchanged on the market, since these are relationships that create debt and their eventual transfer would be in contrast with the ban on *Riba*<sup>111</sup>.

Obviously, from an ethical point of view, *Sukuk* have to respect the restriction imposed by *Shari'ah* on the projects that are financed for which the investment limits are almost identical to those described in the previous paragraph for mutual funds: businesses linked to gambling, production of pork, tobacco and alcohol are not allowed to receive funding by *Sukuk* issuance. Moreover, a *Sukuk* investment, according to the Islamic law, have the obligation to be linked to an activity that create an advantage for the community. This moral aspect has been a strong limit for the development of the *Sukuk* market because several *Fiqh* thought that the idea of community had to be considered as a concept of local dimension. However, the pressures created by globalization have contributed to broadening the vision of this concept over time up to the point of conceiving the community as a "Society".

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<sup>109</sup> A. JOBST - P. KUNZEL - P. MILLS - 2008

<sup>110</sup> The Organisation of Islamic Cooperation (OIC) is the second largest inter-governmental organization after the United Nations with a membership of 57 states spread over four continents. The Organization is the collective voice of the Muslim world. It endeavors to safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world. [www.oic-oci.com](http://www.oic-oci.com)

<sup>111</sup> Iqbal, Mirakhor (2011), p. 267 s.

## Typology of *Sukuk*

As previously mentioned, based on the type of Islamic contract on which the *Sukuk* is based, AAOIFI identifies 14 types of *Sukuk* that can be grouped into *Sukuk* that bear predetermined returns and *Sukuk* that allow for sharing of profit and, in some instances, loss<sup>112</sup>. Most of the *Sukuk* issued is characterized by predetermined returns. Their structure is very flexible and depends on the underlying assets that are grouped and securitized and the rates of return can be fixed, floating or zero-coupon<sup>113</sup>. There are three Islamic contracts that are at the basis of the most common typologies of *Sukuk*:

- *Ijarah (Leasing)*
- *Musharakah (Joint enterprise)*
- *Mudarabah (PLS financing)*

### *Ijarah Sukuk*

This type of *Sukuk* acts as a certificate of ownership of a leased asset and of the claims of the cash flow generated by the asset<sup>114</sup>. This is the most common type of *Sukuk* because of the simplicity of its structure and because of its low risk: in that instruments, the *Sukuk*-holder receive not only the profits generated by the assets, but also the fees paid by the lessee.

The issuing of *Ijarah Sukuk* starts with the creation of a SPV to which an asset compatible with the *Ijarah* contract is sold. Therefore, the transaction is founded upon a lease-back contract with a periodic fee-payment in which the originator of the SPV has the commitment to regain the asset availability at the end of the contract. Then, SPV securitize the assets and proceeds with the issue of certificates of equal value. After the subscription *Sukuk*-holders become the co-owners of underlying asset. As the subscription of certificates represent a joint ownership of assets. With the amount raised thanks to the sale of the certificates, the SPV purchases the asset from the originator. The cash flow deriving from the payment of the leasing installments is transferred by the company to the *Sukuk*-holders until the expiration of the contract. Usually, together with the *Sukuk* contract, there is a put option according to which the originator undertakes to repurchase the certificates at their nominal value at the expiration of the contract<sup>115</sup>.

There are several reasons that can explain the success of that instrument. One of the most important is without doubt the flexibility of the *Ijarah* contract: in fact, regarding the timing of payment of the periodic coupons, it does not necessarily have to coincide with the timing of lease payments. Moreover, it is possible to extend the contract and to take advantage of it as long as the asset is productive. In addition, the originator can dispose

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<sup>112</sup> Elasrag, Hussein, 09. April 2011

<sup>113</sup> Elasrag, Hussein, 09. April 2011

<sup>114</sup> Aziz & Gintzburger, 2009; Visser, 2009; Kornelis Pandu Wicaksono 2015

<sup>115</sup> Godlewski, C, Turk-Ariss, R, & Weill, L. (2013)

the asset and at the same time has the possibility to trade the *Sukuk* on the secondary market with a negotiated price<sup>116</sup> because the underlying asset is tangible.

This instrument is strongly popular in Islamic countries. For example, in Malaysia the government used this instrument to act on the real estate market. It has also been used in non-Muslim countries like United Kingdom, Germany and United States. An example is represented by the US based company GE Capital, which issued a 500 Million U.S. Dollar *Ijarah Sukuk* (Coupon 3,875% and Maturity 5 years) and by the United Kingdom which issued it for 200 Million.

### *Musharakah Sukuk*

*Musharakah Sukuk* is an instrument based on an equity partnership used mainly for financing large scale projects, such as real estate or infrastructures. In this type of *Sukuk* the originator builds a joint venture with the SPV<sup>117</sup>: the latter issues the certificates that represent the joint ownership of the assets and attribute the right to receive dividends periodically in addition to the right to the repayment of the capital at the end of the contract. The aim of the partnership is to maintain a project and generate profit. The *Sukuk*-holders buying the certificates, accept to be part of a trust, in which the SPV is responsible for management in the interest of the investors. Then, the SPV signs a *Musharakah* contract with the originator which confers what has been collected through the issue of *Sukuk* while the SPV confers other monetary resources or goods. The profits generated by the project are distributed among the parties according to a predetermined profit and loss-sharing ratio, while the losses are borne proportionally to the capital contribution of each part. At the maturity date, if the project has been able to generate enough profit for the originator to buy back assets from the joint venture, *Sukuk*-holders will be repaid with the face value of their initial capital contribution. This kind of *Sukuk* can be traded on secondary market. Moreover, together with the creation of the *Musharakah* contract, a call option is also created. Its role is to give the possibility to the SPV to sell its share at fair value to the originator in the moment of the expiry of the contract or in case of default. This amount is used to proceed with the repayment of principal to the subscribers of certified certificates<sup>118</sup>.

### *Mudarabah Sukuk*

In a *Mudarabah* contract, as explained earlier in this chapter, investors provide a financing to the entity in exchange of physical and human resources and activities. This instrument is used when there is a group of investors who buy certificates to finance a specific business project. Therefore, the SPV and the originator reach a *Mudarabah* deal in which the SPV act as *Rabb al-mal*, providing the capital, and the originator acts as *Mudarib* because his role will be to manage the project. Then, SPV issues the *Sukuk* certificates that attribute the right to undivided joint ownership of the assets, the right to receive periodic payments related to the

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<sup>116</sup> Visser, 2009

<sup>117</sup> Godlewski, C, Turk-Ariss, R, & Weill, L. (2013)

<sup>118</sup> Russo (2014), p. 109.

progress of the project and the right to reimbursement of the capital conferred. Moreover, SPV constitutes a trust in which it confers the money collected and the rights deriving from the *Mudarabah* contract, acting as a trustee in the interest of the investors.

At the expiration date of the contract, the assets will be sold and the consequent amount will be distributed: first, the initial investment of the SPV is repaid, then the remaining part is shared with the originator according to the agreed methods. The SPV pays profits to investors and takes over the certificates and thus allowing the *Sukuk*-holders to recover the share capital. *Sukuk*-holders can only rely on the flows generated by the project and cannot take advantage of the *Mudarib*, in compliance with the rules of the *Mudarabah* contract. In this typology of *Sukuk*, the certificates can be freely negotiated on the secondary market only if the underlying assets of the contracts are tangible assets for a percentage greater than 50%<sup>119</sup>. In recent years, *Mudarabah Sukuk* have been traded on the market with the particular formula of “*Perpetual Mudarabah Sukuk*”.

## Rules for *Sukuk* exchange on the secondary market

Regardless of the type of underlying Islamic contract, *Sukuk* must respect certain rules prepared by AAOIFI “*Shari'ah* board” to be freely negotiated and to be *Shari'ah* compliant:

- *Sukuk* must not represent debts or credits, except in the case of alienation of all the assets or of the entire funded portfolio.
- The *Sukuk* manager cannot offer financing to subscribers when profits are lower than expected. It is possible to create an emergency fund to cover losses if it is established in the original investment prospect.
- The “*Shari'ah* Supervisory” Boards have the task of supervising that the *Sukuk* is *Shari'ah* compliant in all the necessary aspects respecting the standards issued by the AAOIFI. Moreover, the Board also expresses certain guidelines so that *Sukuk* can be negotiated in the fairest way possible. One of the most important recommendations is that financial institutions have to reduce debt-based operations favouring risk-sharing operations, based on the PLS principle, in order to be more responsive to the objectives pursued by Islamic law.

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<sup>119</sup> Russo (2014), p. 108 s.

## 3 Islamic Finance development in the Global Financial System

### 3.1 The dimension of Islamic Finance

After being a niche phenomenon until the end of the last century, Islamic finance is now widespread globally and has become a valuable and an increasingly frequent alternative of investment and financing. After a strong development in the countries of the Gulf Cooperation Council (GCC)<sup>120</sup> and in Malaysia, since the end of the 90s Islamic finance has had a very strong expansion first in the countries of North Africa and then also in western countries such as the United States of America, Australia, Canada and in some European countries as the United Kingdom and in Luxembourg. As a result, the value of the Islamic financial industry increased from USD 150 billion in the mid-1990s<sup>121</sup> to about USD 2.5 trillion by end-2019<sup>122</sup>, led by the Islamic banking sector and the global *Sukuk* market, whose total outstanding is USD 466 billion. Furthermore, the industry is expected to grow by a 5.5 % CAGR<sup>123</sup> to reach \$3.47 trillion by 2024<sup>124</sup>. According to a study carried out by the European Central Bank<sup>125</sup>, this global expansion of Islamic finance is mainly due to several factors:

- The great availability of liquidity for the GCC countries, Indonesia and Malaysia generated by high oil prices over the last 20 years.
- The increase of Muslim population in western countries and the consequent higher demand for *Shari'ah*-compliant products. In response to this new demand, there has been a commitment by multilateral organisation, like the IMF as well as several central banks in the western countries, to find solutions from a legal and financial point of view in order to promote the development of Islamic financial markets.
- The fact that Islamic finance is characterized by a strong ethical component with an important role in addressing Environmental, Social and Governance (ESG) objectives. The direct consequence is that Islamic finance has been perceived as a force that can help to promote global financial stability.

Therefore, in countries in which the presence of Islamic immigrants is more numerous, western financial institutions have organized themselves to reach Muslim customers directly, eliminating the passage through Islamic banking intermediaries operating in Muslim countries. Specifically, one of the most used mechanism

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<sup>120</sup> Intergovernmental political and economic union between the Arab States of Persian Gulf: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. ([www.gcc-sg.org](http://www.gcc-sg.org))

<sup>121</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB, JUNE 2013

<sup>122</sup> State of the Global Islamic Economy Report 2019/2020, DinarStandard

<sup>123</sup> CAGR: Compounded Annual Growth Rate

<sup>124</sup> State of the Global Islamic Economy Report 2019/2020, DinarStandard

<sup>125</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB, JUNE 2013

is the so-called “Islamic Window”, that is the department of a traditional bank that offers Islamic financial services. While an Islamic financial institution is based on and managed with principles responding to *Shari’ah*, an Islamic window refers to the services provided by a conventional bank but based on Islamic principles<sup>126</sup>.

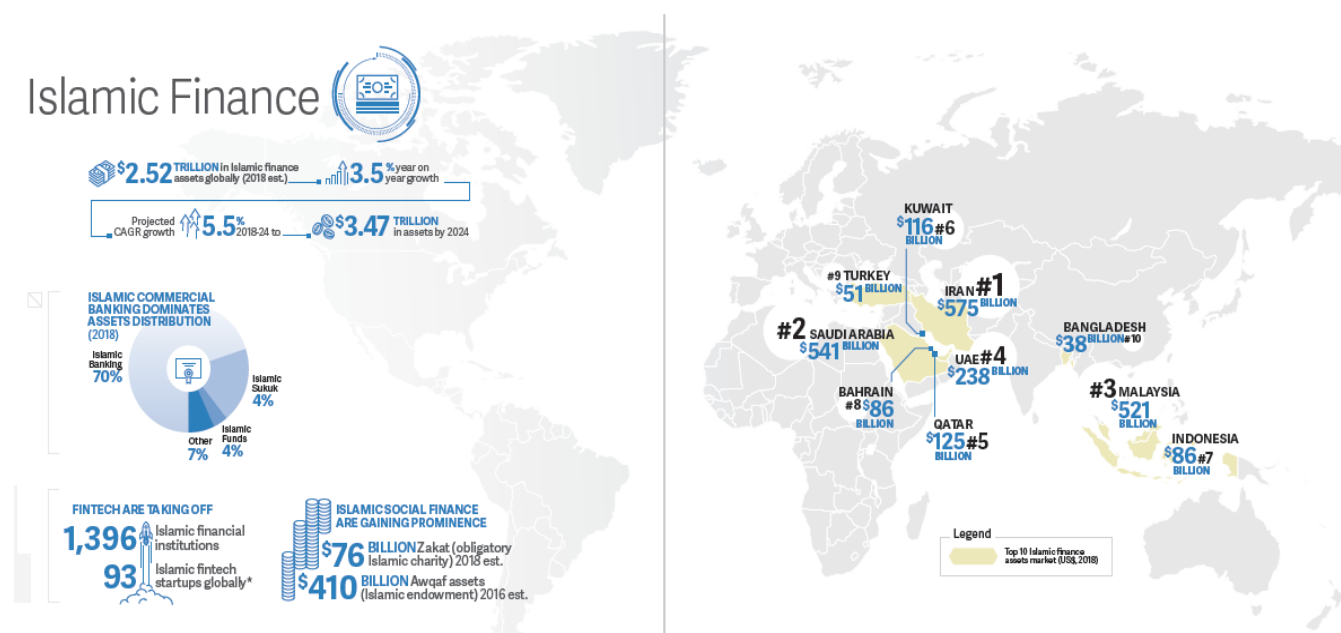


Figure 5: The dimension of Islamic Financial Industry at the end of 2018, State of the Global Islamic Economy Report 2019/2020, DinarStandard

According to what has been analysed in the “State of the Global Islamic Economy Report” Islamic finance represent the second largest share of value in Islamic economy, as the 42% of total investments are made in this area<sup>127</sup> and it will be able to have a remarkable growth in next years. The reason is to be found in the exploitation of some trends that Islamic financial institutions, thanks to the *Shari’ah*-compliant instruments, have transformed into investment opportunities:

- Strong investments in innovation, fintech, cryptocurrencies and digital banking
- Development of new Islamic trade solutions
- The increase of Islamic “social finance”, in coherence with the principle of Zakat

The innovation field have a great importance for the future of Islamic finance: Islamic Venture Capital funds investments amount in 2018 reached USD 74 million, representing less the 0.1% of global venture investments in 2018 while Private Equity funds collected \$160 million, with an amount of USD 117 million collected in the MENA<sup>128</sup> region.

The latest trend in "social finance" is expected to have the strongest impact on the growth of the Islamic financial industry in the coming years, because of the planned investment of several major Islamic financial

<sup>126</sup> Investopedia.com

<sup>127</sup> State of the Global Islamic Economy Report 2019/2020, DinarStandard

<sup>128</sup> Middle East and North Africa



institutions for the coming years that have a strong link with resolving Sustainable Development Goals (SDGs). For instance, *Majid Al Futtaim*, a UAE-based urban developer and shopping mall operator, has planned to issue \$600 million of green *Sukuk* for investment in field like renewable energy and sustainable water management. This decision was inspired by and followed the Moroccan government issuance of green *Sukuk* thanks to the action Casablanca Finance City (CFC), which raised \$35.8 million to finance its environmentally friendly real estate program. Beyond these “green” action, the social impact of Islamic financing finds its full manifestation in the development across *Zakat* and Islamic micro-finance. For example, UNCHR, the United Nations Refugees Agency, launched the Refugee *Zakat* Fund in 2019, aiming to raise \$200 million for displaced families in the MENA region, and raising \$38 million by mid-year 2019.<sup>129</sup>

On the other hand, the Islamic financial industry has several systemic limits difficult to solve:

- Although both institutional and retail investor participation is experiencing a good level of growth, the lack of product variety creates the risk to limit investors’ demand. The impetus to develop new Islamic finance products and services is currently limited because of the lack of *Shari’ah* scholars with financial sector expertise<sup>130</sup>. Consequently, the current risk is to create a slowdown in the growth of innovation, affecting the industry and without giving to the entrepreneur an adequate support and engagement with Islamic finance institutions.
- Islamic finance had a fundamental role in the development of Islamic countries and now is becoming a global ethical financial benchmark but the action of the governments to improve the standardization of Islamic finance too often seem to be not enough. In fact, adoption rates of regulations remain low, with only a handful of countries fully adopting AAOIFI’s robust accounting standards as well as its *Shari’ah* standards<sup>131</sup> with the direct consequent risk of keeping Islamic finance in a niche market reliant on Bahrain, Malaysia, UAE and Saudi Arabia.
- The presence of lower economies of scale creates too often an uneven playing field with conventional finance<sup>132</sup>. Consequently, Islamic finance customer are exposed to a greater uncertainty because of the limited and difficult standardization.

The “ethical approach” of Islamic finance is, together with the presence of Muslim in western countries, the factor that more than any other is contributing to the development of the industry in western nations, especially after the 2008 financial meltdown, when the investors around the world began to feel the need for a greater presence of ethics in investment choices. Furthermore, many investors and many firms began to look for investing/financing instruments strongly connected with the “real economy” as the Lehman Brothers crash

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<sup>129</sup> Scaria, Seban. UNHCR, Salaam Gateway. April 26, 2019.

<sup>130</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

<sup>131</sup> State of the Global Islamic Economy Report 2019/2020, DinarStandard

<sup>132</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

showed how the traditional finance has been become totally detached from reality. For such reasons, the *Sukuk* market have become the most important in Islamic Financial industry, showing to be particularly fitted for the infrastructure financing.

Therefore, Islamic finance have the possibility to give high contribution to the economic growth thanks to its risk-sharing principle that seem to be well-suited for the financing of the SME and of the start-up system. However, the previously described limits represent a remarkable obstacle to future expansion.

### 3.1.1 The importance of *Sukuk* Market

The global *Sukuk* market has had an impressive growth in the last years, especially in 2019. In fact, as shown in the graph below, its comprehensive volume went from an amount outstanding of 142 USD Billions to 491.7 USD Billions in 2019 according to the MIFC Estimates of Fitch Rating. That means an increase of 6% compared to 2018, and it seems there are all the possibilities for further future development, thanks to new trends and new entrants who are preparing to join the market. This increase is mainly due to the exploitation of Environmental, Social and Governance (ESG) trend. In fact, beyond the great raise of Sovereign *Sukuk* (just in October 2019 Saudi Arabia government priced a USD 2.5 billion ten-year *Sukuk* as efforts to diversify its budget financing and help develop the regional *Shari'ah*-compliant debt capital market<sup>133</sup>) *Sukuk* market has had a flourish expansion because of Green *Sukuk*. Last year, for instance, Nasdaq Dubai listed its first green *Sukuk* in February by the government of Indonesia, issuing the world's first sovereign green *Sukuk*, a USD 1.25 billion five-year instrument with the objective to finance green projects<sup>134</sup>. Then later the same year, Dubai-based Majid Al Futtaim listed the world's first benchmark corporate green *Sukuk* of 600 million US dollars in May<sup>135</sup>. This has been possible because the ultimate trend for investors is to demand for ESG-compliant assets and Islamic financial institution has been able even to anticipate this trend because of the structural feature of *Sukuk*.

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<sup>133</sup> FitchRatings

<sup>134</sup> S&P Dow Jones Indices, The Development of the Global Sukuk Market from an Indexing Perspective, February 2020

<sup>135</sup> State of the Global Islamic Economy Report 2019/2020, DinarStandard

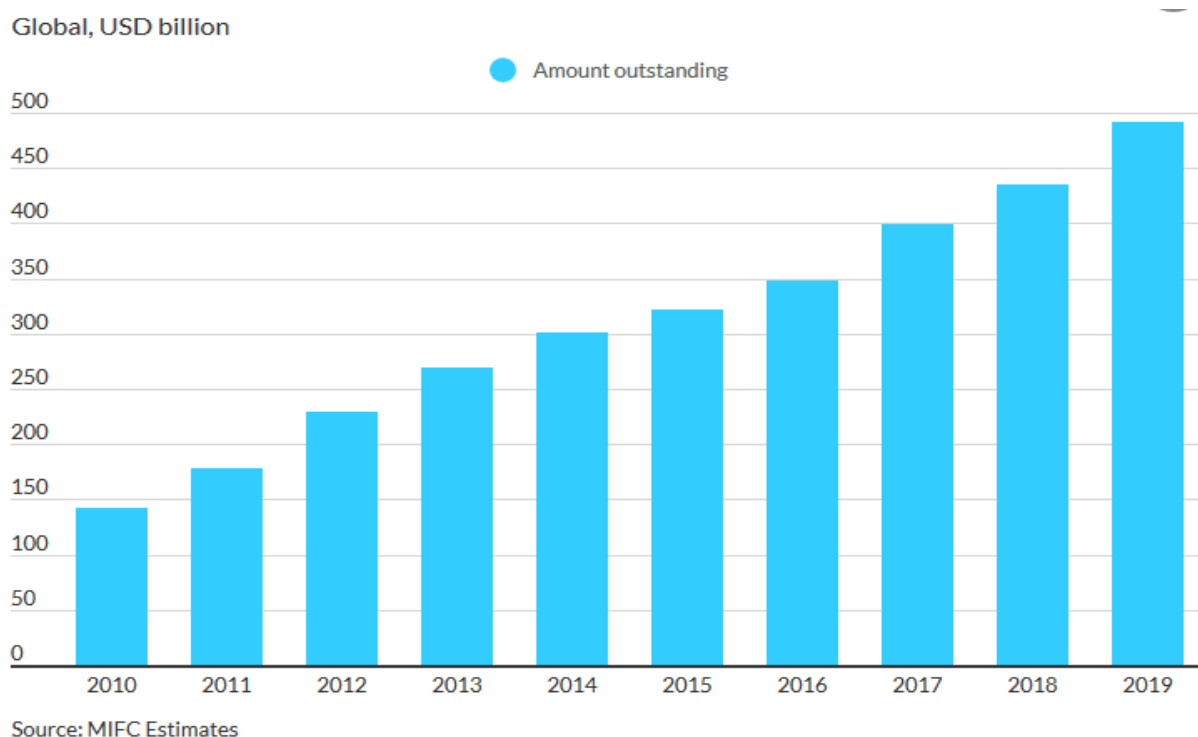


Figure 6: MIFC Estimates, Fitch Rating, 2019.<sup>136</sup>

From a performance point of view, in 2019 *Sukuk* experienced one of the best performance of all global fixed income asset classes over the past five years<sup>137</sup>: as it is possible to observe in the graph below elaborated by S&P Dow Jones, at the end of the year 2019, the Dow Jones Sukuk Total Return Index had a YTD performance of 10.14%, while the S&P Global High Yield Sukuk Index returned 11.75%. Compared to the S&P Global Developed Aggregate Ex- Collateralized Bond Index, the Dow Jones Sukuk Investment Grade Total Return Index outperformed by over 300 bps over the same period of five years<sup>138</sup>, that is three times the risk-adjusted return of S&P Global Developed Aggregate Ex- Collateralized Bond Index. In this analysis, S&P Dow Jones attributed this strong performance both to the high quality of issuers that are listed on S&P and to the features of *Sukuk*. In fact, according to S&P Dow Jones inquiry on *Sukuk*, investors particularly appreciate the presence of *Riba* and *Gharar* principles and the Risk-Sharing principle because their return is strictly connected with the profits generated by the underlying activities and the risk is shared by both the investor and the issuer of the *Sukuk*. On the contrary, in conventional bonds the issuer's credit conditions materially affects the probability of repayment of interest or principal.

<sup>136</sup> <https://www.fitchratings.com/research/islamic-finance/sukuk-issuance-rose-in-2019-as-diversification-continues-11-02-2020>

<sup>137</sup> S&P Dow Jones Indices, The Development of the Global Sukuk Market from an Indexing Perspective, February 2020

<sup>138</sup> S&P Dow Jones Indices, The Development of the Global Sukuk Market from an Indexing Perspective, February 2020

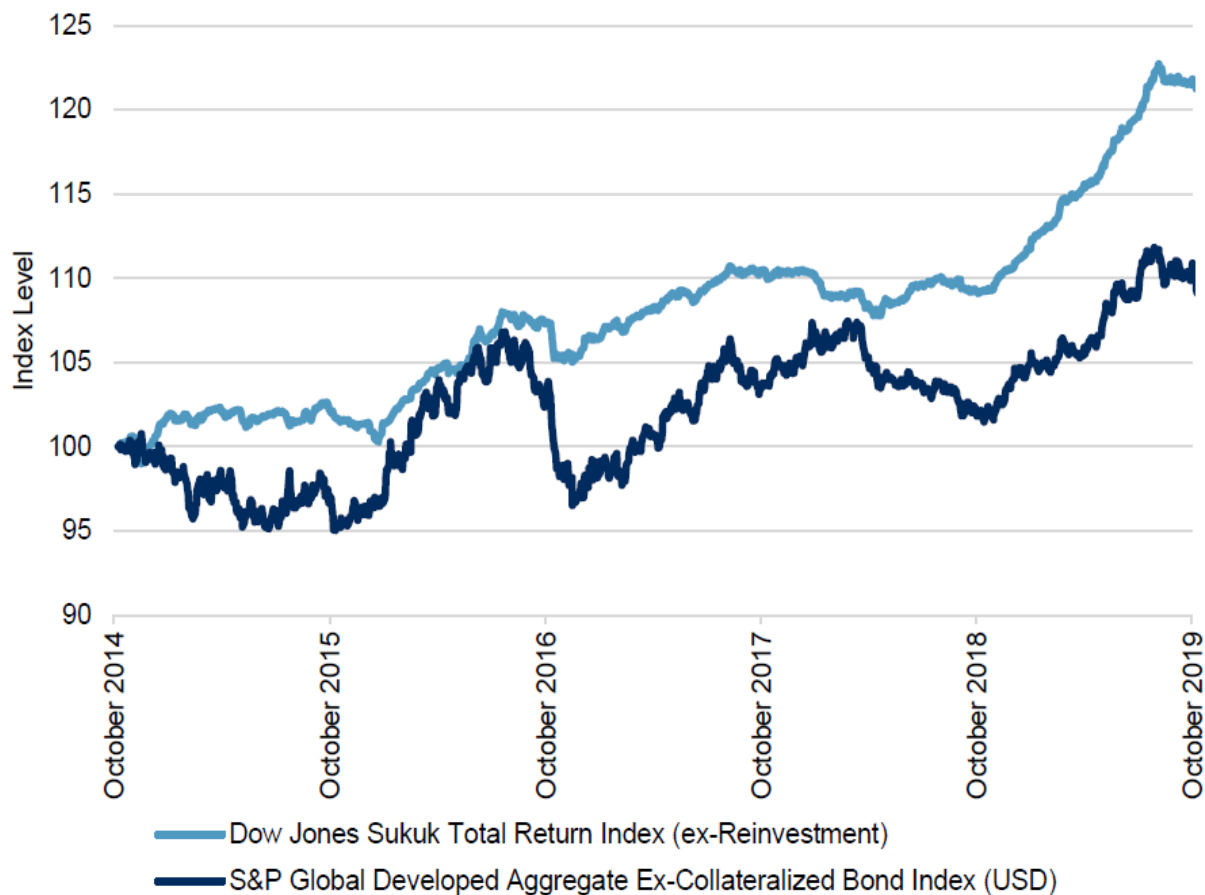


Figure 7: Performance comparison between Dow Jones Sukuk Total Return Index and S&P Global Developed Aggregate Ex-Collateralized Bond Index, S&P Dow Jones<sup>139</sup>.

The *Sukuk* market is characterized by several features that make it the most interesting market in the Islamic financial context. First of all, that market give the possibility both to sovereigns and multinational and national business entity, both from developed economies and from emerging ones, to invest in a wide range of business activities and to find a wide range of financing possibilities strictly connected to reality. According to the IMF and the World Bank<sup>140</sup>, that happens because *Sukuk* market is well suited for innovation thanks to the realization of cutting-edge products with a consistent price advantage.

For what concern the investors' point of view, the real strength of this market is the mentioned above diversification offered by *Sukuk* through the possibility to have a wide range of investment both in terms of business activities and in terms of time horizons. In particular, the Sovereigns *Sukuk* are one of the most appreciated Islamic instruments and they are considered investors' entry door into *Shari'ah*-compliant funding in the capital market because of their feature to create reference prices over time to which private sector entities can benchmark their fundraising activities<sup>141</sup>. However, the most important field in which the *Sukuk* market has been successful is the infrastructure financing: many countries over the last years faced serious issues in raising funds for building new infrastructures, mainly because of their bad financial conditions

<sup>139</sup> S&P Dow Jones Indices, The Development of the Global Sukuk Market from an Indexing Perspective, February 2020

<sup>140</sup> Aziz, IMF/World Bank Speech, 2014

<sup>141</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

and because of the change in bank's financing policies that became more hesitant to finance this typology of project. In this context, *Sukuk* offer a strong option to close the financing gap for infrastructure, so much that many Islamic countries, especially Malaysia, used *Sukuk* to finance new strategic infrastructure such as harbours and airports. This mechanism of financing can be assimilated to a Public-Private Partnership in which investors buy a portion of the securitized asset and give it back to the issuer, that is the government, at the maturity day. Usually governments create a SPV, that is at the head of all commercial operation regarding the construction of the infrastructure, and creates a *Mudarabah Sukuk*, with different maturity dates and different returns linked to the underlying assets, through which raise financing. *Sukuk* have resulted to be particularly suitable for the financing of infrastructure because of their risk-sharing feature: differently from conventional finance instruments, *Sukuk* does not separate equity and debt components during the greenfield phase leading to a concentration of risk in the equity tranche, but they are designed from the outset to spread the risk more broadly because all investors share in the same manner<sup>142</sup>.

However, the *Sukuk*, according to an IMF study<sup>143</sup>, still presents several structural limits:

- Difficulties for several governments to develop a stable local *Sukuk* market that would be important for the establishment of a *Sukuk* yield curve which could act as a fundamental benchmark for corporate *Sukuk*. Moreover, the complex structure of *Sukuk* has meant that they are often considered as instruments characterized by very complex risk profiles, especially for what concern the credit risk, the counterpart risk and above all the *Shari'ah*-compliant risk, that is the risk that the underlying activity of the financed *Sukuk* is found to be non-conform to Islamic precepts after the closing of the investment deal. This complexity issue represents a serious difficulty as both stable local *Sukuk* market and literacy are struggling to grow.
- Absence of a developed institutional framework for the government of the market.
- Difficulty in transferring the ownership of the underlying assets to the *Sukuk* holders.
- Ambiguity in the statistical and accounting treatment of *Sukuk*, with an alignment between Islamic standards and International Standards that can be still considered in the "Work in progress" phase.
- Absence of homogeneous budgeting rules that regulate every operation that could have an impact on the future budget of SPV.
- Absence of rules for the governments that have not a precise framework that establish how to allocate the proceeds of *Sukuk* emissions for specific investment projects, creating the matter of how to incorporate these expenditures into the aggregate government spending envelope and political decisions<sup>144</sup>.

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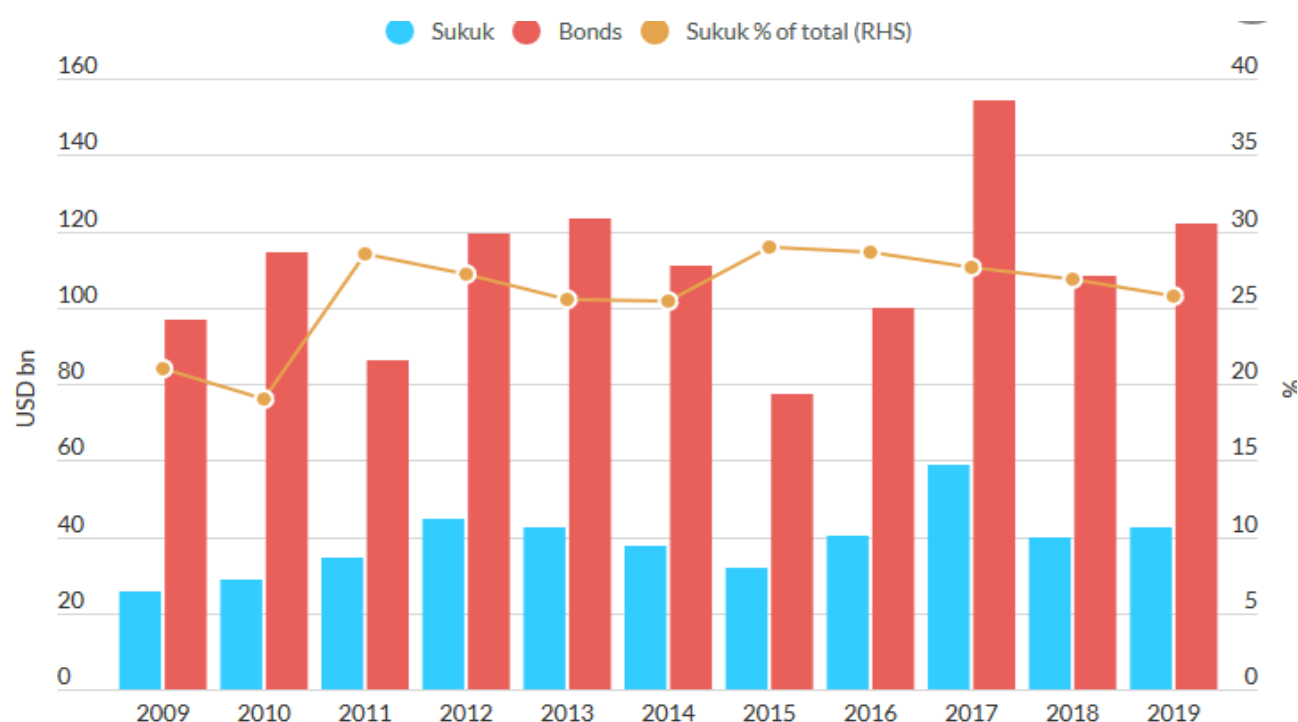
<sup>142</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

<sup>143</sup> Alfred Kammer, Mohamed Norat, Marco Piñón, Ananthakrishnan Prasad, Christopher Towe, Zeine Zeidane, and an IMF Staff Team, IMF, April 2015

<sup>144</sup> Hurcan, Y., M. Mansour, and B. Olden. 2015. IMF Working Paper.

However, all these structural problems that the *Sukuk* market presents could be easily solved in the early future, as Islamic finance is a relatively young market that now is living a moment of strong cross-border development. This international expansion is contributing to the creation of local markets, literacy and above all to a further development of a secondary market, thanks to the efforts made by Islamic financial institutions that are working with securitization practices with the final aim to reach a global standardization of *Sukuk*.

For what concern the future scenario of *Sukuk* market, starting from geographical expansion, after reaching a real position of dominance in the GCC countries, in Malaysia and in Indonesia, now it is growing year after year through western investors. According to the analysis of Fitch Ratings, the number of investors interested in these instruments is expanding, involving both the traditional investor base of Islamic banks who buy for investment and liquidity management purposes and other regional and international investors, as many may view *Sukuk* as an effective way to invest in some of the fastest-growing regions of the world. According to Fitch, the future development of *Sukuk* market will be strongly affected by the Islamic financial institutions and company's ability of issue *Sukuk* with a maturity of more than 18 months. In fact, as it is possible to observe in the graph below, the amount of *Sukuk* with such maturity is just 42 USD Billions, that is the 27.3 % of *Sukuk* outstanding. Except for Saudi Arabia, which has had a trend of longer-dated issuing in last years, almost every Islamic *Sukuk* market is not following this trend enough. Longer-dated issuance has been a recent feature of some markets as the *Sukuk* investor base has diversified and been less driven by liquidity management, maturities have extended, increasing the volume of *Sukuk* outstanding<sup>145</sup>.



Source: Fitch Ratings, Dealogic

Figure 8: Comparison between *Sukuk* and Conventional Bond with a maturity more of 18 months, Fitch Ratings<sup>146</sup>

<sup>145</sup> Fitch Ratings

<sup>146</sup> Fitch Ratings

In conclusion, the *Sukuk* market have every potentiality to grow significantly in the next years if Islamic capital markets continue the process of enhancing the issuance standards and structures and strengthen regulatory requirements in order to solve its structural problems discussed in this paragraph. Anyway, the following years will be strongly affected by the Coronavirus-lean global recession, which one of the most important effects has been the crash of oil price following the total stop of productive activities worldwide and the subsequent emergency's cut-off of the production. Obviously, this aspect will have a strong impact on the volume and on the performance of *Sukuk* and of all the Islamic financial system because the most important Islamic countries are strongly reliant on oil export. However, S&P Down Jones believe that a situation of global yields nearing all-time lows and increasing, together with this tremendous slowing of global GDP, could create the perfect conditions for Sovereign *Sukuk* issuers for filling their funding needs.

## 3.2 Islamic Finance in Europe

For several years, Europe has represented the western territory with the largest number of Islamic financial operators and with the largest customer base. In Europe there has been growing interest in Islamic financial products also by the non-Muslim population, given the certainty that *Shari'ah*-compliant products promise good results both in ethical terms and in terms of growth and development of the real economy. The main European players by Islamic finance development are the United Kingdom, Luxembourg and Germany, while France and Italy are also moving small important steps in the development of their internal Islamic financial market, representing two possible developing field for the future of this industry.

### 3.2.1 United Kingdom

The United Kingdom (U.K.) has the European leadership in terms of cutting-edge in Islamic finance, with five Islamic Banks that operate there without having a special banking license different from conventional banks. The history of Islamic finance in the U.K. began in the early 90s, when Islamic corporations from GCC countries began to offer mortgages financing based on *Ijarah* and *Murabahah*<sup>147</sup>. However, the decisive year for the expansion of Islamic Finance was 2004, when the Islamic Bank of Britain (IBB) saw its rise. The IBB had a strong importance because it was the first bank in the United Kingdom to introduce activities focused on Islamic precepts and, for this reason, currently represents a reference point for both private investors and for institutional one. This institution was carried on by a group of GCC countries' investors, represented a crucial turning point for a real pioneering operation that started the spread of Islamic finance not only through the British Isles but also in the whole European territory. In fact, the U.K. has been the first country to publicly declare its willingness to explore the possibilities of Islamic Finance and two years after the foundation of the Islamic Bank of Britain, the prime minister of that time, Gordon Brown, declared that the U.K. was starting the project to become the gateway of Islamic Finance in the Western world<sup>148</sup>. The reason behind this predisposition to Islamic finance of the United Kingdom is that starting from the late 80s it has become the destination of about 2.0 million of Muslims. According to the data of the Office of National Statistics, the Muslim population in UK has increased ten times faster than anyone else in British society<sup>149</sup>, making the Islamic finance market considerable from a numerical point of view and therefore convenient to satisfy. Moreover, after the "Muslim-hostile" climate that took place in the U.S. following the terrible tragedy of the "Twin Towers Terroristic Attack", many Muslims closed their US banking services and seek new places to deposit their money<sup>150</sup>, making the British financial system soaring with the new Muslims investments. At the

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<sup>147</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB Occasional Paper, June 2013

<sup>148</sup> Malik, Ali Malik, Muhammad, Haider, Shah 2010/12/21

<sup>149</sup> <https://www.ons.gov.uk/>

<sup>150</sup> Taylor, J.B. (2007)



beginning the development of the Islamic financial sector in the U.K. struggled to take off because of the very poor regulation, but then the government made several changes to make sure that Islamic financial products had the same protection and information that the conventional one.<sup>151</sup> One of the most important moment for the development of that market was in 2005 when the Sanctuary Building *Sukuk*, the first corporate *Sukuk* in Europe and the first from the UK, was launched. The fact that an Islamic financial instrument had been launched in a non-Islamic country created a debate inside British institutions and the government undertook a consultation on the legislative framework for alternative finance investment *Sukuk* that are structured to have similar economic characteristics to conventional debt instruments<sup>152</sup>. As a result, corporate *Sukuk* received a regulation and its issuing costs were reduced. To face in the proper way the rise of new Islamic financial instruments available for the British market, in 2013, the British Government established the Islamic Finance Task Force. The aim was to reinforce U.K.'s status as the western hub for Islamic finance by showcasing the UK as the preferred choice for the Muslim world to invest in and do business with, supporting the development of the Islamic finance sector of the Country, increasing inward investment and strengthening the economy thanks to the work of major industry figures<sup>153</sup>. Together with all these government's initiatives, also British financial institution started the exploration of the Islamic finance world. The first bank to offer Islamic financial product was HSBC Bank, that from 1998 to 2012 operated in the UK offering Islamic financial products with an ethical background through division dedicated exclusively to Islamic finance HSBC AMANAH. This division was closed for strategic reasons, but HSBC is still the main player of Islamic finance in Europe<sup>154</sup>, especially for what concern *Sukuk* issuance. As well, many other British firms started to look at this market. For instance, Lloyds TSB started operating in this market from 2003 through acquisitions of many banks in order to purchase its infrastructure to sell Islamic products<sup>155</sup>. Nowadays, many Islamic Banks from GCC countries are active in the UK to distribute their financial instruments, after noticing the great possibilities offered by this market. However, most of British financial institutions, and European overall, chose to operate through the creation of their "Islamic window".

After the rise of the oil price at the beginning of the century and the subsequent liquidity surplus in the GCC countries, the Gulf market experienced a saturation and the key factor for the development of this market in Great Britain has been the attempt to create an Islamic retail banking industry with deposit facilities based on the *Murabaha*. The final objective to attract Islamic customers who can invest larger amounts of money in *Shari'ah* compliant products to improve the liquidity of the Islamic banks or conventional banks and their Islamic funds<sup>156</sup>. As a result of that approach, the UK has nowadays one of the most advanced Islamic financial markets in the western world and has become the most important non-Islamic market for *Shari'ah*-compliant

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<sup>151</sup> Ayub, (2007); Umer,(2007) in Malik, Ali Malik, Muhammad, Haider, Shah 2010/12/21

<sup>152</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher,ECB Occasional Paper, June 2013

<sup>153</sup> <https://www.gov.uk/government/news/government-launches-first-islamic-finance-task-force--2>

<sup>154</sup> Bloomberg.com

<sup>155</sup> Malik, Ali Malik, Muhammad, Haider, Shah 2010/12/21

<sup>156</sup> Malik, Ali Malik, Muhammad, Haider, Shah 2010/12/21

financial institutions, especially the city of London, the most important financial centre in the world, that has become the place where Middle East's biggest financing institutions have their head office. Moreover, London Stock Exchange is the western financial market where most *Sukuk* are issued and the most developed secondary Islamic market.

For what concern the future scenarios of British Islamic finance, by now it has gained so much importance that U.K. is destined to remain the western hub of Islamic finance for so long. Even after Brexit, British government is strongly convicted that the Country is the only western nation in which Muslim can have every kind investment opportunity, as the former British Economic Secretary to the Treasury, John Glen, stated last year at the "2019 London Sukuk and FinTech Summit":

"The success of our financial sector is proof we are dynamic country, a country of opportunity uniquely suited to *Sukuk* and Islamic finance"<sup>157</sup>.

Since the London Stock Exchange listed its first corporate *Sukuk* in 2007 and its first sovereign *Sukuk* in 2008<sup>158</sup>, 72 *Shari'ah*-compliant bonds have been listed in London for an amount of to \$53 billion, with a record issuing of USD 8.6 Billion in 2018. The UK has worked through the years to build a fair regulatory framework for *Shari'ah*-compliant financial product, both for what concern the fiscal point of view and both for the development of the secondary market, and it is also thanks to all these efforts that several important building and infrastructure of the British Capital raised thanks to Islamic financing.

The future prospect is that Britain continues to play a leading role in the field of Islamic finance. The national financial system has in fact now completely integrated the Islamic financial elements, so much so that the British government has financed itself over the years by issuing *Sukuk* several times for hundreds of millions of euros. Furthermore, the presence of large financial institutions and GCC countries on British territory, as *Al-Rayan*, and the great activity of the "Islamic windows" of British banks is making the corporate environment increasingly oriented towards taking into consideration Islamic financial instruments, also due to their ethical background. Moreover, according to some scholar and according to former British Economic Secretary to the Treasury, John Glen, Brexit won't be a slowing factor for the development of Islamic financing, but instead it could be an accelerating factor in the process that sees Great Britain increasingly becoming the beacon of Islamic finance in the world as Brexit could create a scarcity of European investment in the nation, definitively paving the way to Islamic financing as predominant financing source<sup>159</sup>.

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<sup>157</sup> <https://www.thenational.ae/business/banking/uk-to-remain-islamic-finance-hub-of-the-west-1.882400>

<sup>158</sup> <https://ifikr.isra.my/news/post/uk-to-remain-islamic-finance-hub-of-the-west>

<sup>159</sup> <https://www.thenational.ae/business/banking/uk-to-remain-islamic-finance-hub-of-the-west-1.882400>

## Ireland

Thanks to its proximity to Great Britain, and thanks above all to its fiscal policies, Ireland too has become an important reference in recent years. Because of its tax advantages designed specifically for Islamic financial instruments, the Country has become the home of about the 20% of the Islamic funds outside of the Middle East, especially for those related to the insurance industry, with a focus on *Takaful*, the Islamic insurance instrument<sup>160</sup>.

### 3.2.2 Luxembourg

Just as it did for Ireland, Luxembourg over the years has also become a very important market for Islamic finance thanks to its advantageous fiscal policies that have allowed Islamic investors to target Luxembourg since the early twenty-first century. In fact, in 2002 Luxembourg Stock Exchange has been the theater of the first European-issued *Sukuk*. Since then in the Country 16 *Sukuk* have been issued. Thereafter, this country has been the first in Europe to authorize an Islamic insurance company and to issue a euro denominated Sovereign *Sukuk* and the Luxembourg Central Bank was the first in Europe to join to join the IFSB<sup>161</sup>.

Today Luxembourg emerges as the main non-Muslim home for *Shari'ah*-compliant investment funds: thanks to its characteristics, in fact, according to the European Central Bank it has managed to become the reference centre for many Islamic investment funds with a cross-border strategy at the level European. This has made Luxembourg the only case of a country with a strong presence of Islamic capital invested in *Shari'ah*-compliant financial instruments despite having a more than negligible Muslim population on the territory.

As regards specifically the *Sukuk*, Luxembourg had a pioneering spirit in experimenting with this type of financial instruments at European level, and for such reason two years after the issuance of the first *Sukuk*, Luxembourg Government decided to create a more streamlined and efficient regime for securitization, so as to implement the Luxembourg-based *Sukuk* market<sup>162</sup>. This move, carried out far in advance of other European countries, has meant that several European financial institutions, including some French and German ones, have opted for Luxembourg to expand their *Shari'ah* -compliant business.

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<sup>160</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB Occasional Paper, June 2013

<sup>161</sup> <https://www.luxembourgforfinance.com/en/financial-centre/islamic-finance/>

<sup>162</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB Occasional Paper, June 2013

### 3.2.3 Germany

The history of Islamic finance in Germany remained unexpressed until the beginning of the 21st century, despite the large percentage of Islamic immigrants. In fact, according to the data of Statistisches Bundesamt (Destatis), the Federal Statistical Office of Germany, at the end of 2016 the German Muslim population was equal to 4.95 million people, that is the 6.1% of the total population<sup>163</sup>.

However, the vast majority of German Muslim comes from Turkey, a Country that has been characterized by a strongly secular tradition deriving from Atatürk's doctrine, and that for this reason had never seen a strong demand for *Shari'ah*-compliant financial products arise from its population. This tendency changed when the AKP (*Adalet ve Kalkınma Partisi*) came to power applying a "religious agenda". However, most of Turkish immigrants in Germany belongs to the "old Atatürk's tradition", so one of the decisive factors in the development of Islamic finance in Germany was the strong presence of non-Turkish Muslim immigrants and the growing heterogeneity of the Muslim community in Germany<sup>164</sup> happened in the last decade.

Anyway, German financial institutions already started to look at Islamic finance in the 90s: when Luxembourg started to be the basis of many Islamic funds in Europe, they started to offer these products in Germany. This strategy had a good success between both German customers and GCC countries' investors with strong interest in Germany. This is one of the reasons why in 2004 the Land Saxony-Anhalt issued the first sovereign *Sukuk* with a European currency, a €100 million *ijarah Sukuk*, fully redeemed in 2009, fully subscribed by the investors: 60% of the issuing had been subscribed by Bahrain and the United Arab Emirates and the remaining 40% by European investors, mostly Germans<sup>165</sup>.

This event officially marked the opening of Germany to Islamic finance, so much that:

- the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin), the German Federal Financial Supervisory Authority, promoted two international conferences in 2009 and 2012 in which they outlined the peculiarities of Islamic financial instruments and the potential economic benefits the country might gain from establishing an Islamic Finance industry in Germany<sup>166</sup>.
- In 2006, in Frankfurt Am Mein, the Institute for Islamic Banking and Finance, a consulting firm in the field of Islamic Finance, was founded<sup>167</sup>.

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<sup>163</sup> [www.destatis.de](http://www.destatis.de)

<sup>164</sup> Matthias Casper, Asma Ait Allali, WWU, 2017

<sup>165</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB Occasional Paper, June 2013

<sup>166</sup> Matthias Casper, Asma Ait Allali, WWU, 2017

<sup>167</sup> Matthias Casper, Asma Ait Allali, WWU, 2017

- German firms whose business activities are conducted in line with the *Shari'ah* are included in the so-called WestLB Islamic Deutschland Index, which is used as a benchmark to evaluate *Shari'ah*-compliant investment product.

This was accompanied by the activity of the German banks, Deutsche Bank above all, that operate through their active branches or subsidiaries in GCC countries<sup>168</sup> and in Malaysia and through their “Islamic Window” offering Islamic investment banking to German customers.

Furthermore, Germany has seen the first Islamic Bank on its territory with the raise of the *Kuveyt Türk Katılım Bankası A.Ş.* (KT Bank), which in 2004 opened their office in Mannheim, without any German banking license. Since then, KT Bank started a long journey with the German authority to obtain full German banking license, until in 2015 Bafin, who had been identified as a supervising entity, gave his approval once it was fully clear that KT Bank was working in compliance with the German Supervisory Law. Therefore, the KT Bank can be considered a pioneer actor in the Islamic Finance field of Germany, and their action could be the starting point for other Islamic Banks to enter in the German banking sector, facilitating the development of Islamic Finance in a healthy competitive climate<sup>169</sup>.

For what concern the future scenario, Germany have the potentialities to become the most important European country for the development of Islamic finance, together with the United Kingdom. The Germany's most important strengths are the great Muslim population, the actual weakness of the German banking system that could enhance the use of Islamic financial instruments, especially for the retail banking. Moreover, according to the ECB, Islamic finance could be for Germany the vehicle to strengthen trade ties with Islamic partner countries such as Turkey, that is building its Islamic finance sector in these last years<sup>170</sup>.

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<sup>168</sup> Schönenbach, R. (2011), „An Overview of Islamic Finance in Germany”

<sup>169</sup> Matthias Casper, Asma Ait Allali, WWU, 2017

<sup>170</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB Occasional Paper, June 2013

### 3.2.4 Possible future development grounds: Italy and France

Both in Italy and in France, Islamic finance has not become yet so present and so important as in the other European countries described in this chapter. However, these two countries are in a process of development of Islamic finance and have many possibilities to gain importance in this field through the European landscape.

#### **France**

Since the beginning of this century, French financial authorities have had an attitude of great openness towards Islamic finance, despite the small interest that this subject. The first act of a French authority made in order to enhance the development of Islamic finance was in 2007 when Paris Europlace, the Paris financial services-led body with the aim of developing and promoting Paris as an international financial center<sup>171</sup>, created an Islamic Finance Commission. This was the starting point for the regulation and for the spread of Islamic financial products in France, as in the same year, the Autorité des marchés financiers (AMF), issued two positions allowing *Shari'ah*-compliant investment funds and *Sukuk* listing<sup>172</sup>, which happened a few days later at Paris stock exchange.

However, compared to other Eurozone's country, France is still in an initial phase for the development of Islamic finance, and for such reason, following the example of the pioneering Luxembourg, the French regulatory authorities have adopted a series of fiscal measures with the aim of promoting Islamic financing in the country making it a more advantageous investment. As a result, in recent years France is becoming one of the favorite destinations of Islamic Funds. Furthermore, France has seen a raise in the demand of Islamic finance retail services: in June 2011, the first Islamic deposit scheme was introduced in France thanks to an Islamic window of an existing conventional bank. This service was very well received by French users, becoming just the first step of a strong future development.

The future scenario for Islamic finance in France appears to be quite brilliant because of the strong relationship that the Country has with its former-colony Islamic countries and because of its vast Islamic population.

#### **Italy**

Despite a highly uncertain scenario and an unclear legislative framework, in recent years also the Italian situation is gaining importance. In fact, in Italy there are already several *Shariatic* financial realities that seem to be able to undertake a concrete and imminent development of the Islamic market with a possible impact even at European level.

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<sup>171</sup> <https://iff.paris-europlace.com/paris/>

<sup>172</sup> Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB Occasional Paper, June 2013

Despite a Muslim population of 1,4 Million in 2016 (about 2,3% of the Italian population)<sup>173</sup> and a considerable number of Italian firms with strong relationship with GCC countries, until the beginning of the last decade, Islamic finance was considered only an “academic topic”, and nowadays the Italian financial market is the only one among the great Europeans without dedicated *Sharia'h*-compliant instruments. One of the possible reasons for this “slow approach” to Islamic finance could be that most of Italy’s Muslim population is composed by first generation’s immigrants, a very different scenario compared to France, Germany and above all, the U.K.

However, during last decade, because of the great presence of Islamic Funds with strong interest in northern Italy, especially in the city of Milan, Italian institutions started working on the legislative framework in order to catch the opportunities offered by Islamic finance. The interest that has arisen in the Country has been so strong that the Islamic Finance Forum has been held every year since 2009. In on one of these occasions, the Governor of the Bank of Italy, Ignazio Visco, told:

"The opportunity to attract foreign capital and the intensity of commercial and financial ties with the southern shore of the Mediterranean makes it increasingly important for our country and its financial system to be prepared for the knowledge and operational tools to interact with those systems that obey the principles of Islamic finance"<sup>174</sup>.

Nowadays, according to Consob<sup>175</sup>, Italy is not hosting independent Islamic financial institutions, but it is expanding its interest for Islamic finance especially for what concerns:

- the offering of Islamic financial products and services
- the possibility of raising capital from Islamic entities through conventional finance products compatible with *Shari'ah* rules
- Investments made on the Italian territory by subjects belonging to the Islamic world in compliance with the rules of conventional finance, without Islamic restrictions.

The realization of these three objectives described by Consob must be contextualized within the Italian financial system. In fact, several scholars argue that there are regulatory obstacles for any financial institution to carry out its activity following Islamic precepts. However, in a varied and fragmented scenario, the difficulty of establishing an Islamic banking system in Italy emerges because of fiscal and regulatory issues which require careful consideration and commitment by the legislator and the supervisory bodies so that this implementation can take place in the best possible way<sup>176</sup>. About this need, in 2017 the Italian Parliament worked on a law bill which however was not particularly successful and was abandoned. The bill was called

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<sup>173</sup> ISTAT, 2016

<sup>174</sup> <https://st.ilsole24ore.com/art/finanza-e-mercati/2013-04-09/finanza-islamica-visco-opportunita-144603.shtml?uuid=AbN1nblH>

<sup>175</sup> Alvaro, CONSOB (2014)

<sup>176</sup> Sabatino, 2017

“Provisions concerning the tax treatment of Islamic finance operations”<sup>177</sup> and, although it was designed for a targeted intervention on the tax treatment of Islamic financial products and it left some points of the whole unresolved, it highlighted the need for regulation of this market. However, some Italian banks are operating right now through their Islamic window, catching the possibility to both investment and savings needs of the Italian Islamic community and strengthening their relationship with Islamic investors and firms.

Nonetheless, the main sector in which Islamic finance is currently particularly developed in the Italian context is certainly that of the securities markets. In fact, nowadays there are 11 Italian companies included in the Dow Jones Islamic Market Index, among which there are also Diasorin, Luxottica, Moncler, Parmalat, Recordati, Salvatore Ferragamo and Tod’s. As it is shown in the picture below, the Italian company’s presence in this index is quite smaller than other European countries such as Switzerland (40), Germany (39) and U.K. (62), while it is near to the number of French companies (21).

### Country Breakdown

COUNTRY	NUMBER OF CONSTITUENTS	TOTAL MARKET CAP [USD MILLION]	INDEX WEIGHT [%]
Switzerland	40	1,296,118.88	27.2
United Kingdom	62	834,493.58	18.3
France	21	877,077.76	13.5
Netherlands	16	584,065.46	10.7
Germany	39	618,074.47	9.7
Denmark	16	331,509.06	6
Sweden	31	320,957.23	5.9
Finland	10	131,135.47	2.6
Spain	7	151,743.29	1.7
Italy	11	111,369.7	1.5
Ireland	7	62,841.68	1.2
Belgium	5	51,664.2	0.7
Norway	8	43,377.7	0.7
Luxembourg	2	8,216.27	0.2
Austria	2	9,855.6	0.1

Figure 9: Composition of Dow Jones Islamic Market Index based on constituents’ country of Domicile, S&P Dow Jones Indices, 2020

Indices such as the Dow Jones Islamic Market Index, as mentioned previously in this paper, are composed of a basket of *Shari’ah* compliant securities and are the subject of investment by Islamic funds. Therefore, for a company, to be included in these Islamic indices have a fundamental relevance because it means the possibility to increase the liquidity of the related securities and to increase and the possibility of collecting fresh means on the primary market<sup>178</sup>.

However, the Dow Jones Islamic Index does not represent the only financial reality in which Italian companies are present: for instance, in the Ftse Shariah All World it is possible to find thirteen Italian companies that conform to the principles of *Shari’ah*: Buzzi Unicem, Enel, Enel Green Power, Eni, Exor, Fiat, Luxottica,

<sup>177</sup> Lett: “Disposizioni concernenti il trattamento fiscale delle operazioni di finanza islamica”

<sup>178</sup> Sabatino, 2017



Parmalat, Pirelli, Prysmian, Saipem, STMicroelectronics and Tenaris<sup>179</sup>. Even if it is scarce, the presence of Italian companies in the Islamic indices, is the demonstration that more and more awareness of the companies themselves is of the importance of having a direct channel with Islamic investors.

The future scenario for Islamic finance in Italy will strongly depend on the overcoming of the regulatory difficulties of the Italian financial system. This will have a strong importance not only because the development of Islamic finance is a means to attract new investments, but also because it will give the chance to increase the liquidity into the system with the consequent reduction of the cost of capital for the companies.

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<sup>179</sup> Massaro, 2014

## 4 Case Study: Comparison between Islamic and Conventional portfolio

The main purpose of this chapter is to analyze the main differences between *Shari'ah*-compliant financial instruments and conventional financial instruments during a period of strong instability. In order to perform this analysis, during the first part of the chapter the main general aspects of these kind of instruments will be analyzed in the first place through a comparative analysis of MSCI Emerging Market index and Dow Jones Islamic Market World Index performances in the two most important period of great financial instability of this century: the beginning of “The Great Recession” and the dawn of Corona-virus outbreak recession. The final aim is to observe how Islamic financial products have been conditioned in these two periods.

Afterwards, the main topic of this paper will take place in the second part of the chapter: starting from the results obtained in these two paragraphs, a case study will be discussed. Its main purpose is to evaluate an investment in financial instruments compliant with *Shariatic* principles. The case study consists in a performance comparison between an Islamic portfolio and a conventional portfolio on a year basis through the period between 17/01/2019 and 17/01/2020.

The Islamic portfolio will be entirely composed by *Sukuk*, while conventional portfolio will be entirely composed by bonds. This choice, as it will be explained in the following pages, derive from the fact that *Sukuk* are the most important and common Islamic financial instruments and bonds are the conventional financial instruments that are more comparable with *Sukuk*. However, these two typologies of instruments have several differences, especially for what concerns the risk-profile and the pricing method. In fact, as a pre-assumption to the discussion of the case, an entire paragraph will be dedicated to analysis the main differences in terms of risk between bonds and *Sukuk*. Moreover, even the Ethical role of *Shariah*-compliant investment will be faced during the chapter and its importance will be taken into account in the explanations connected with the analysis.

The ultimate goal of this study is to evaluate the performance of the Islamic portfolio, compared to the traditional one used as a benchmark, in order to quantify the potential advantage that even a non-Islamic investor could have in deciding to opt for an investment in the *Sukuk* instead of in traditional ties. Moreover, this analysis has the objective to understand if Islamic financial products, particularly *Sukuk*, can be definitely considered as a serious investment alternative with a different risk-return profile compared to conventional instruments in order to satisfy the liquidity needs of western companies.

## 4.1 Islamic and Conventional Finance through a crisis

To understand the relationship between Islamic finance and financial crisis in the best way possible, it is necessary to contextualize it in the contemporary landscape, characterized by the typical international finance's phenomenon of "financial globalization", that Rostom define as "*a deepening of cross-border capital flows and a diversification of the assets owned in the different countries*"<sup>180</sup>.

This phenomenon explains the tight chain of interrelationships among financial markets around the world and it is the reason why an economic downturn in a single developed country has an impact not only in that specific financial market but even on all the others.

Many Scholars states that financial globalization has contributed both to the realization of strong economic growth and to a sudden development, which is the reason why this phenomenon is considered important even in the so-called developing world.

For what concerns Islamic finance, it is asserting itself more and more clearly and therefore is spreading even in several non-Islamic country, and for such reasons it seems that the globalization of Islamic finance is mainly characterized by 3 factors:

- increased cross-border capital flows
- greater participation in international Islamic financial markets
- greater presence of Islamic financial institutions in new jurisdictions with shareholders of various origins<sup>181</sup>.

In this context, a financial crisis, that is a broad term describing disruptions in the financial markets that can be associated with insolvencies, falling asset prices and disturbance on the real economy<sup>182</sup>, appears to have decisive effects on the economy and the global financial system as its disruptions spread outside the borders and disturbs the market's ability to allocate capital<sup>183</sup>.

However, every economic and financial crisis has its specificities which inevitably derive from the causes from which it has originated. The two phases of crisis on which this work will focus in the following pages are the origin of the "Great Recession" and the financial crisis induced by the pandemic state for Covid-19. These two crises have extremely different origins and for this reason it is necessary to face them separately and fulfilling the appropriate premises. However, to observe the purely financial impact, it was decided to use

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<sup>180</sup> Rostom A., «World Economics», 2014.

<sup>181</sup> Garas N. S., Thunderbird International Business Review, 49,2, 2007, p. 17.

<sup>182</sup> Hassan & Kayed, 2010; Eichengreen & Portes, 1987; Claessens & Kose, 2013

<sup>183</sup> Eichengreen & Portes, 1987

the same yardstick, that is the comparison between MSCI Emerging Market index and Dow Jones Islamic Market World Index respectively between 01/09/2008-01/09/2020 and between 17/07/2019-17/07/2020.

### 4.1.1 The 2008 Financial Meltdown

The 2008 crisis officially broke out on September 15<sup>th</sup>, 2008 with the collapse of the investment bank Lehman Brothers caused by the breakdown of the subprime mortgage system which began in the fall of 2007. This crisis immediately presented itself as a systemic financial crisis. The main financial causes of the crisis were essentially four:

- uncertainty about structured credit products.
- The phenomenon known as *securitization dispersed risks*<sup>184</sup>.
- excessive confidence by financial institutions in the assessments made by rating agencies and insufficient control by the same over the information provided by financial institutions, in fact, rating agencies have been severely criticized due to conflicts of interest in assessing credit risks.
- Inappropriate use of Credit Default Swap (CDS) and of complex instruments as Collateral Debt Obligation (CDO) that have been used even by commercial banks because of their high leverage without consider their enormous risk.

Thanks to its own principles, which prevent this kind of effects, Islamic financial instruments suffered less than conventional ones. For example, thanks to the ban of *Riba* it is not possible to have a leverage problem, while the ban of *Gharar* and *Maysir* protected them from the speculative wave that made the subprime collapse so devastating for the entire world economy. In fact, Islamic finance because of this principle has the peculiar characteristic of investing in the productive activities of the real economy and not that of speculating in the financial economy. Moreover, capital flows towards subprime loans do not reconcile with the principle based on goods and their investment should therefore be strongly discouraged.

One of the major difficulties of the subprime crisis was the uncertainty about the actual placement of loans because of their excessive distribution linked to securitization, with the natural consequence of a great risk concentration and market instability that enhanced confusion during the crisis.

The *Maysir* principle avoids this risk because it recognizes the normal concept of commercial risk but does not admits the excessive risks associated with speculation and gambling.

The resilience that Islamic finance showed during the 2008 crisis for several scholars has been the occasion to shift their attention on it.

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<sup>184</sup> the valuation of financial products took place based on models and not starting from the valuation of the market so the value of these instruments can drastically decrease, jeopardizing the functioning of the market itself.

To investigate this, it was considered of great interest to carry out a comparative analysis between a financial index composed by conventional financial instruments and an index composed by Islamic financial instruments. The two indices are respectively the “MSCI Emerging Market Index” and the “Dow Jones Islamic Market World Index”. The aim of this analysis is to observe how the two instruments performed over a one-year period affected by the world financial crisis of 2008. The chosen analysis period starts from 01/09/2008 to 01/09/2009. The reason behind the choice of is that such period of time allows to observe how the indices moved during the crisis and even how they moved in the recovery period that started in March 2009.

The Dow Jones Islamic Market World Index has been chosen because it is the most important Islamic finance index and it is mostly composed by *Sukuk*. Its main reference markets are the GCC countries, Indonesia, Malaysia and Pakistan. This last feature is the reason why MSCI Emerging Market Index has been chosen as conventional finance index in this study. In fact, this index is the most authoritative one for the emerging market and GCC countries, Indonesia, Malaysia and Pakistan are strongly taken into account. The choice of this index guarantees to the analysis the principle of territorial continuity which allows to reach more coherent conclusions.

## The Comparison

As it is possible to observe from the data obtained from *Eikon*<sup>185</sup>, between October and November of 2008 the MSCI Emerging Market Index recorded losses up to - 64,04%% on 20/11. At the beginning of March 2009, the period in which the curve began to reverse, it recorded a loss of - 59,44%, and then ended the entire analyzed one-year period with a loss reduced to only - 9.9%.

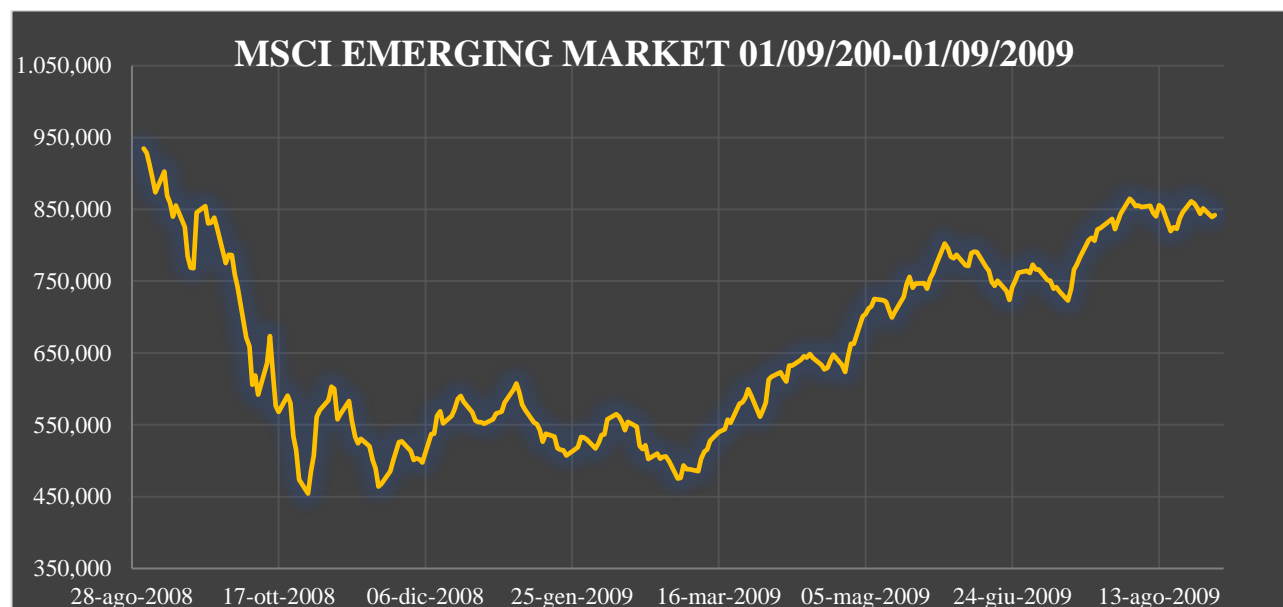


Figure 10: MSCI EMERGING MARKET INDEX price change between 01/09/2008 and 01/09/2009. Personal Excel Elaboration based on Eikon-Refinitiv data

<sup>185</sup> Set of software products provided by Refinitiv-Thomson Reuters for financial professionals to monitor and analyse financial information

Differently, the Dow Jones Islamic Market World Index suffered more contained fluctuations, especially in the first months of the analysis. In fact, during October and November of 2008 the percentage loss has never been greater than - 48,28%. However, on the first three months of 2009 the index has come to lose up to - 50,34% at the beginning of March (09/03/2008) and concluded the one-year analyzed period with a - 16,27% loss.

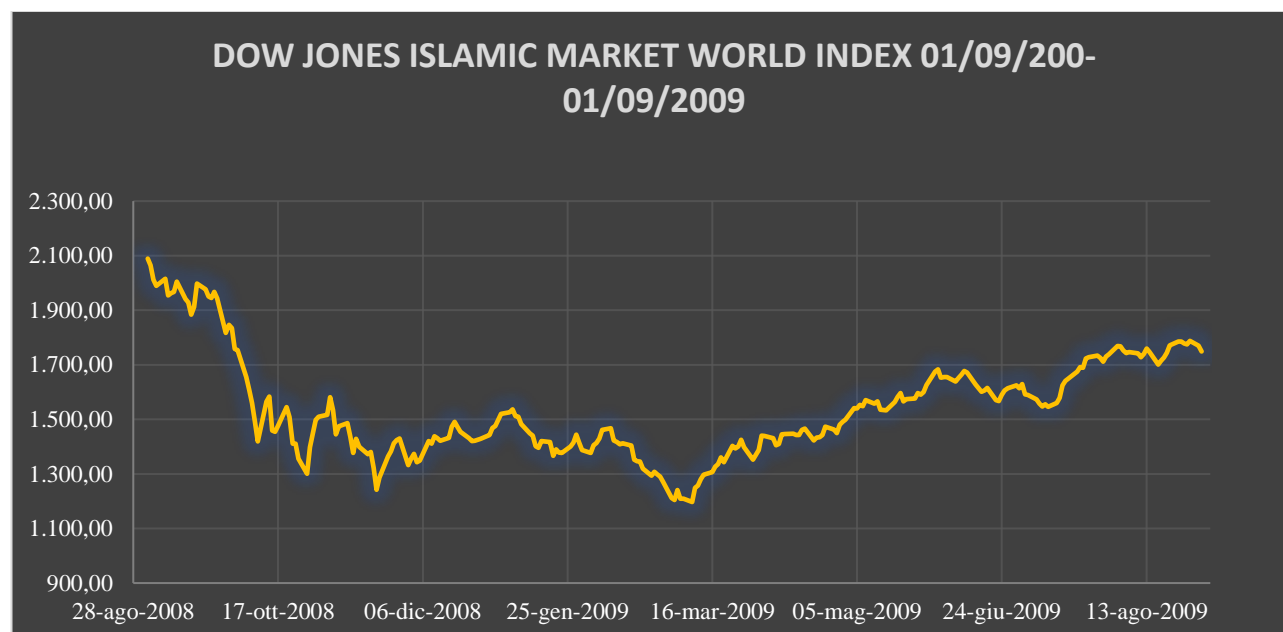


Figure 11: DOW JONES ISLAMIC WORLD MARKET INDEX price change between 01/09/2008 and 01/09/2009. Personal Excel Elaboration based on Eikon-Refinitiv data

At first sight it might seem that Islamic finance index has not been more resilient to 2008 financial crisis than conventional finance as at the end of the period the Islamic index loss' is greater than conventional one's. However, going in the deep it is possible find a rational explanation to this result: in the first months of the period, until December 2008, the crisis and turbulence had a financial nature only. For such reason, the MSCI Emerging Market Index suffered a greater loss than Don Jones Islamic World Index in that period. However, from January on, the crisis started to have a strong impact even on the real economy of every country in the world. As Islamic financial instruments are strongly related with the real economic activity and as the economy of the Islamic countries was brutally affected by the collapse of oil prices and by the recession of the United States, the principal oil importer of the world at that time, the Islamic index suffered bad losses in the first quarter of 2009 and consequently had a slow recovery in the spring of 2009 compared to conventional index. This was mainly due to the fact that it is possible to speculate on conventional instruments, while *Maysir* principle protect Islamic finance from that action.

In conclusion, this analysis shows how Islamic finance, in this turbulent context, has been more resilient than conventional finance, at least until the crisis did not affect real economy. According to Daniele Atzori-Fondazione Eni Enrico Mattei<sup>186</sup>, the initial resilience has to be attributed to the fact that to be complaint to

<sup>186</sup> Atzori Daniele, Fondazione Enrico Mattei, January 2010

*Shari'ah* Islamic finance does not rely on derivative instruments, the cause of the financial crisis. Another important factor has been the aforementioned *Gharar and Maysir* principles, which prevented Islamic financial instruments from being overwhelmed by speculative waves, and thanks to the aversion to interest-based products that protected the system from the credit-crunch.

On the other hand, once the crisis became “real” the Islamic system suffered more because of its strong reliance, at that time, on oil exports, housing market and the market-based system of infrastructure financing.

#### 4.1.2 2020 Corona-Virus Outbreak Recession

For what concerns the financial crisis induced by the pandemic state for Covid-19 occurred during the past year, this paper will be focused on the comparison between previously used indices, in this paragraph, and therefore it will be focused on a portfolio analysis-case study in the next paragraphs.

Differently from the previous crisis, in this case both the indices had the same trend both from a timely point of view and from a percentual price change point of view. In fact, during the period from 17/09/2019 to 17/09/2020, as it is possible to observe from the graph below, the MSCI EMERGING MARKET suffered a strong loss in the first quarter of 2020, reaching its minimum point on the 23<sup>rd</sup> of March with an aggregate percentage loss of - 31,29% closing the analyzed period with a price practically equal to beginning price, with a positive percentage change of +0,016%.

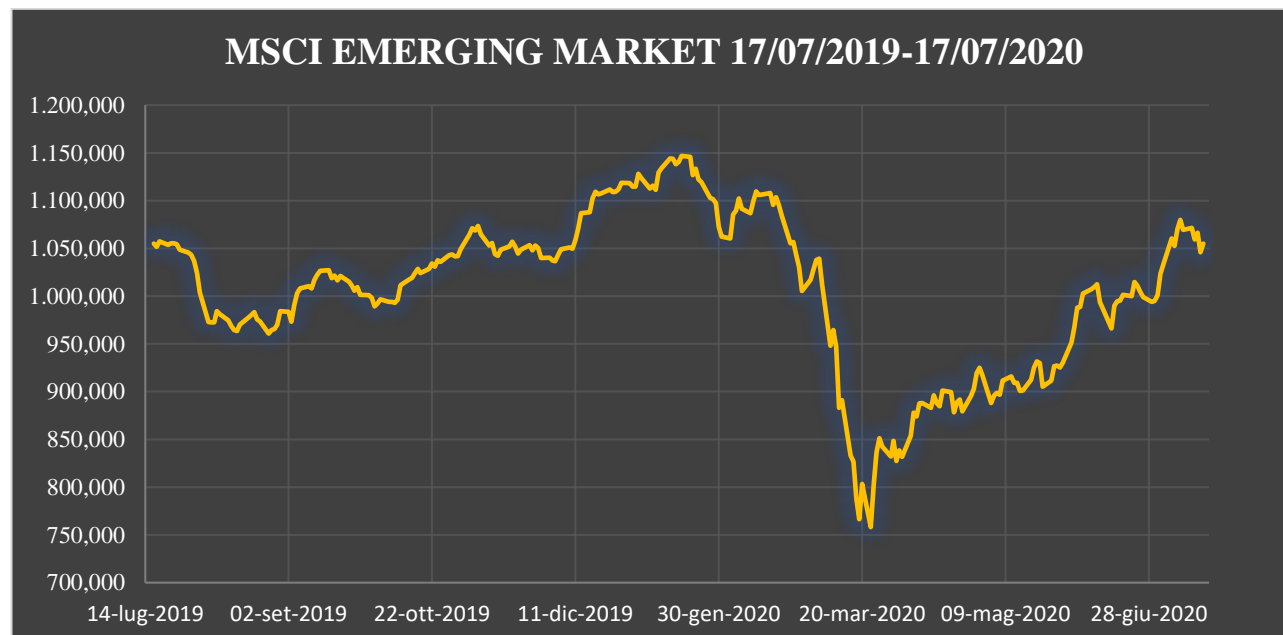


Figure 12: MSCI EMERGING MARKET INDEX price change between 17/07/2019 and 17/07/2020. Personal Excel Elaboration based on Eikon-Refinitiv data

About Dow Jones Islamic Market World Index, it is possible to do a very similar analysis: at the end of the first quarter of 2020 the index suffered a strong fall in price, with a percentage reduction of -21,26% on the 23<sup>rd</sup> of March. This reduction, calculated over the entire analyzed period, results to be more contained

compared with MSCI Emerging Market's one but, shifting the analysis on a monthly point of view, starting from 20<sup>th</sup> of February, the aggregate loss results to be equal to - 34,82 %, that is near to the loss suffered through the same period by the MSCI Emerging Market Index (- 36,27%). However, the index closed the period with a price increase of +16,88%.

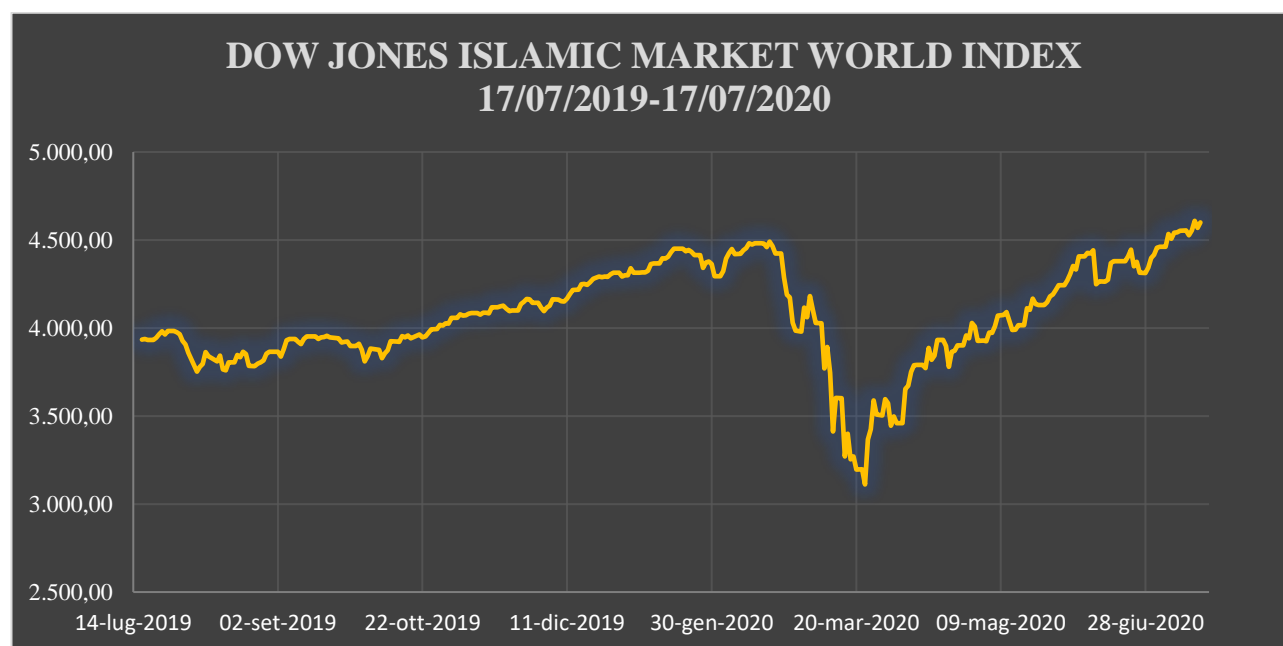


Figure 13: DOW JONES ISLAMIC MARKET WORLD INDEX price change between 17/07/2019 and 17/07/2020. Personal Excel Elaboration based on Eikon-Refinitiv data

Given that the period under analysis is particularly recent and that there are no great sources of prestige to be considered as literature, and considering the aggravation of the Covid-19 pandemic which makes every possible interpretation and above all any future indication more complex, the result of this analysis can anyhow be interpreted to reach some conclusions.

For example, the fact that both conventional finance index and Islamic finance index suffered similar losses over the period between 20/02/2020 and 23/03/2020 can be used as a confirmation that when a crisis is closely connected with the real economy Islamic finance suffers even more than conventional finance. During the peak of the pandemic almost every nation in the World decided to shut down every economic activity because of the so-called “lockdown policies” that most of the International Scientific Community and the World Health Organization (WHO) suggested in order to contain the virus spread. As a consequence, the real economy of these nations has been hit hard, as the graphs above partially witness.

As for the period prior to 20<sup>th</sup> of February, that can be considered a period of “normality”, it is graphically observable how Islamic finance index is characterized by far fewer oscillations and a much smoother trend compared to conventional one's.

In conclusion, a possible explanation for the fact that Conventional Finance index concluded the period in parity while Islamic finance index concluded with a price increase of +16,88%, can be found in the fact that



the analyzed conventional finance index focuses on emerging market, which are dependent on oil export. This feature resulted to be important during this period because of the speculative actions that the oil price suffered during April 2020, when the price reached even a negative point on 21<sup>st</sup> of April 2020 (-37 USD for one barrel). It cannot be excluded that the consequences of this speculation, combined with the geopolitical tensions that have returned to affect the Middle East and Southeast Asia, may have been the cause of the slow recovery of MSCI Emerging Market Index compared to the Dow Jones World Islamic Market Index, which could have been protected from these speculative actions thanks to *Gharar* and *Maysir* principles.

## 4.2 Case Study: Portfolio Analysis

### 4.2.1 Introduction to the project

Starting from the results of the previous paragraphs, in the following pages the work will see the discussion of a case study which aims to evaluate whether *Shaari'ah*-compliant financial instruments can be considered as a good investing and financing alternative in a period of strong financial instability. In order to reach a coherent and reliable result, the case study consist in a performance comparison between an Islamic portfolio composed by *Sukuk* and a conventional portfolio composed by Bonds, used as a benchmark.

The reason behind the decision to perform this analysis in a period of strong financial instability is to find a serious and solid investment and, above all, financing alternative to conventional financial instruments that, especially from the beginning of the century on, have been hit by periods of financial instability which have been more and more frequent, as a direct consequence of a financial system that is completely globalized. In this context, Islamic financial instruments, which have a different risk-return profile can be a good option for two reasons:

- During periods of instability they result to suffer less the impact of financial turbulence on their performance and returns.
- Looking ahead, this type of instruments will be able to gather a large audience of Islamic investors, whose large part, today, does not turn to the financial markets for reasons of faith, thanks to its religious component, and could play an important role in the development of a sustainable finance based on new ethical values because of its ethical and ESG natural predisposition.

In structuring this case study, it was also decided to build an Islamic portfolio, entirely composed of *Sukuk*, and a conventional portfolio, entirely composed of bonds. The choice to observe only bonds and not include equities in this analysis is dictated by the fact that *Sukuk* have several elements in common with conventional bonds, while there are no listed Islamic instruments that have a true comparability with equities. Furthermore, this work wants to highlight how in a moment of financial instability the *Sukuk* are more stable than conventional bonds, thus highlighting its future important role as a financing tool for companies, as well as for investors of course. In these two perspectives, it was considered fairer not to include equities in both portfolios.

## 4.2.2 Portfolio selection process

In the decision-making process that led to the selection of the securities to be included in the two portfolios, the following parameters were identified:

- Typology: Corporate bond/*Sukuk*, Government Bond/*Sukuk*
- Currency: United States Dollar (USD)
- Market: Eurobond/United States
- Issuer's Country: GCC, Indonesia, Malaysia.
- Coupon rate:  $\geq 2,50\%$ , Fixed
- Coupon frequency: semiannually
- Analyzed time-period: 17/07/2019-17/07/2020

As a first parameter it was considered appropriate to include in the study both corporate and government *Sukuk* and bond. The main reason is that, considering the peculiarities of the analyzed period, inserting these two different types in the research could have create a diversification effect.

In order to create two portfolios that were effectively comparable to each other, it was decided to adopt the US Dollar as a currency and to adopt the Eurobond<sup>187</sup> and the United States as trading market.

Therefore, for the construction of the Islamic Portfolio it has been necessary to analyze the *Sukuk* issued and that currently in circulation on regulated markets. At least at the beginning, in the process of selecting the Islamic portfolio, there were no geographical limits. However, most of *Sukuk* are issued in GCC countries, Indonesia and Malaysia. For this reason, these countries have been identified as reference issuing market.

For what concern the chosen minimum coupon rate, 2,5% is a level that is held by reliable issuers in the chosen countries. Moreover, it is not possible to find *Sukuk* or bonds with a lower yield for entities that make issues in these countries because of the intrinsic country risk.

Once identified all these factors, the *Sukuk* in the portfolio have been chosen trying to maintain a heterogeneity of the activities carried out by every *Sukuk* obligor and with the aim of including at least one sovereign *Sukuk* and one issued with the aim of financing infrastructure projects, which are some of the most important aim of *Sukuk* issuing, as stated in the previous chapters.

Moreover, it was considered of strong importance that no more than two *Sukuk* based on the same underlying asset were selected to minimize the variability related to the single financial instrument.

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<sup>187</sup> constitutes with the foreign bond market the international bond market, Fabozzi F., Modigliani F., Jones F. (2010), Bankpedia.com

Another important feature of the research is without doubt the *Sukuk* rating: it was chosen Moody's as reference agency and have been selected only *Sukuk* with a rating of at least Baa3. This choice made it possible to select only securities with good financial reliability. Consequently, it has been preferred to insert only one asset backed *Sukuk* because this kind of Islamic bond is usually less reliable than the asset based one.

In the end, it was decided to choose the period 17/07/2019-17/07/2020 as analysed period because it was a period characterized by great stability in the first place, up to January 2020, and then by exceptional instability especially during February, March and April.

After several researches on Eikon, the software provided by Refinitiv-Thomson Reuters, and after analysing several combinations of *Sukuk*, the followings summarized in the table below have been included in the Islamic portfolio.

Figure 14: Islamic Portfolio composition prospect (personal elaboration)<sup>188</sup>

ISIN	Description	Issuer-SPV	Sukuk Obligor	Obligor's Country	Coupon	Maturity Date	Underlying Activity	Moody's Rating	Risk Classification
US71567RAA41	PPSIB 3.300	PERUSAHAAN PENERBIT SURAT BERHARGA SYARIAH NEGARA INDONESIA III	Republic of Indonesia	Indonesia	3,30%	21/11/2022	Ijarah	Baa2	Asset-Based
US48266XAA37	KSASK 2.894	KSA SUKUK LIMITED	Saudi Arabia Kingdom	Saudi Arabia	2,89%	20/04/2022	Other	A1	Asset-Based
XS1419869968	COROY 3.908	DP WORLD CRESCENT LTD	DP World PLC	UAE	3,91%	31/05/2023	Murabaha	Baa3	Asset-Based
XS1387925958	DISB 3.600	DIB SUKUK LTD	DUBAI ISLAMIC BANK PJSC	UAE	3,60%	30/03/2021	Wakala bil Istihmar	A3	Asset-Backed
XS0778097674	MAPEF 6.450	DUBAI DOF SUKUK LTD	Emirate of Dubai	UAE	6,45%	02/05/2022	Ijarah	Aa3	Asset-Based

As it is possible to observe from the table, there are three *Sukuk*, PPSIB 3.300, KSASK 2.894 and MAPEF 6.450, which have a Sovereign State as obligor (Indonesia, Saudi Arabia and the Emirate of Dubai). However, just MAPEF 6.450 has been issued by the State department of finance, and consequently it is the only *Sukuk* in the Islamic portfolio that can be considered completely a “Sovereign *Sukuk*”. On the other hand, PPSIB 3.300, KSASK 2.894 have been issued by their own government through their SPV and they are two entities whose purpose is to collect money to finance industrial and infrastructure projects. Inter alia, KSASK 2.894 has been issued by the Saudi Arabian Kingdom on the U.S. market because they have the project to finance

<sup>188</sup> Personal elaboration based on data taken from Eikon-Refinitiv-Thomson Reuters

infrastructure in Saudi Arabia together with American partners and to finance industrial projects even on American soil.

For what concern COROY 3.908 and DISB 3.600, the former, has been issued by the SPV whose obligor is DP World PLC<sup>189</sup>, the latter has been issued by the Dubai Islamic Bank. DISB 3.600 can be considered in a little different way from the others because its underlying activity is a *Wakala bil Istihmar*, which is an insurance instrument, and that is basically the reason why this *Sukuk* have an “asset backed” risk classification. For what concern the construction of the conventional portfolio, essentially the same criteria used for the construction of the Islamic portfolio have been followed, with the obvious exclusion of the ones were just applicable to Islamic finance features.

Also in this case, after analyzing dozens of Bonds’ combinations on Eikon-Refinitiv-Thomson Reuters platform, the followings bonds have been chosen to be part of the conventional portfolio to be used as a benchmark in this case study, as it is observable from the table below.

ISIN	Description	Issuer	Issuer's Country	Coupon	Maturity Date	Moody's Rating
XS1877841400	ARPEI 4.125	ARAB PETROLEUM INVESTMENTS CORP	Saudi Arabia	4,13%	18/09/2023	Aa2
USY7140WAB47	INALM 5.710	INDONESIA ASAHAN ALUMINIUM (PERSERO) PT	Indonesia	5,71%	15/11/2023	Baa2
XS1659030305	AXBK 3.000	AXIS BANK LTD (DUBAI BRANCH)	UAE	3,00%	08/08/2022	Baa3
XS0863524277	TAQA 3.625	ABU DHABI NATIONAL ENERGY COMPANY PJSC	UAE	3,63%	12/01/2023	Aa3
XS1696908471	ABUDB 2.500	EMIRATE OF ABU DHABI	UAE	2,50%	11/10/2022	Aa3

Figure 15: Conventional Portfolio composition prospect (personal elaboration)<sup>190</sup>

For the conventional portfolio has been selected just one government bond, ABUDB 2.500, issued by the Emirate of Abu Dhabi. The decision of pick just one government bond is due to the fact that the yields of government bonds are contained and flattened on 2.50% level. This in a certain sense would have conditioned the case study and would have ended up lowering too much the return of the conventional portfolio. Furthermore, finding government bonds of the selected countries presented some problems as GCC countries, Indonesia and Malaysia prefer the issuance of sovereign *Sukuk* to that of government bonds or bonds issued in their own currency.

<sup>189</sup> Dubai Port World PLC

<sup>190</sup> Personal elaboration based on data taken from Eikon-Refinitiv-Thomson Reuters

Moreover, oil companies and oil related companies have not been considered too much because of the heavy speculation that hit the sector during March and April. For such reason just one oil company bond, Arab Petroleum Investments Corporation, has been included in the portfolio because of the importance that this field represent for the selected countries.

For what concern the Abu Dhabi National Energy Company bond-TAQA 3.625, it has been inserted in the portfolio because it is a State-owned company and for this reason it can have the same role that have a *Sukuk* issued by a State-linked SPV. Moreover, it is not a classic oil company but is an energy conglomerate that have water desalinization, metal extraction and investing services between its activities.

Anyway, in order to better understand the whole case study, it is better to understand the differences between *Sukuk* and bonds in terms of risk-return profile. For such reason, the next paragraph will briefly face this issue before going into depth on how the case study has been conducted and which results and conclusions have been produced.

### 4.2.3 Important risk Differences between Sukuk and Bonds

The following paragraph will address the fundamental differences between Islamic finance and traditional finance from a risk the point of view. As described in the table below, the major risks identified and studied are credit risk, market risk, liquidity risk, operational and *Shari'ah*-compliance risks and capital structure risk. Each of these risk categories has aspects which in Islamic finance are completely different from those which it presents in traditional finance. Through this chapter, Interest rate will be added to these categories, which represent the most important risk differences between conventional financial instruments and Islamic ones.

Type of financial risk	Conventional Finance	Islamic Finance
<b>Credit Risk</b>	Default value at risk	Default value at risk and income expectation for sharing-based assets
<b>Market Risk</b>	Volatility of market variables	A lower degree of market volatility
<b>Liquidity Risk</b>	Maturity mismatching and alternative funding sources	Maturity mismatching and alternative funding sources
<b>Operational Risk</b>	System problem and fraud	Compliance with <i>Shari'ah</i> rules
<b>Capital Structure</b>	Level of capitalization	Composition of capital instruments issued by Islamic financial institutions

Figure 16: Main financial risk for Conventional finance and for Islamic finance<sup>191</sup>

<sup>191</sup> Personal elaboration based on Filippo di Mauro, Pierluigi Caristi, Stéphane Couderc, Angela Di Maria, Lauren Ho, Baljeet Kaur Grewal, Sergio Masciantonio, Steven Ongena and Sajjad Zaher, ECB Occasional Paper, June 2013, and KFH Research.

## Credit and Counterpart Risk

Credit risk, or counterpart risk, refers to the likelihood that an asset will become uncollectible due to a default (for example because of the bankruptcy of the counterpart), to a severe late payment that create a financial damage or to the fact that one of the parties retracts on the conditions of the contract.

This typology of risk is therefore presented as the possibility for the investor to lose both its periodical cash flows and even its the principal amount of their investment.

The main difference between bond and *Sukuk* is that the former offers more assurance to the investors because their regulations has been already established since years. On the other hand, *Sukuk* market is still young and there are still few cases of State's interference with the aim of establishing clear rules to protect the investors from an eventual insolvency. Moreover, in the credit risk for *Sukuk* it is necessary to consider even the aspects linked with the profit-and-loss- sharing investments: from this point of view, the investor could be considered more protected, but this aspect makes a risk assessment very difficult.

## Liquidity Risk

The difference between the liquidity risk for Bond and *Sukuk* is given the fact that for Bonds exists a developed international secondary market, while for *Sukuk* it does not exists. Obviously, a small secondary market does not allow the investor to liquidate the assets in an efficient way, and that is the reason why most *Sukuk* tend to be held until maturity. Obviously, this aspect strongly affects the traded volume of conventional bond.

## Operational and *Shari'ah*-compliance Risk

While in conventional finance the operational risk concerns all aspects of compliance with the anti-fraud rules, in Islamic finance this means only one thing: *Shari'ah*-compliance risk.

This aspect is particularly important for what concerns *Sukuk*. In fact, there are studies carried out by several scholars<sup>192</sup> which all conclude that *Shari'ah*-compliant transactions in Western jurisdictions are the necessary condition for ensure the integration of Islamic finance with conventional market. According to the previously cited scholars, this process could be realized building a new framework for governing a *Sukuk* issuance with respect to *Shari'ah* precepts.

In addition, investments in *Sukuk* give rise to several accounting and reporting issues related to accounting and disclosure. An important case is the more transparency that is usually required because of the riskier profile that *Sukuk* have compared to bonds.

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<sup>192</sup> McMillen, 2007, Rahman, 2003, Oseni & Hassan, 2015

A well-structured accounting and reporting standard for Islamic financial instruments is the most important requirement for a well-regulated Islamic financial market that is able to meet *Shari'ah law* and market requirements. During the last year, the AAOIFI has worked with the aim to provide financial instruments that are compliant both with *Shari'ah* and with the relevant legal requirements not only on an Islamic base but also on cross-country one.

## Interest rate Risk

As the finance's theory states, interest rate is one of the factors that affect bonds' price: an interest rate's growth means that the yield for bonds will have to adjust to being higher than the interest rate and vice versa because of the inverse relationship between yield and price.

Clearly this risk with the *Sukuk* is interpreted in a completely different way due to the ban of *Riba*, which prohibit the use of interest within every Islamic contract and transaction. For such reason, the fluctuation of *Sukuk* is dependent from the fluctuations of the underlying activity and it is not exposed to a classic interest rate risk.

The main difference is that, although bonds and *Sukuk* are similar financial instruments in terms of issuance and purpose, they turn out to have very strong dissimilarities as regards pricing: while the pricing of the bonds follows the rule mentioned above, *Sukuk* do not follow a unanimous rule as they depend on the underlying asset and therefore, even if listed, they end up following the typical logic of the OTC<sup>193</sup> market for their pricing.

### 4.2.4 The role of Ethical investments

By their own predisposition, Islamic financial instruments are characterized by a strong ethical vocation that, thanks to the recent tendencies for western investors that are looking at ESG investments, are the cause of the foregone development of Islamic finance in western markets.

This ethical dimension has found full realization in the *Sukuk*, as these are the Islamic instruments that are characterized by greater volumes of money and that collect it based on the convenience of the project to be financed, but also thanks to its purpose.

The purpose for which the *Sukuk* was issued was also taken into account for the construction of the portfolio analyzed. However, although the initial intention was to include at least one “Green *Sukuk*” within the Islamic portfolio, this was not possible due to the maturity of the “Green *Sukuk*” which appear to be very far in time and therefore not in line with the established parameters.

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<sup>193</sup> Over the Counter



However, due to the stringent rules that the *Shari'ah* imposes in the issuance of *Sukuk*, although the selected ones cannot be considered within the ESG dimension, they still respect the very high level ethical-moral dictates typical of Islamic law.

#### 4.2.5 Performance Analysis: July 2019-July 2020

The comparative performance analysis between the Islamic portfolio and the conventional Portfolio used as a benchmark has been conducted on the basis of the main performance indices, as analysing just the portfolio return would have been reductive since it is not able to consider all the other variables capable of playing an important role within the evaluation process.

The unconventional choice of not using a classic risk-free activity but the conventional portfolio as a benchmark was given precisely by the particularity of the analysis carried out in this work.

In fact, using a traditional benchmark would have had a limited significance since *Sukuk*, as described in the previous paragraphs, have points in common with traditional bonds but are not fully comparable. This is the reason why in the construction of the conventional portfolio has been made a careful choice of the bonds to be included with regard to the country of issue, the maturity, the past fluctuations and also, as it appears to be a very important aspect in the Islamic context, the reason for the issuing of the bond. This last factor is what caused the greater complexity of the analysis carried out.

However, after selecting the securities of both portfolios respecting all the established criteria and making the two portfolios as comparable as possible, it has been established how to perform the study comparison.

First, as performance evaluation tools have been considered the average returns of the period, observed on daily basis, then the standard deviation has been calculated and used as a measure of risk. It was preferred to use daily returns because, given the high instability of the period under analysis, it seemed that the daily variations may be more significant than the weekly ones. Then, performance indicators were also analyzed at a later stage

After analyzing yield and price from 17/07/2019 to 17/07/2020 thanks to the data obtained from Eikon-Thomson Reuters, the following findings were obtained both on the Islamic portfolio and on the conventional benchmark portfolio as described in the two summary tables below.

### Islamic Portfolio

	KSASK	MAPEF	DISB	PPSIB	COROY	Average
<b>Average Return</b>	2,07%	2,67%	2,88%	2,62%	3,19%	<b>2,69%</b>
<b>Variance</b>	0,00%	0,01%	0,00%	0,00%	0,01%	<b>0,01%</b>
<b>Standard Dev.</b>	0,50%	0,92%	0,66%	0,45%	1,03%	<b>0,71%</b>
<b>Excess Return</b>	0,02%	-0,05%	-0,001%	-0,003%	-0,08%	<b>-0,02%</b>

Figure 17: Table representing financial data of Islamic portfolio based on Eikon financial data<sup>194</sup>

### Conventional Portfolio- Benchmark

	TAQA	ARPEI	AXBK	INALM	ABUDB	Average
<b>Average Return</b>	2,42%	2,55%	3,15%	3,39%	1,91%	<b>2,68%</b>
<b>Variance</b>	0,00%	0,00%	0,01%	0,01%	0,00%	<b>0,00%</b>
<b>Standard Dev.</b>	0,51%	0,59%	0,80%	0,82%	0,43%	<b>0,63%</b>
<b>Excess Return</b>	-0,13%	-0,68%	-0,24%	1,48%	-0,79%	<b>-0,07%</b>

Figure 18: Table representing financial data of conventional portfolio based on Eikon financial data<sup>195</sup>

Looking at the data it is possible to see how the average return of the two portfolios over the period has been very similar, with the Islamic portfolio having a slightly higher average return. This result is consistent with what was previously observed with the trend of the indices. In fact, exactly as happened in the previous analyzed case, Islamic *Sukuk* have had a better reaction to this period of financial turbulence induced by the health emergency than conventional stocks. Compared to what has been observed with the indices, this gap in terms of yield is very limited as only one oil-based stock has been included in the conventional portfolio. Therefore, the two portfolios set up, especially the conventional one for its own nature, appear to have been set up with securities not overwhelmed by period speculations, which potentially gives the analysis a strong reliability.

<sup>194</sup> Personal Elaboration

<sup>195</sup> Personal Elaboration

For what concern the standard deviation, that as written at the beginning of the paragraph has been assumed as a risk measure, it result to be higher in the Islamic portfolio, demonstrating that investing in *Sukuk* presents more risks than investing in bonds. This aspect appears to be consistent with the nature of Islamic bonds, especially as regards to the risks presented in the previous paragraph. In fact, one of the factors that could expose the greater risk of *Sukuk* compared to conventional bonds is the incorporation of its greater liquidity risk and above all its operational and *Shari'ah*-compliance risk.

The data about the excess returns, together with previous data result to be important because can tell the investor the capability of a portfolio to have limited fluctuations, resulting to be a sort of indicator of stability for the portfolio. Observing the data, it is possible to say that the Islamic portfolio, during the turbulent analyzed period, had a better stability than conventional portfolio.

However, the performance evaluation process has not been based just on the evaluation of these data, but also the evaluation of the performance indicators, because they can give a greater understanding and description of the true values expressed by the portfolios.

The comparison has been therefore conducted over the same time frame and with homogeneous surveys, to avoid a distortion in the assessment and using the following risk-adjusted performance indicators:

- Sharpe Ratio
- Modigliani RAP (**RAPM**)
- Traynor Ratio
- Tracking Error Volatility (**TEV**)
- Information Ratio

The results of these indicators are resumed in the table below.

<b>Sharpe Ratio</b>	<b>0,43%</b>
<b>Traynor Ratio</b>	<b>0,08%</b>
<b>Risk-Adjusted-Performance-Modigliani (RAPM)</b>	<b>2,69%</b>
<b>Tracking Error Volatility (TEV)</b>	<b>0,71%</b>
<b>Information Ratio</b>	<b>0,43%</b>

Figure 19: Portfolio Measures calculated on Islamic portfolio considering Conventional as a benchmark

## Sharpe Ratio

The Sharpe ratio is one of the most correct performance indicators about risk: it defines the trade-off which is obtained combining in a portfolio the fund with a considered risk-free asset, that is it measures the excess return of a securities per unit of risk compared to the return of a benchmark, usually considered as risk-free.

$$\text{Sharpe Ratio} = \frac{R_p - R_b}{\sigma_p}$$

Where:

- $R_p$  = Islamic Portfolio average return
- $R_b$  = Conventional-Benchmark Portfolio average return
- $\sigma_p$ , which is standard deviation of the portfolio, represents the total historical risk of the Islamic portfolio.

This indicator is useful because it help the investor to understand if he can employ his capital in a risk-free activity or choose an alternative investment, provided that the increase in risk resulting from this choice is well offset by the excess return thus obtained.

In the analyzed case, considering that it has been calculated assuming the conventional portfolio as the benchmark portfolio, the Sharpe ratio results to be positive: 0,43%. In calculating this indicator, the return and risk of the Islamic portfolio are made equal to those of the conventional one. In this way, this means that the indicator measures the capability of the Islamic portfolio to perform better than Conventional portfolio. Thus, showing the ability of the Islamic portfolio to beat the benchmark, in this case it directs the investor's choice towards a non-conventional Islamic investment.

The Sharpe ratio is useful as it is easy to calculate and allows an immediate comparison of mutual fund performance. This explains why it is very popular.

However, the fact that it is an indicator that does not consider just systematic risk but even every other risk in the correction of the excess return means that it is a valid measure of performance for an investor which puts all his wealth in a single fund. To calculate the Treynor ratio can be a solution to overcome this aspect because Treynor ratio takes into account only systematic risk.

## Treynor Ratio

The Treynor ratio, also known as the reward-to-volatility ratio, is a performance metric for determining how much excess return was generated for each unit of risk taken on by a portfolio. Excess return in this sense refers to the return earned in excess to the one that could have been earned with the benchmark investment.

Its formula is:

$$\text{Treynor Ratio} = \frac{R_p - R_b}{\beta_p}$$

Where  $\beta_p$  represent the systematic risk of the Islamic portfolio.

In this case, Treynor Ratio results to be positive: 0,08%. According to this result, the Islamic portfolio would beat the conventional portfolio by a very limited amount, thus leaving the investor on the edge of indifference between the two choices. However, this result is conditioned by the beta.

In fact, in this analysis further reasonings have been carried on considering even the beta of both portfolios. However, since the instrument analyzed are bonds, every reasoning based on Beta is subjected to great limitations and assumptions.

Beta-Bottom-up method			
KSASK	0,012	TAQA	0,043
MAPEF	0,047	ARPEI	-0,014
DISB	0,024	AXBK	0,158
PPSIB	0,032	INALM	0,032
COROY	0,073	ABUDB	0,004
<b>Beta Islamic Portfolio</b>		<b>Beta Conventional Portfolio</b>	
<b>0,038</b>		<b>0,044</b>	

Figure 20: Beta prospect of both Portfolios<sup>196</sup>, bottom-up method.

Beta is the coefficient that defines the measure of the systematic risk of a financial asset, or the tendency of the return of an asset to vary as a result of market changes. It measures the exposure of a share to systematic risk under the Capital Asset Pricing Model. Beta is a measure of the systematic riskiness of the stock: it measures the expected change in the return of the stock for each change of one percentage point in the market return<sup>197</sup>. The expected return of a stock varies linearly with the beta of the stock itself. When it is greater than 1, the asset is riskier than the market because it tends to amplify market movements<sup>198</sup>.

In this case, both beta of Islamic and conventional, calculated considering, respectively Dow Jones Islamic Market World Index and MSCI emerging market index as market index to perform the regression calculation, are smaller than 1, so the two portfolios are less risky than the market. The Islamic portfolio turns out to be even less reliant on market movement than the conventional portfolio as its beta is equal to 0,038, while conventional beta is equal to 0,044.

<sup>196</sup> Personal elaboration

<sup>197</sup> Fabozzi F., Modigliani F., Jones F. (2010)

<sup>198</sup> Fabozzi F., Modigliani F., Jones F. (2010)

However, this risk indicator is used in most cases for equities. This is because it is part of the very essence of the bond to move in accordance with the market thanks to the inverse price-yield relationship. According to what has been written in the previous part of the chapter, *Sukuk* cannot be valued in all respects like bonds. For this reason, in this analysis it is present a beta calculation, with the bottom-up method as shown in the table above. Anyway, aware of the little significance that beta possesses when adapted to bonds, it has been used only for the calculation of the Traynor Ratio that will not be fully taken into account in final considerations for the same reasons.

### Modigliani Risk-Adjusted-Performance indicator (RAPM).

After the Sharpe ratio, the analysis focused on a linked index: the Modigliani Risk-Adjusted-Performance indicator (RAPM). The formula of this indicator is:

$$RAPM = (Rp - Rb) * \left(\frac{\sigma p}{\sigma b}\right) + Rb$$

Where:

- Rp = portfolio Return
- Rb = Benchmark Return
- $\sigma p$  = total historical risk of the portfolio.
- $\sigma b$  = total historical risk of the benchmark.

The RAPM index corrects the risk of the portfolio making it equal to market risk and then, subsequently, measures its return. This index, therefore, determines the return the portfolio would have achieved if it had assumed the same level of risk as the benchmark. In the case under analysis, therefore, the detection of a Modigliani RAP index of 2,69% indicates the ability of the Islamic portfolio to perform with a return much greater than the conventional portfolio even in the hypothesis of assuming the risk associated with the conventional benchmark portfolio.

### Tracking Error Volatility and Information Ratio

The Tracking Error Volatility represents the added value that the portfolio has produced compared to the benchmark. It can also be explained as the standard deviation of the excess returns compared to the average of the entire period.

The formula of this indicator is:

$$TEV = \sqrt{\left[\left(\frac{1}{n}\right) * \sum_{n=1}^n (Rp, n - Rb, n)\right]}$$

Where:

- $R_p$  = portfolio Return
- $R_b$  = Benchmark Return

In this analysis, its value of 0,71% could show that the Islamic portfolio has produced more added value compared to conventional portfolio during the analyzed year.

However, due to its predisposition and attitude, the Tracking Error Volatility is suitable for comparing a set of assets characterized by different investment objectives or by different benchmarks and risk levels, so in this perspective, its usefulness within this analysis appears to be limited.

For this reason, the real aim of calculating this indicator is that through its calculation it is possible to reach the measurement of the Information Ratio.

$$\text{Information Ratio} = \frac{R_p - R_b}{\text{TEV}}$$

The aim of this indicator is to assess whether the portfolio return is significantly larger than those of the benchmark. The Information Ratio has the property of synthesizing both a measure of extra-return and a measure of extra-risk of the portfolio with respect to the benchmark and it is one of the main instruments of evaluation of active portfolio management and is therefore very popular in the marketplace<sup>199</sup>.

Within this analysis, the Information ratio turns out to be about 0,43%, which means that the Islamic portfolio had the capability to beat the benchmark, even if with a contained value.

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<sup>199</sup> Fama, F., E.K. and K. French, (1992)



## 4.3 Final Considerations

By examining the indices described above, it appears clearly that in the period between 17/07/2019 and 17/07/2020, the Islamic portfolio outperformed the conventional portfolio even if although this did not happen with large aspect ratios.

This result appears consistent with what was observed in the analysis between the Dow Jones Islamic World Index and MSCI Emerging Market Index where, as observed, the Islamic index had concluded its path during the same period of time with a slightly positive price change, while the MSCI Emerging Market Index closed with a decline of around 16%.

In the case study, the two constructed portfolios appear to have had very similar values in terms of average return and even in terms of excess return, with the Islamic Portfolio which has always recorded slightly better values than the conventional portfolio. For what concern the performance indicators, every one of them show a better performance in terms of return or in terms of risk for the Islamic portfolio. The explanations about it can be manifold.

Without doubts, the stock selection method used for the construction of this portfolio strongly limited all distorting effects linked to business sectors and linked to territorial factors. In addition, the distorting effects created by the pandemic from Covid-19 were also limited, as they were not included in both securities portfolios of companies that in some way benefited from the pandemic condition.

This difference in performance can be explained by the intrinsic characteristics of the *Sukuk* described above which in fact detach this Islamic finance tool from conventional mechanisms. In fact, it is possible to read the effects of the principle of ban of *Riba*, *Gharar* and *Maysir* as the cause of the better performance of a portfolio made up entirely of *Sukuk* compared to a portfolio made up entirely of Bonds. The first has a decisive impact on the pricing of the *Sukuk* which, unlike the Bonds, are not affected by the interest rate, the others ensure that a portfolio of *Sukuk* is not affected by speculations from which the bonds are not protected.

Another factor to consider is that the *Sukuk*, as previously repeated several times, have a strong connection with the real economy. The one analyzed was a period, starting from February, of strong financial instability which was a precursor to the great global economic problems which then arose. For the first time in modern history there has been, for every country on the Planet, a strong economic crisis linked to a health emergency that already had put several nations to their limit. In this context, for the first time, the real economy had a setback at the same time as it did for the financial economy.

Unlike to what happened in 2008, when Islamic financial instruments had suffered very limited losses compared to conventional ones until the crisis evolved from financial to real, during this period Islamic finance suffered in the same way as conventional finance.

However, assuming that given the extraordinary nature of this period has led to events and distortions that have yet to be investigated by many scholars, and also premising that future developments regarding both financial and economic recovery present uncertainties that are difficult to read, this analysis has shown that however, an Islamic portfolio performed better than a conventional portfolio.

It should be noted that this result was found by not including equities in the portfolio. This is not a choice to be neglected as it is very rare to find investment portfolios consisting solely of bonds. However, as already mentioned in the introduction to the case study, this choice was dictated by the fact that there are no listed Islamic instruments comparable to shares, and the only way to perform this study was to compare the two most similar instruments. , that is. *Sukuk* and bonds.

Having repeated this necessary clarification, the results given by the analysis carried out in this paper remains. In fact, with these results it can be said that what was defined as the ultimate purpose of this paper has been confirmed: in a phase of financial instability an Islamic portfolio performs better than a conventional portfolio.

## Conclusion

The objective of this thesis was to structure a global analysis on Islamic finance, starting from its religious fundamentals to then come to observe its financial peculiarities.

With regard to this last aspect it was decided to study it through a comparison between a performance analysis of traditional financial instruments and Islamic ones in a period of strong financial instability.

This need for study was born by reflecting on the various phases of financial turbulence that the global economy has faced over the years and which have become increasingly frequent for reasons that are always different from each other.

The results obtained both from the research work on Islamic principles and on the current state of development of Islamic finance and from the case study were able to answer the great question posed during the introduction, that is, if Islamic finance can be considered a serious and reliable investment alternative for non-Islamic investors.

The affirmative answer to this question derives mainly from the greater stability that Islamic financial securities, especially the *Sukuk*, guarantee compared to conventional ones in the presence of strong financial instability.

As already partially anticipated in the comment phase of the case study, in this work two analyses were addressed, one of a general nature and another one focused on the performance factors.

In the first case two analysis that compared an Islamic financial index and a conventional financial index with territorial commonalities with the Islamic index have been carried out. The main purpose of this analysis was to observe how these two financial universes had been conditioned by two highly critical periods, the global financial meltdown of 2008 and the financial crisis linked with the Corona-Virus outbreak recession of the first semester of 2020, analysing the period in a global perspective. In the second case, the focus has been shifted on the performance analysis between an Islamic portfolio entirely composed by *Sukuk* and a conventional one entirely composed by bonds.

Both the analysis gave the same result: Islamic financial instruments they have greater resilience than conventional instruments in times of severe financial instability. This turn out to be true both in terms of stability and in terms of performance, with Islamic instruments that are protected from interest rate risk and from speculations thanks to their religious principles, *Riba*, *Gharar* and *Maysir*.

Because of the strong ethical and religious framework on which Islamic finance it turned out to be strongly connected with the real economy than to conventional finance. This last aspect, which has already been addressed by several Islamic finance scholars, has found confirmation in the results of the work carried out, giving rise to various conclusions.

From the point of view with which this paper was conceived, the thought that is considered to be interesting is that, because Islamic securities offers certain advantages and because they protect the investments even during periods of financial instability, they could be also considered by medium-sized non-Islamic companies as financing tools. From this point of view in the future we could see a remarkable development since the philosophy of Islamic finance is well linked to an idea of a more sustainable development and above all it can be an excellent vehicle for foreign investments. Furthermore, since the project and its implementation are of fundamental importance for the financial contract to go to a good end, these could be a totally new guarantees for both the investor and the lender.

Moreover, considering Islamic financing tools, western companies would add to their circle of possible financiers all those Muslim investors who do not use conventional investment instruments for reasons of faith. It is a pool of potential investors of several tens of millions of people, which if addressed, could give a change to the liquidity problems of many non-Islamic Medium Enterprises.

Surely Islamic finance needs improvements and evolutions especially from the point of view of creation and the secondary market, but the studies carried on in this thesis show how it already represents a good investment tool and, especially in a future prospective, of financing.

## Abstract: The Thesis' Summary

The Islamic economic model has its peculiarity in its foundation, *Shari'ah*, the Divine Law of Islam, which prescribes guidelines for every aspect of Muslim life, from religion to business. Al-Ukhuwwa, I. and R. Levy define Islamic finance as a banking concept that satisfies the divine law in both form and spirit and financial practices that conform to Islamic law as *Shari'ah-compliant financing* (SCF). To be defined *Shari'ah-compliant*, every Islamic financial activity has to respect 6 Islamic principles relevant for finance:

- **Prohibition of interest: *Riba***
- **Prohibition of informational asymmetry: *Gharar***
- **Prohibition of speculation and gambling: *Maysir***
- **Prohibition of investing in *Haram* (forbidden) activities**
- **Profit and Loss Sharing Principle**
- **Imperative of doing charity: *Zakat***
- **Money is not a commodity**

Coherently with the principles mentioned above, Islamic *halal* finance products are defined by Hussain, Shahmoradi, and Turk as contract-based products classified into three broad categories: **Debt-like-Financing, Profit-and-loss-sharing-like-Financing (PLS-Financing), and Services**. Among all the Debt-Like financing contracts, *Murabaha* is the most important. It is a trade plus mark-up halal short-term financing practice. From an operative point of view, *Murabaha* contracts can act as a surrogate for mortgage financing, but with the obligation of having ownership of the good to trade. Then, two financial instruments represent the exceptions to the Islamic principle of *Gharar*. *The first is Salam*, a sale contract where the price for the good is paid in advance, after the deal, while the delivery of the purchased good takes place in a future date decided ex-ante<sup>200</sup>. The gain for the financier is the difference between the agreed price and the market price of the same goods<sup>201</sup>. The second is *Istina*, a sales agreement in which the goods are negotiated before they exist physically. These contracts adapt very well to the financing of work in progress linked to infrastructure projects' development. The last Debt-Financing contract is the *Ijarah*, which can be compared to “operative leasing” since it is based on the split between ownership and possession between the user (*lessee*) and the financier (*lessor*).

Shifting to PLS-like-financing, the PLS principle is expressed through two financial instruments. Starting from *Mudarabah*, it belongs to the “profit-sharing and loss-bearing” financing modality. This contract involves two actors: the financier, *Rabb al-mal*, that entrusts money to the other part, *Mudarib*<sup>202</sup>, the entrepreneur or labor partner. The lender provides capital, while the entrepreneur brings his experience and know-how with the

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<sup>200</sup> AIAF 167, October 2015, ISSN 2280-949X

<sup>201</sup> Gatti Stefano, *Project Finance in Theory and Practice* (Third Edition), Academic Press, 2018

<sup>202</sup> Elasrag, Hussein, 09. April 2011

objective to gain a profitable return from the investment, without demanding any compensation for the concrete management of the operation. According to a proportion established ex-ante, the profits made are shared between the two subjects, while losses would be borne by the financier. On the other hand, *Musharakah* is a “pure profit and loss sharing”-equity-like investment in which two or more subjects bring together their risk capital with the aim of carrying out an activity, in a mechanism comparable to the western “Joint Venture”. The profits deriving from the partnership are distributed according to an ex-ante agreement, while the losses are distributed according to share investment made by the parties. This instrument usually has been used for financing fixed assets and working capital of medium- and long-term duration<sup>203</sup>. For what concerns the **services** categories, it is possible to find safe-keeping contracts, demand deposits such as *Wadilah*, and agency contracts, such as *Wakalah*.

Beyond these categories of contracts, in Islamic finance, it is possible to find capital market instruments, the most important of which are *Sukuk*, the most crucial financing method for Islamic companies through corporate *Sukuk* and State through sovereign issues. AAOIFI defines *Sukuk* as “*certificates of equal value representing undivided shares in the ownership of tangible assets, usufructs, and services or (in the ownership of) the assets of particular projects or special investment activity*”. On the basis of the *Sukuk* issuing, there is a securitization process: the subject which needs funds, called the originator, creates a particular purpose vehicle (SPV) with its legal subjectivity, which receives some tangible assets from the originator. In exchange, the SPV issues *Sukuk* certificates, which will be subscribed by investors. The SPV uses the funds raised with the emission of certificates to pay for the assets transferred by the originator (with the price of certificates that cannot be different from the face value of assets) that will use the same funds to finance *Shari'ah*-compliant projects<sup>204</sup>. In that way, investors will become owners of the assets proportionally with their contribution, and they will join an Islamic contract created by the SPV with the originator<sup>205</sup> for the use of the assets. Depending on the Islamic contract initiated by the SPV, the *Sukuk* will be based on a different type, and three Islamic contracts are on the basis of the most common typologies of *Sukuk*: *Ijarah*, *Musharakah*, *Mudarabah*.

After being a niche phenomenon until the end of the last century, these financial instruments are now integrated into a context in which Islamic finance is widespread globally and has become a valuable investment and financing alternative. In fact, according to the DinarStandard State of the Global Islamic Economy Report 2019/2020, the value of the Islamic financial industry increased from USD 150 billion in the mid-1990s (ECB data) to about USD 2.5 trillion by end-2019, led by the Islamic banking sector and the global *Sukuk* market, whose total outstanding is USD 466 billion. Furthermore, the industry is expected to grow by a 5.5 % CAGR to reach \$3.47 trillion by 2024. According to a study carried out by the European Central Bank, this global expansion of Islamic finance is mainly due to the excellent availability of liquidity for the GCC countries,

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<sup>203</sup> Elasrag, Hussein, 09. April 2011

<sup>204</sup> F. MIGLIETTA, 2012. Alvaro, Consob (2014)

<sup>205</sup> M.G. STARITA, C. Porzio, 2009

Indonesia and Malaysia generated by high oil prices over the last 20 years, the increase of Muslim population in western countries, and to the fact that Islamic finance is characterized by a vital ethical component with an essential role in addressing Environmental, Social and Governance (ESG) objectives. Undoubtedly, what contributed more than anything else to the global expansion of Islamic finance was the Sukuk's tremendous success, which comprehensive volume went from an amount outstanding of 142 USD Billions to 491.7 USD Billions in 2019 according to the MIFC Estimates of Fitch Rating.

The fact that Islamic finance has undergone considerable development in recent years has made inevitable the comparison with conventional finance from a risk-return point of view. Given also the high numbers of financial shocks that the global economy has suffered since the beginning of the 21<sup>st</sup> century, it was decided in this paper to analyze the main differences between *Shari'ah*-compliant financial instruments and conventional financial instruments during a period of strong instability. In the first place, the effects of the "Great Recession" and the Covid-19 crisis have been analyzed through the comparison between the MSCI Emerging Market index and the Dow Jones Islamic Market World Index respectively between 01/09/2008-01/09/2020 and between 17/07/2019-17/07/2020. It has then been set a case study in which an Islamic portfolio has been compared with a conventional one used as a benchmark. The ultimate goal was to evaluate the performance of the Islamic portfolio to quantify the potential advantage that even a non-Islamic investor could have in deciding to opt for an investment in the *Sukuk* instead of in traditional ties. Moreover, this analysis has the objective to understand if Islamic financial products, particularly *Sukuk*, can be definitely considered as a serious investment alternative with a different risk-return profile compared to conventional instruments in order to satisfy Western companies' liquidity needs.

For what concerns the first research objective, The Dow Jones Islamic Market World Index has been chosen because it is the most important Islamic finance index, and it is mostly composed of *Sukuk*. Its main reference markets are the GCC countries, Indonesia, Malaysia, and Pakistan. The MSCI index has been chosen because it would have guaranteed to the analysis the principle of territorial continuity, which allows reaching more coherent conclusions. The 2008 Financial Meltdown immediately presented itself as a systemic one, mainly due to the excessive confidence in the assessments made by rating agencies and to the inappropriate use of derivatives. Thanks to its principles, Islamic financial instruments suffered less than conventional ones, and, as it is possible to observe from the graph below, between October and November of 2008, the MSCI Emerging Market Index recorded losses up to - 64,04%% on 20/11. At the beginning of March 2009, the period in which the curve began to reverse, it recorded a loss of - 59,44%, and then ended the entire analyzed one-year period with a loss reduced to only - 9.9%.



Figure 20.2: MSCI EMERGING MARKET INDEX price change between 01/09/2008 and 01/09/2009.

Differently, the Dow Jones Islamic Market World Index suffered more contained fluctuations, especially in the first months of the analysis. In fact, during October and November of 2008, the percentage loss was never more significant than - 48,28%. However, in the first three months of 2009, the index has come to lose up to - 50,34% at the beginning of March (09/03/2008) and concluded the one-year analyzed period with a - 16,27% loss.

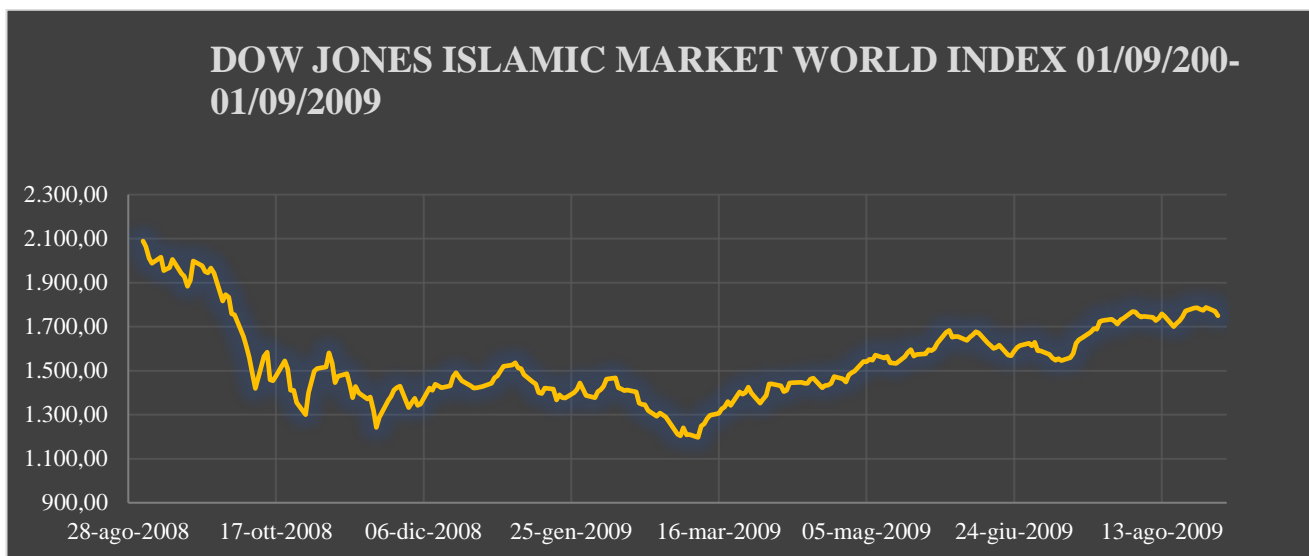


Figure 11.2: DOW JONES ISLAMIC WORLD MARKET INDEX price change between 01/09/2008 and 01/09/2009.

At first sight, it might seem that the Islamic finance index has not been more resilient to the 2008 financial crisis than conventional finance, as at the end of the period the Islamic index loss is more remarkable than the conventional one. However, it is possible to find a rational explanation for this result: in the first months of the period, until December 2008, the crisis and turbulence had a financial nature only. For such reason, the MSCI Emerging Market Index suffered a greater loss than Dow Jones Islamic World Index in that period. However, from January on, the crisis started to have a strong impact even on the real economy of every country in the World. As Islamic financial instruments are strongly related with the real economic activity, and as the economy of the Islamic countries was brutally affected by the collapse of oil prices, the Islamic index suffered



terrible losses in the first quarter of 2009 and consequently had a slow recovery in the spring of 2009 compared to the conventional index. This fact was mainly due to the possibility to speculate on conventional instruments, while *the Maysir* principle protects Islamic finance from that action.

In conclusion, this analysis shows how Islamic finance, in this turbulent context, has been more resilient than conventional finance, at least until the crisis did not affect the real economy. According to Daniele Atzori-Fondazione Eni Enrico Mattei, the initial resilience has to be attributed to the fact that Islamic finance is not relying on derivative instruments. Moreover, *Gharar and Maysir* principles prevented Islamic financial instruments from being overwhelmed by speculative waves. On the other hand, once the crisis became "real", the Islamic system suffered more because of its strong reliance, at that time, on oil exports, housing market, and market-based system of infrastructure financing.

For what concerns the Covid-19 crisis, both the indices had the same trend from a timely and a percentual price change point of view. In fact, during the period from 17/09/2019 to 17/09/2020, as it is possible to observe from the graph below, the MSCI EMERGING MARKET suffered an intense loss in the first quarter of 2020, reaching its minimum point on the 23<sup>rd</sup> of March with an aggregate percentage loss of - 31,29% closing the analyzed period with a price practically equal to beginning price, with a positive percentage change of +0,016%.

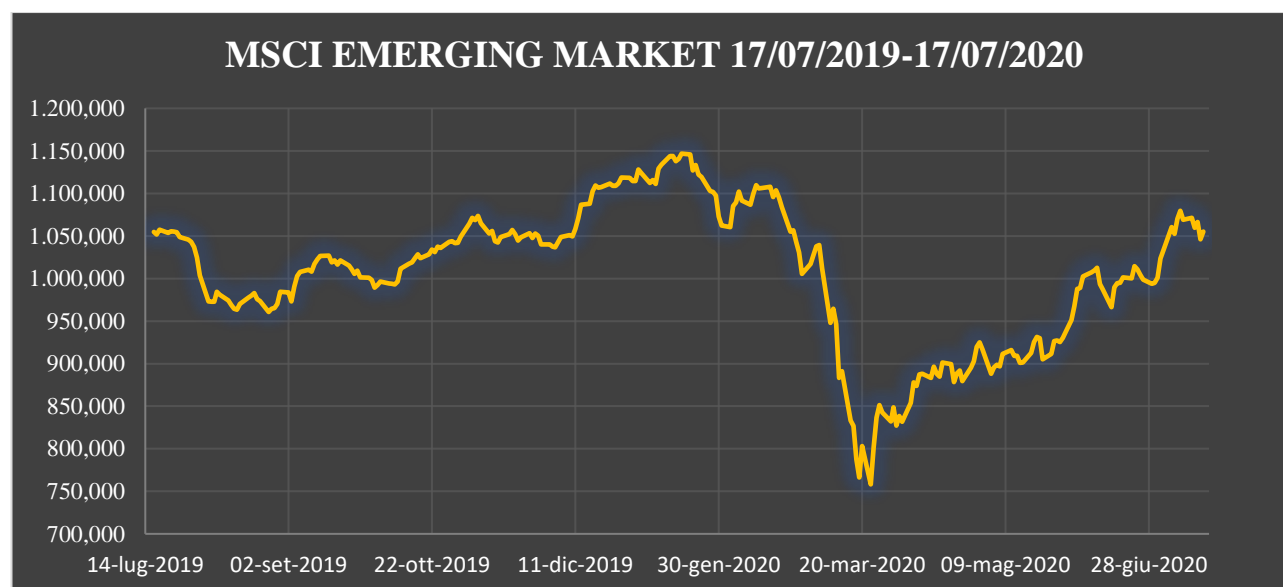


Figure 12.2: MSCI EMERGING MARKET INDEX price change between 17/07/2019 and 17/07/2020.

About the Dow Jones Islamic Market World Index, it is possible to do a very similar analysis: at the end of the first quarter of 2020, the index suffered a substantial fall in price, with a percentage reduction of - 21,26% on the 23<sup>rd</sup> of March. This reduction, calculated over the entire analyzed period, results to be more contained compared with MSCI Emerging Market's one but, shifting the analysis on a monthly point of view, starting from 20<sup>th</sup> of February, the aggregate loss results to be equal to - 34,82 %, that is near to the loss

suffered through the same period by the MSCI Emerging Market Index (- 36,27%). However, the index closed the period with a price increase of +16,88%.

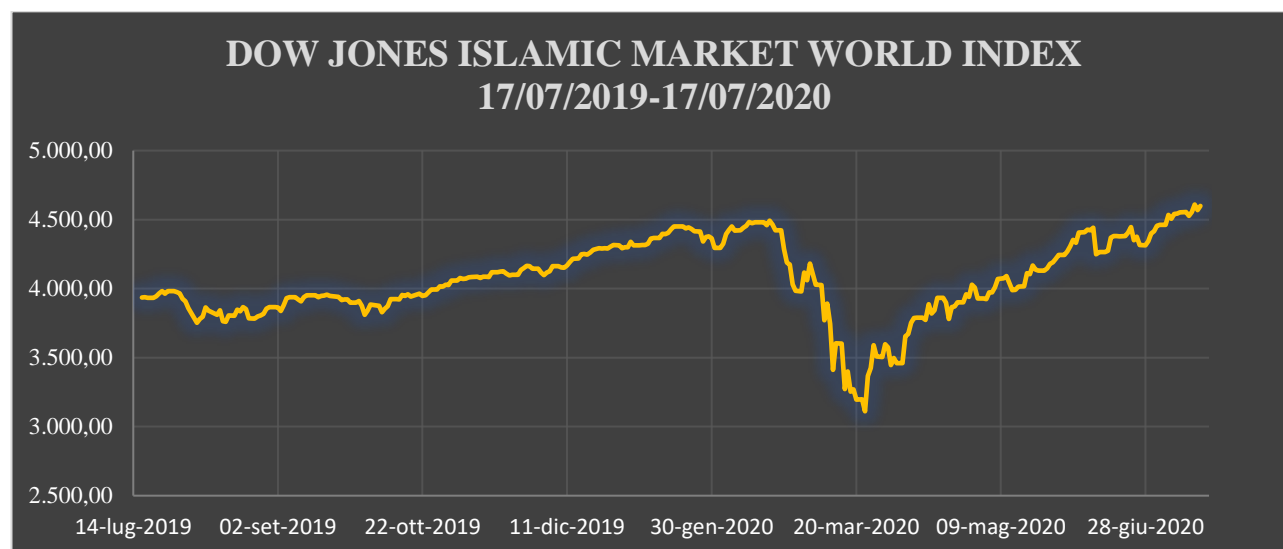


Figure 13.2: DOW JONES ISLAMIC MARKET WORLD INDEX price change between 17/07/2019 and 17/07/2020.

Given that the period under analysis is particularly recent and considering the aggravation of the Covid-19 pandemic, which makes every possible interpretation and future indication more complex, the result of this analysis can anyhow be interpreted to reach some conclusions. For example, both the indices suffered similar losses between 20/02/2020 and 23/03/2020. This fact can confirm that when a crisis is closely connected with the real economy, Islamic finance suffers more than conventional finance. In support of this, during the pandemic's peak, almost every nation in the World applied the “lockdown policies” to contain the contagion, with a critical impact on the real economy. In conclusion, a possible explanation for that result is that the analyzed conventional finance index focuses on the emerging markets, which are dependent on oil export. This feature resulted to be important during that period because of the speculative actions that the oil price suffered during April 2020, when the price reached even a negative point on the 21<sup>st</sup> of April 2020 (-37 USD for one barrel). It cannot be excluded that the consequences of this speculation, combined with the geopolitical tensions that have returned to affect the Middle East and Southeast Asia, may have been the cause of the slow recovery of the MSCI Emerging Market Index compared to the Dow Jones World Islamic Market Index. On the other hand, the Islamic Index could have been protected from these speculative actions, thanks to *Gharar* and *Maysir* principles.

These results are the starting point for the case study, aiming to evaluate whether *Shari'ah*-compliant financial instruments can be considered a good investing and financing alternative in a period of strong financial instability. In structuring this case study, it was also decided to build an Islamic portfolio, entirely composed of *Sukuk*, and a conventional portfolio, entirely composed of bonds, used as a benchmark. The choice to observe only bonds and not to include equities is dictated by the fact that *Sukuk* have several common elements with conventional bonds, while there are no listed Islamic instruments that have true comparability with

equities. Furthermore, this work wants to highlight how, in a moment of financial instability, the *Sukuk* are more stable than conventional bonds, highlighting its important future role as a financing tool for companies and investors. In these two perspectives, it was considered fairer not to include equities in both portfolios. In the decision-making process that led to the securities' selection to be included in the two portfolios, the following parameters were identified:

- Typology: Corporate bond/*Sukuk*, Government Bond/*Sukuk*
- Currency: United States Dollar (USD)
- Market: Eurobond/United States
- Issuer's Country: GCC, Indonesia, Malaysia.
- Coupon rate:  $\geq 2,50\%$ , Fixed
- Coupon frequency: semiannually
- Analyzed time-period: 17/07/2019-17/07/2020

As a first parameter, it was considered appropriate to include both corporate and government *Sukuk* and bond in the study. The main reason is that considering the analyzed period's peculiarities, inserting these two different types in the research could have created a diversification effect. In order to create two portfolios that were effectively comparable to each other, it was decided to adopt the US Dollar as a currency and to adopt the Eurobond<sup>206</sup> and the United States as a trading market. Therefore, for the Islamic Portfolio construction, it has been necessary to analyze the *Sukuk* issued and currently in circulation on regulated markets. At least at the beginning, in selecting the Islamic portfolio, there were no geographical limits. However, most of *Sukuk* are issued in GCC countries, Indonesia and Malaysia. For this reason, these countries have been identified as reference issuing market. For what concerns the chosen minimum coupon rate, 2,5% is a level that is held by reliable issuers in the chosen countries.

Once identified all these factors, the *Sukuk* in the portfolio have been chosen trying to maintain heterogeneity of the activities carried out by every *Sukuk* obligor and with the aim of including at least one sovereign *Sukuk* and one issued with the aim of financing infrastructure projects, which are some of the most important aims of *Sukuk* issuing, as stated in the previous chapters. Moreover, it was considered of decisive importance that no more than two *Sukuk* based on the same underlying asset were selected to minimize the single financial instrument's variability. In the end, it was decided to choose the period 17/07/2019-17/07/2020 as the analysed period because it was a period characterized by great stability in the first place, up to January 2020, and then by exceptional instability, especially during February, March, and April. After several kinds of research on Eikon, and after analysing several combinations of *Sukuk*, the followings summarized in the table below have been included in the Islamic portfolio.

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<sup>206</sup> constitutes with the foreign bond market the international bond market, Fabozzi F., Modigliani F., Jones F. (2010)

Figure 14.2: Islamic Portfolio composition prospect (personal elaboration)

ISIN	Description	Issuer-SPV	Sukuk Obligor	Obligor's Country	Coupon	Maturity Date	Underlying Activity	Moody's Rating	Risk Classification
US71567RAA41	PPSIB 3.300	PERUSAHAAN PENERBIT SURAT BERHARGA SYARIAH NEGARA INDONESIA III	Republic of Indonesia	Indonesia	3,30%	21/11/2022	Ijarah	Baa2	Asset-Based
US48266XAA37	KSASK 2.894	KSA SUKUK LIMITED	Saudi Arabia Kingdom	Saudi Arabia	2,89%	20/04/2022	Other	A1	Asset-Based
XS1419869968	COROY 3.908	DP WORLD CRESCENT LTD	DP World PLC	UAE	3,91%	31/05/2023	Murabaha	Baa3	Asset-Based
XS1387925958	DISB 3.600	DIB SUKUK LTD	DUBAI ISLAMIC BANK PJSC	UAE	3,60%	30/03/2021	Wakala bil Istihmar	A3	Asset-Backed
XS0778097674	MAPEF 6.450	DUBAI DOF SUKUK LTD	Emirate of Dubai	UAE	6,45%	02/05/2022	Ijarah	Aa3	Asset-Based

As it is possible to observe from the table, there are three *Sukuk*, PPSIB 3.300, KSASK 2.894 and MAPEF 6.450, which have a Sovereign State as the obligor. However, just MAPEF 6.450 has been issued by the State department of finance, and consequently, it is the only *Sukuk* in the Islamic portfolio that can be considered a "*Sovereign Sukuk*" completely. On the other hand, PPSIB 3.300, KSASK 2.894 have been issued by their government through their SPV, and they are two entities whose purpose is to collect money to finance industrial and infrastructure projects. Among other things, KSASK 2.894 has been issued by the Saudi Arabian Kingdom on the U.S. market because they have the project to finance infrastructure in Saudi Arabia together with American partners and to finance industrial projects even on American soil. For what concern COROY 3.908 and DISB 3.600, the former, has been issued by the SPV whose obligor is DP World PLC, the latter has been issued by the Dubai Islamic Bank. DISB 3.600 can be considered in a little different way from the others because its underlying activity is a *Wakala bil Istihmar*, which is an insurance instrument.

For what concerns the construction of the conventional portfolio, as it is observable from the table below, nearly the same criteria used for constructing the Islamic portfolio have been followed, with the obvious exclusion of the ones that were just applicable to Islamic finance features. In this case, just one government bond has been selected: ABUDB 2.500, issued by the Emirate of Abu Dhabi. The main reason is that finding government bonds of the selected countries presented some problems as GCC countries, Indonesia, and Malaysia prefer the issuance of sovereign *Sukuk* to government bonds. Moreover, oil companies and oil-related companies have not been considered too much because of the massive speculation that hit the sector during March and April. For such reason, just one oil company bond, Arab Petroleum Investments Corporation, has been included in the portfolio. For what concerns the Abu Dhabi National Energy Company

bond-TAQA 3.625, it has been inserted in the portfolio because it is a State-owned company, and for this reason, it can have the same role that has a *Sukuk* issued by a State-linked SPV.

ISIN	Description	Issuer	Issuer's Country	Coupon	Maturity Date	Moody's Rating
XS1877841400	ARPEI 4.125	ARAB PETROLEUM INVESTMENTS CORP	Saudi Arabia	4,13%	18/09/2023	Aa2
USY7140WAB47	INALM 5.710	INDONESIA ASAHAN ALUMINIUM (PERSERO) PT	Indonesia	5,71%	15/11/2023	Baa2
XS1659030305	AXBK 3.000	AXIS BANK LTD (DUBAI BRANCH)	UAE	3,00%	08/08/2022	Baa3
XS0863524277	TAQA 3.625	ABU DHABI NATIONAL ENERGY COMPANY PJSC	UAE	3,63%	12/01/2023	Aa3
XS1696908471	ABUDB 2.500	EMIRATE OF ABU DHABI	UAE	2,50%	11/10/2022	Aa3

Figure 15.2: Conventional Portfolio composition prospect (personal elaboration)

The comparative performance analysis between these two portfolios has been conducted based on the leading performance indices, as analysing just the portfolio return would have been reductive since it cannot consider all the other variables capable of playing an important role within the evaluation process. The unconventional choice of not using a classic risk-free activity but the conventional portfolio as a benchmark was given precisely by the particularity of the analysis carried out in this work. In fact, using a traditional benchmark would have had a limited significance since *Sukuk* have points in common with traditional bonds but are not fully comparable. That is the reason why, in constructing the conventional portfolio, it has been made a careful choice about the bonds to be included concerning the country of issue, maturity, past fluctuations and also, as it appears to be a vital aspect in the Islamic context, the reason of the bond issuing. This last factor is what caused the greater complexity of the analysis carried out. However, after selecting the securities of both portfolios respecting all the established criteria and making the two portfolios as comparable as possible, it has been established how to perform the study comparison.

First, as performance evaluation tools have been considered the average returns of the period observed daily, the standard deviation has been calculated and used as a risk measure. It was preferred to use daily returns because, given the high instability of the period under analysis, it seemed that the daily variations might be more significant than the weekly ones. Then, performance indicators were also analyzed at a later stage. After analyzing yield and price from 17/07/2019 to 17/07/2020, the following findings were obtained both on the Islamic portfolio and the conventional benchmark portfolio, as described in the two summary tables below.

Figure 17,18: Tables representing financial data of Islamic and conventional portfolio based on Eikon financial data

**Islamic Portfolio**

	<b>KSASK</b>	<b>MAPEF</b>	<b>DISB</b>	<b>PPSIB</b>	<b>COROY</b>	<b>Average</b>
<b>Average Return</b>	2,07%	2,67%	2,88%	2,62%	3,19%	<b>2,69%</b>
<b>Variance</b>	0,00%	0,01%	0,00%	0,00%	0,01%	<b>0,01%</b>
<b>Standard Dev.</b>	0,50%	0,92%	0,66%	0,45%	1,03%	<b>0,71%</b>
<b>Excess Return</b>	0,02%	-0,05%	-0,001%	-0,003%	-0,08%	<b>-0,02%</b>

**Conventional Portfolio- Benchmark**

	<b>TAQA</b>	<b>ARPEI</b>	<b>AXBK</b>	<b>INALM</b>	<b>ABUDB</b>	<b>Average</b>
<b>Average Return</b>	2,42%	2,55%	3,15%	3,39%	1,91%	<b>2,68%</b>
<b>Variance</b>	0,00%	0,00%	0,01%	0,01%	0,00%	<b>0,00%</b>
<b>Standard Dev.</b>	0,51%	0,59%	0,80%	0,82%	0,43%	<b>0,63%</b>
<b>Excess Return</b>	-0,13%	-0,68%	-0,24%	1,48%	-0,79%	<b>-0,07%</b>

Looking at the data, it is possible to see how the average return of the two portfolios over the period has been very similar, with the Islamic portfolio having a slightly higher average return. This result, consistently with what was previously observed with the indices' trend, shows that Islamic *Sukuk* have had a better reaction to this period of financial turbulence induced by the health emergency than conventional stocks. Compared to what has been observed with the indices, this gap in terms of yield is very limited as only one oil-based stock has been included in the conventional portfolio. Therefore, the two portfolios, especially the conventional one for its own nature, appear to have been set up with securities not overwhelmed by period speculations, which potentially gives the analysis strong reliability. For what concerns the standard deviation, it results to be higher in the Islamic portfolio, demonstrating that investing in *Sukuk* presents more risks than investing in bonds. This aspect appears to be consistent with the nature of Islamic bonds. In fact, one of the factors that could expose the greater risk of *Sukuk* compared to conventional bonds is the incorporation of its greater liquidity risk and, above all, its operational and *Shari'ah*-compliance risk.

The data about the excess returns, together with previous data results, are important because they can tell the investor the portfolio's capability to have limited fluctuations, resulting in a sort of indicator of stability.

Observing the data, it is possible to say that the Islamic portfolio had better stability during the turbulent analyzed period than the conventional portfolio.

However, the performance evaluation process has not been based just on the evaluation of these data, but also the evaluation of the performance indicators, because they can give a greater understanding and description of the true values expressed by the portfolios. Therefore, the comparison has been conducted over the same time frame and with homogeneous surveys to avoid distortion in the assessment and using the following risk-adjusted performance indicators:

<b>Sharpe Ratio</b>	<b>0,43%</b>
<b>Traynor Ratio</b>	<b>0,08%</b>
<b>Risk-Adjusted-Performance-Modigliani (RAPM)</b>	<b>2,69%</b>
<b>Tracking Error Volatility (TEV)</b>	<b>0,71%</b>
<b>Information Ratio</b>	<b>0,43%</b>

Figure 19.2: Portfolio Measures calculated on Islamic portfolio considering Conventional as a benchmark

The Sharpe ratio measures the excess return of security per unit of risk compared to a benchmark return, usually considered risk-free:

$$\text{Sharpe Ratio} = \frac{R_p - R_b}{\sigma_p}, \text{ Where:}$$

- $R_p$  = Islamic Portfolio average return
- $R_b$  = Conventional-Benchmark Portfolio average return
- $\sigma_p$  = standard deviation of the portfolio, the total historical risk of the Islamic portfolio.

This indicator helps the investor to understand if he can employ his capital in a risk-free activity or choose an alternative investment, provided that the increase in risk resulting from this choice is well offset by the excess return thus obtained. In the analyzed case, considering that it has been calculated assuming the conventional portfolio as the benchmark portfolio, the Sharpe ratio results to be positive: 0,43%. In calculating this indicator, the Islamic portfolio's return and risk are made equal to those of the conventional one. In this way, this means that the indicator measures the Islamic portfolio's capability to perform better than the Conventional portfolio. Thus, showing the Islamic portfolio's ability to beat the benchmark, in this case, directs the investor's choice towards a non-conventional Islamic investment. However, it is an indicator that does not consider just systematic risk but even every other risk in the correction of the excess return, so it is a valid measure of performance for an investor which puts all his wealth in a single fund. To calculate the Treynor ratio can be a solution to overcome this aspect because it considers only systematic risk. Treynor Ratio is a performance metric for determining how much excess return was generated for each risk unit taken on by a portfolio.

In this sense, excess return refers to the return earned in excess to the one that could have been earned with the benchmark investment. Its formula is:

$$\text{Treynor Ratio} = \frac{R_p - R_b}{\beta_p}, \text{ Where } \beta_p \text{ represents the systematic risk of the Islamic portfolio.}$$

In this case, the Treynor Ratio results to be positive: 0,08%. According to this result, the Islamic portfolio would beat the conventional portfolio by a very limited amount, thus leaving the investor on the edge of indifference between the two choices. However, this result is conditioned by the beta, the coefficient that defines the measure systematic risk of a financial asset. In fact, in this analysis, further reasonings have been carried on considering even the portfolios' beta. However, since the instrument analyzed are bonds, every reasoning based on beta is subjected to great limitations and assumptions. When it is greater than 1, the asset is riskier than the market because it tends to amplify market movements<sup>207</sup>. In this case, both beta of Islamic and conventional, calculated considering, respectively, Dow Jones Islamic Market World Index and MSCI emerging market index as the market index to perform the regression calculation, are smaller than 1, so the two portfolios are less risky than the market.

Beta-Bottom-up method			
KSASK	0,012	TAQA	0,043
MAPEF	0,047	ARPEI	-0,014
DISB	0,024	AXBK	0,158
PPSIB	0,032	INALM	0,032
COROY	0,073	ABUDB	0,004
<b>Beta Islamic Portfolio</b>		<b>Beta Conventional Portfolio</b>	
<b>0,038</b>		<b>0,044</b>	

Figure 20.2: Beta prospect of both Portfolios, bottom-up method.

However, this risk indicator is used in most cases for equities. That happens because it is part of the bond's very essence to move in accordance with the market, thanks to the inverse price-yield relationship. According to what has been written previously, *Sukuk* cannot be valued in all respects like bonds. For this reason, in this analysis, it is present a beta calculation with the bottom-up method, as shown in the table above. Anyway, aware of the little significance that beta possesses when adapted to bonds, it has been used only to calculate the Traynor Ratio that will not be fully taken into account in final considerations for the same reasons.

<sup>207</sup> Fabozzi F., Modigliani F., Jones F. (2010)



After the Sharpe ratio, the analysis focused on the Modigliani Risk-Adjusted-Performance indicator (RAPM):

$$RAPM = (Rp - Rb) * \left(\frac{\sigma p}{\sigma b}\right) + Rb, \text{ Where:}$$

- Rp = portfolio Return
- Rb = Benchmark Return
- $\sigma p$  = total historical risk of the portfolio.
- $\sigma b$  = total historical risk of the benchmark.

The RAPM index corrects the portfolio's risk making it equal to market risk and measures its return, determining the return the portfolio would have achieved if it had assumed the same level of risk as the benchmark. Therefore, in the case under analysis, the detection of a Modigliani RAP index of 2,69% indicates the Islamic portfolio's ability to perform with a return much greater than the conventional portfolio even in the hypothesis of assuming the risk associated with the conventional benchmark portfolio.

The last two analyzed indices are the Tracking Error Volatility (TEV) and the Information ratio.

$$TEV = \sqrt{\left[\left(\frac{1}{n}\right) * \sum_{n=1}^n (Rp, n - Rb, n)\right]}; \text{ Information Ratio} = \frac{Rp - Rb}{TEV}$$

Where:

- Rp = portfolio Return
- Rb = Benchmark Return

The TEV represents the added value that the portfolio has produced compared to the benchmark. In this analysis, its value of 0,71% could show that the Islamic portfolio has produced more added value than the conventional portfolio during the analyzed year. However, due to its predisposition and attitude, the Tracking Error Volatility is suitable for comparing a set of assets characterized by different investment objectives or different benchmarks and risk levels. In this perspective, its usefulness within this analysis appears to be limited. For this reason, the real aim of calculating this indicator is that through its calculation, it is possible to reach the measurement of the Information Ratio, which can assess whether the portfolio return is significantly larger than those of the benchmark. It has the property of synthesizing both a measure of extra-return and extra-risk of the portfolio with respect to the benchmark. Within this analysis, the Information ratio turns out to be about 0,43%, which means that the Islamic portfolio had the capability to beat the benchmark, even if with a contained value.

Analyzing these results shows that in the period between 17/07/2019 and 17/07/2020, the Islamic portfolio outperformed the conventional portfolio even if this did not happen with large aspect ratios. This result appears consistent with what was observed in the analysis between the Dow Jones Islamic World Index and MSCI Emerging Market Index where the Islamic index had concluded its path during the same period with a slightly positive price change, while the MSCI Emerging Market Index closed with a decline of around 16%. In the case study, the two constructed portfolios appear to have had very similar values in terms of average return and excess return, with the Islamic Portfolio, which has always recorded slightly better values than the conventional portfolio. For what concerns the performance indicators, every one of them shows a better performance in terms of return or risk for the Islamic portfolio. The explanations about it can be manifold. Without doubt, the stock selection method used for constructing this portfolio strongly limited all distorting effects linked to business sectors and linked to territorial factors. Also, the distorting effects created by the pandemic from Covid-19 were also limited, as they were not included in both securities portfolios of companies that, in some way, benefited from the pandemic condition.

This difference of performance can be explained by the intrinsic characteristics of the *Sukuk* described above, which in fact detach this Islamic finance tool from conventional mechanisms. In fact, it is possible to read the effects of the principle of the ban of *Riba*, *Gharar*, and *Maysir* as the cause of the better performance of a portfolio made up entirely of *Sukuk* compared to a portfolio made up entirely of Bonds. The first has a decisive impact on the pricing of the *Sukuk*, which, unlike the Bonds, are not affected by the interest rate; the others ensure that a portfolio of *Sukuk* is not affected by speculations. Another factor to consider is that the *Sukuk* have a strong connection with the real economy. The one analyzed was a period, starting from February, of critical financial instability, which was a precursor to the great global economic problems which then arose. For the first time in modern history, there has been a strong economic crisis linked to a health emergency that already had put several nations to their limit for every country on the Planet. In this context, for the first time, the real economy had a setback at the same time as it did for the financial economy. Unlike what happened in 2008, when Islamic financial instruments had suffered very limited losses compared to conventional ones until the crisis evolved from financial to real, during this period, Islamic finance suffered in the same way as conventional finance.

However, given the extraordinary nature of this period led to events and distortions that have yet to be investigated by many scholars, and also premising that future developments regarding both financial and economic recovery present uncertainties that are difficult to read, this analysis has shown that, however, an Islamic portfolio performed better than a conventional portfolio. It should be noted that this result was found by not including equities in the portfolio. This is not a choice to be neglected as it is very rare to find investment portfolios consisting solely of bonds. However, this choice was dictated by the fact that there are no listed Islamic instruments comparable to shares, and the only way to perform this study was to compare the two most similar instruments: *Sukuk* and bonds.

Having repeated this necessary clarification, with these results, it can be said what was defined as the ultimate purpose of this paper has been confirmed: in a phase of financial instability, an Islamic portfolio performs better than a conventional portfolio.

From the point of view with which this paper was conceived, because Islamic securities protect the investments even during periods of financial instability, they could also be considered by medium-sized non-Islamic companies as financing tools. From this point of view, we could see remarkable development in the future since the philosophy of Islamic finance is well linked to an idea of more sustainable development, and above all, it can be an excellent vehicle for foreign investments. Furthermore, since the project and its implementation are of fundamental importance for the financial contract to go to a good end, these could be a totally new guarantee for both the investor and the lender. Therefore, for western companies considering Islamic financing tools would add to their circle of possible financiers all those Muslim investors who do not use conventional investment instruments for reasons of faith. It is a pool of potential investors of several tens of millions of people, which, if addressed, could give a change to the liquidity problems of many non-Islamic Medium Enterprises.

Surely Islamic finance needs improvements and evolutions, but the studies carried on in this thesis show how it already represents a good investment tool and, especially in a future perspective, of financing.

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## ATTACHMENTS

- INDICES ANALYSIS

### DOW JONES ISLAMIC MARKET WORLD INDEX

.DJIMI History Daily 02-Sep-2008 - 01-Sep-2009

Exchange Date	Close	Adjusted Close	%Chg
01-set-2009	1.749,18		-1,20%
31-ago-2009	1.770,50		-0,95%
28-ago-2009	1.787,52		+0,70%
27-ago-2009	1.775,13		-0,19%
26-ago-2009	1.778,57		-0,41%
25-ago-2009	1.785,81		+0,05%
24-ago-2009	1.784,85		+0,77%
21-ago-2009	1.771,27		+1,53%
20-ago-2009	1.744,50		+1,05%
19-ago-2009	1.726,40		+0,64%
18-ago-2009	1.715,42		+0,88%
17-ago-2009	1.700,46		-2,66%
14-ago-2009	1.746,85		-0,69%
13-ago-2009	1.759,05		+1,10%
12-ago-2009	1.739,89		+0,68%
11-ago-2009	1.728,21		-0,82%
10-ago-2009	1.742,47		-0,27%
07-ago-2009	1.747,15		+0,22%
06-ago-2009	1.743,38		-0,51%
05-ago-2009	1.752,38		-0,85%
04-ago-2009	1.767,36		-0,07%
03-ago-2009	1.768,51		+1,74%
31-lug-2009	1.738,22		+0,45%
30-lug-2009	1.730,40		+1,08%
29-lug-2009	1.711,87		-0,77%
28-lug-2009	1.725,21		-0,48%
27-lug-2009	1.733,49		+0,36%
24-lug-2009	1.727,28		+0,25%
23-lug-2009	1.722,97		+1,99%
22-lug-2009	1.689,28		-0,12%
21-lug-2009	1.691,24		+0,94%
20-lug-2009	1.675,41		+1,62%
17-lug-2009	1.648,69		+0,47%
16-lug-2009	1.641,02		+0,99%
15-lug-2009	1.624,88		+2,93%
14-lug-2009	1.578,67		+1,21%
13-lug-2009	1.559,81		+0,88%
10-lug-2009	1.546,22		-0,55%
09-lug-2009	1.554,79		+0,48%
08-lug-2009	1.547,40		-0,65%
07-lug-2009	1.557,45		-1,00%
06-lug-2009	1.573,13		-1,02%
03-lug-2009	1.589,37		-0,14%
02-lug-2009	1.591,56		-2,30%
01-lug-2009	1.629,06		+0,95%
30-giu-2009	1.613,72		-0,65%
29-giu-2009	1.624,26		+0,64%

26-giu-2009	1.613,96		+0,53%
25-giu-2009	1.605,44		+1,02%
24-giu-2009	1.589,27		+1,39%
23-giu-2009	1.567,55		-0,20%
22-giu-2009	1.570,65		-2,76%
19-giu-2009	1.615,20		+0,60%
18-giu-2009	1.605,64		+0,31%
17-giu-2009	1.600,70		-0,85%
16-giu-2009	1.614,37		-0,76%
15-giu-2009	1.626,79		-2,68%
12-giu-2009	1.671,54		-0,37%
11-giu-2009	1.677,71		+0,89%
10-giu-2009	1.662,85		+0,67%
09-giu-2009	1.651,82		+0,83%
08-giu-2009	1.638,15		-1,03%
05-giu-2009	1.655,12		-0,01%
04-giu-2009	1.655,25		+0,15%
03-giu-2009	1.652,69		-1,79%
02-giu-2009	1.682,74		+0,49%
01-giu-2009	1.674,57		+2,97%
29-mag-2009	1.626,33		+1,62%
28-mag-2009	1.600,48		+0,62%
27-mag-2009	1.590,63		-0,34%
26-mag-2009	1.596,07		+1,23%
25-mag-2009	1.576,66		+0,17%
22-mag-2009	1.573,93		+0,50%
21-mag-2009	1.566,07		-1,88%
20-mag-2009	1.596,06		+0,84%
19-mag-2009	1.582,78		+1,24%
18-mag-2009	1.563,43		+1,94%
15-mag-2009	1.533,61		-0,01%
14-mag-2009	1.533,79		-0,13%
13-mag-2009	1.535,76		-1,90%
12-mag-2009	1.565,57		+0,49%
11-mag-2009	1.557,89		-0,79%
08-mag-2009	1.570,34		+1,45%
07-mag-2009	1.547,93		-0,30%
06-mag-2009	1.552,62		+0,80%
05-mag-2009	1.540,37		-0,07%
04-mag-2009	1.541,44		+2,86%
01-mag-2009	1.498,60		+0,54%
30-apr-2009	1.490,53		+0,66%
29-apr-2009	1.480,80		+2,18%
28-apr-2009	1.449,24		-0,95%
27-apr-2009	1.463,14		-0,70%
24-apr-2009	1.473,39		+2,13%
23-apr-2009	1.442,67		+0,60%
22-apr-2009	1.434,10		+0,08%
21-apr-2009	1.432,93		+0,72%
20-apr-2009	1.422,75		-2,95%
17-apr-2009	1.466,02		+0,28%
16-apr-2009	1.461,99		+1,35%
15-apr-2009	1.442,49		+0,02%
14-apr-2009	1.442,21		-0,33%
13-apr-2009	1.446,93		+0,05%
10-apr-2009	1.446,17		+0,11%

09-apr-2009	1.444,64		+2,43%
08-apr-2009	1.410,31		+0,39%
07-apr-2009	1.404,82		-1,85%
06-apr-2009	1.431,23		-0,57%
03-apr-2009	1.439,46		-0,04%
02-apr-2009	1.440,02		+3,79%
01-apr-2009	1.387,39		+1,31%
31-mar-2009	1.369,40		+1,26%
30-mar-2009	1.352,40		-3,24%
27-mar-2009	1.397,72		-1,92%
26-mar-2009	1.425,05		+1,72%
25-mar-2009	1.400,90		+0,54%
24-mar-2009	1.393,31		-0,69%
23-mar-2009	1.402,99		+4,50%
20-mar-2009	1.342,60		-1,30%
19-mar-2009	1.360,28		+1,83%
18-mar-2009	1.335,82		+0,74%
17-mar-2009	1.326,00		+1,51%
16-mar-2009	1.306,29		+0,69%
13-mar-2009	1.297,31		+1,25%
12-mar-2009	1.281,30		+1,87%
11-mar-2009	1.257,77		+0,68%
10-mar-2009	1.249,24		+4,35%
09-mar-2009	1.197,14		-1,04%
06-mar-2009	1.209,70		+0,04%
05-mar-2009	1.209,18		-2,52%
04-mar-2009	1.240,42		+2,98%
03-mar-2009	1.204,58		-0,56%
02-mar-2009	1.211,31		-4,70%
27-feb-2009	1.271,02		-1,50%
26-feb-2009	1.290,35		-0,63%
25-feb-2009	1.298,52		-0,72%
24-feb-2009	1.307,89		+1,10%
23-feb-2009	1.293,61		-1,98%
20-feb-2009	1.319,77		-1,90%
19-feb-2009	1.345,35		-0,10%
18-feb-2009	1.346,67		-0,43%
17-feb-2009	1.352,54		-3,67%
16-feb-2009	1.404,09		-0,60%
13-feb-2009	1.412,59		+0,24%
12-feb-2009	1.409,15		-0,56%
11-feb-2009	1.417,12		-0,38%
10-feb-2009	1.422,55		-3,09%
09-feb-2009	1.467,91		+0,46%
06-feb-2009	1.461,13		+2,20%
05-feb-2009	1.429,69		+1,12%
04-feb-2009	1.413,90		+0,59%
03-feb-2009	1.405,58		+2,08%
02-feb-2009	1.376,96		-0,79%
30-gen-2009	1.387,94		-1,88%
29-gen-2009	1.414,49		-2,04%
28-gen-2009	1.443,99		+2,08%
27-gen-2009	1.414,58		+0,98%
26-gen-2009	1.400,89		+1,77%
23-gen-2009	1.376,55		-0,08%
22-gen-2009	1.377,68		-0,92%

21-gen-2009	1.390,45		+1,73%
20-gen-2009	1.366,83		-3,50%
19-gen-2009	1.416,44		-0,29%
16-gen-2009	1.420,63		+1,75%
15-gen-2009	1.396,25		-0,36%
14-gen-2009	1.401,23		-2,68%
13-gen-2009	1.439,88		-0,59%
12-gen-2009	1.448,41		-2,29%
09-gen-2009	1.482,42		-1,78%
08-gen-2009	1.509,21		-0,22%
07-gen-2009	1.512,51		-1,53%
06-gen-2009	1.536,05		+0,66%
05-gen-2009	1.526,00		+0,37%
02-gen-2009	1.520,34		+3,01%
31-dic-2008	1.475,93		+0,54%
30-dic-2008	1.468,06		+1,78%
29-dic-2008	1.442,40		+0,94%
26-dic-2008	1.428,96		+0,50%
24-dic-2008	1.421,80		+0,06%
23-dic-2008	1.420,95		-0,74%
22-dic-2008	1.431,56		-1,54%
19-dic-2008	1.453,98		-1,26%
18-dic-2008	1.472,60		-1,19%
17-dic-2008	1.490,32		+1,13%
16-dic-2008	1.473,64		+2,92%
15-dic-2008	1.431,86		+0,68%
12-dic-2008	1.422,14		-0,59%
11-dic-2008	1.430,51		-0,53%
10-dic-2008	1.438,17		+1,96%
09-dic-2008	1.410,58		-0,70%
08-dic-2008	1.420,46		+5,34%
05-dic-2008	1.348,50		+0,40%
04-dic-2008	1.343,16		-2,25%
03-dic-2008	1.374,02		+1,37%
02-dic-2008	1.355,45		+1,74%
01-dic-2008	1.332,28		-6,80%
28-nov-2008	1.429,56		+0,41%
27-nov-2008	1.423,76		+0,81%
26-nov-2008	1.412,36		+2,15%
25-nov-2008	1.382,63		+1,32%
24-nov-2008	1.364,59		+6,03%
21-nov-2008	1.286,95		+3,66%
20-nov-2008	1.241,56		-6,04%
19-nov-2008	1.321,33		-4,26%
18-nov-2008	1.380,14		+0,61%
17-nov-2008	1.371,75		-1,94%
14-nov-2008	1.398,88		-2,06%
13-nov-2008	1.428,25		+3,69%
12-nov-2008	1.377,42		-4,12%
11-nov-2008	1.436,63		-3,32%
10-nov-2008	1.485,93		+0,76%
07-nov-2008	1.474,70		+2,04%
06-nov-2008	1.445,24		-5,78%
05-nov-2008	1.533,97		-3,00%
04-nov-2008	1.581,35		+4,27%
03-nov-2008	1.516,58		+0,46%

31-ott-2008	1.509,71		+0,80%
30-ott-2008	1.497,69		+3,37%
29-ott-2008	1.448,85		+3,60%
28-ott-2008	1.398,48		+7,51%
27-ott-2008	1.300,85		-4,05%
24-ott-2008	1.355,75		-3,92%
23-ott-2008	1.411,07		-0,00%
22-ott-2008	1.411,08		-6,46%
21-ott-2008	1.508,52		-2,36%
20-ott-2008	1.544,93		+4,74%
17-ott-2008	1.475,00		+1,39%
16-ott-2008	1.454,78		-0,30%
15-ott-2008	1.459,12		-7,86%
14-ott-2008	1.583,58		+1,22%
13-ott-2008	1.564,53		+10,27%
10-ott-2008	1.418,84		-4,88%
09-ott-2008	1.491,56		-4,37%
08-ott-2008	1.559,78		-3,09%
07-ott-2008	1.609,56		-2,75%
06-ott-2008	1.655,11		-5,64%
03-ott-2008	1.754,06		-0,26%
02-ott-2008	1.758,69		-4,14%
01-ott-2008	1.834,71		-0,63%
30-set-2008	1.846,26		+1,60%
29-set-2008	1.817,12		-6,51%
26-set-2008	1.943,65		-1,18%
25-set-2008	1.966,83		+1,15%
24-set-2008	1.944,52		-0,32%
23-set-2008	1.950,80		-1,31%
22-set-2008	1.976,71		-1,08%
19-set-2008	1.998,23		+4,52%
18-set-2008	1.911,73		+1,49%
17-set-2008	1.883,58		-2,34%
16-set-2008	1.928,66		-0,64%
15-set-2008	1.941,09		-3,20%
12-set-2008	2.005,27		+1,92%
11-set-2008	1.967,45		+0,26%
10-set-2008	1.962,38		+0,41%
09-set-2008	1.954,29		-3,03%
08-set-2008	2.015,36		+1,33%
05-set-2008	1.989,00		-1,14%
04-set-2008	2.011,99		-2,54%
03-set-2008	2.064,42		-1,19%
02-set-2008	2.089,18		

**.DJIMI History Daily 17-Jul-2019 - 17-Jul-2020**

Exchange Date	Close	Adjusted Close	%Chg
17-lug-2020	4.599,42		+0,67%
16-lug-2020	4.568,72		-0,88%
15-lug-2020	4.609,06		+1,19%
14-lug-2020	4.555,08		+0,60%
13-lug-2020	4.527,97		-0,59%
12-lug-2020	4.555,04		+0,05%
10-lug-2020	4.552,93		+0,20%

09-lug-2020	4.543,80		+0,05%
08-lug-2020	4.541,69		+0,78%
07-lug-2020	4.506,74		-0,62%
06-lug-2020	4.534,84		+1,64%
05-lug-2020	4.461,75		+0,00%
03-lug-2020	4.461,54		+0,14%
02-lug-2020	4.455,36		+0,90%
01-lug-2020	4.415,62		+0,39%
30-giu-2020	4.398,32		+1,25%
29-giu-2020	4.344,19		+0,72%
28-giu-2020	4.313,23		-0,04%
26-giu-2020	4.314,89		-1,41%
25-giu-2020	4.376,57		+0,58%
24-giu-2020	4.351,32		-2,13%
23-giu-2020	4.445,93		+0,90%
22-giu-2020	4.406,49		+0,59%
21-giu-2020	4.380,49		+0,02%
19-giu-2020	4.379,54		-0,01%
18-giu-2020	4.379,76		-0,01%
17-giu-2020	4.380,36		+0,26%
16-giu-2020	4.368,84		+2,19%
15-giu-2020	4.275,27		+0,26%
14-giu-2020	4.264,17		-0,01%
12-giu-2020	4.264,46		+0,37%
11-giu-2020	4.248,63		-4,34%
10-giu-2020	4.441,61		+0,42%
09-giu-2020	4.423,02		-0,11%
08-giu-2020	4.427,77		+0,46%
07-giu-2020	4.407,68		+0,02%
05-giu-2020	4.406,71		+1,73%
04-giu-2020	4.331,70		-0,48%
03-giu-2020	4.352,67		+1,06%
02-giu-2020	4.307,03		+0,86%
01-giu-2020	4.270,36		+0,62%
31-mag-2020	4.243,85		+0,01%
29-mag-2020	4.243,52		+0,67%
28-mag-2020	4.215,33		+0,59%
27-mag-2020	4.190,81		+0,28%
26-mag-2020	4.179,12		+0,79%
25-mag-2020	4.146,39		+0,40%
24-mag-2020	4.129,93		-0,00%
22-mag-2020	4.130,06		-0,15%
21-mag-2020	4.136,33		-0,75%
20-mag-2020	4.167,77		+1,56%
19-mag-2020	4.103,95		-0,20%
18-mag-2020	4.112,37		+2,40%
17-mag-2020	4.015,88		+0,02%
15-mag-2020	4.015,27		+0,62%
14-mag-2020	3.990,71		+0,07%
13-mag-2020	3.987,99		-1,30%
12-mag-2020	4.040,65		-1,22%
11-mag-2020	4.090,69		+0,41%
10-mag-2020	4.073,81		+0,08%
08-mag-2020	4.070,73		+1,51%
07-mag-2020	4.010,12		+0,93%
06-mag-2020	3.973,35		-0,00%

05-mag-2020	3.973,51		+1,25%
04-mag-2020	3.924,40		-0,12%
03-mag-2020	3.929,11		+0,04%
01-mag-2020	3.927,49		-2,02%
30-apr-2020	4.008,47		-0,51%
29-apr-2020	4.029,15		+2,24%
28-apr-2020	3.941,05		-0,42%
27-apr-2020	3.957,79		+1,44%
26-apr-2020	3.901,70		-0,00%
24-apr-2020	3.901,86		+0,80%
23-apr-2020	3.870,74		+0,15%
22-apr-2020	3.865,08		+2,24%
21-apr-2020	3.780,43		-3,03%
20-apr-2020	3.898,57		-0,88%
19-apr-2020	3.933,16		+0,02%
17-apr-2020	3.932,37		+2,32%
16-apr-2020	3.843,39		+0,61%
15-apr-2020	3.820,12		-1,72%
14-apr-2020	3.887,06		+3,03%
13-apr-2020	3.772,73		-0,45%
12-apr-2020	3.789,73		-0,01%
10-apr-2020	3.790,06		+0,05%
09-apr-2020	3.788,26		+0,99%
08-apr-2020	3.751,28		+2,16%
07-apr-2020	3.671,81		+0,48%
06-apr-2020	3.654,32		+5,64%
05-apr-2020	3.459,36		+0,00%
03-apr-2020	3.459,25		-1,09%
02-apr-2020	3.497,47		+1,51%
01-apr-2020	3.445,30		-3,57%
31-mar-2020	3.573,03		-0,63%
30-mar-2020	3.595,86		+2,62%
29-mar-2020	3.504,00		-0,12%
27-mar-2020	3.508,37		-2,24%
26-mar-2020	3.588,91		+4,79%
25-mar-2020	3.424,73		+1,70%
24-mar-2020	3.367,61		+8,23%
23-mar-2020	3.111,39		-2,69%
22-mar-2020	3.197,26		+0,04%
20-mar-2020	3.195,90		-2,25%
19-mar-2020	3.269,60		+0,49%
18-mar-2020	3.253,53		-4,32%
17-mar-2020	3.400,39		+3,95%
16-mar-2020	3.271,28		-9,18%
15-mar-2020	3.602,04		-0,02%
13-mar-2020	3.602,79		+5,57%
12-mar-2020	3.412,55		-8,88%
11-mar-2020	3.745,26		-3,77%
10-mar-2020	3.891,97		+3,21%
09-mar-2020	3.771,10		-6,36%
08-mar-2020	4.027,06		-0,04%
06-mar-2020	4.028,73		-1,84%
05-mar-2020	4.104,04		-1,87%
04-mar-2020	4.182,21		+2,97%
03-mar-2020	4.061,70		-1,33%
02-mar-2020	4.116,64		+3,42%



01-mar-2020	3.980,54		-0,12%
28-feb-2020	3.985,31		-1,12%
27-feb-2020	4.030,42		-3,43%
26-feb-2020	4.173,72		-0,37%
25-feb-2020	4.189,05		-2,27%
24-feb-2020	4.286,52		-3,09%
23-feb-2020	4.423,21		-0,00%
21-feb-2020	4.423,29		-0,93%
20-feb-2020	4.464,90		-0,58%
19-feb-2020	4.491,07		+0,70%
18-feb-2020	4.459,78		-0,47%
17-feb-2020	4.480,62		-0,02%
16-feb-2020	4.481,44		+0,00%
14-feb-2020	4.481,25		+0,16%
13-feb-2020	4.473,97		-0,18%
12-feb-2020	4.482,12		+0,63%
11-feb-2020	4.454,00		+0,28%
10-feb-2020	4.441,53		+0,44%
09-feb-2020	4.422,05		+0,04%
07-feb-2020	4.420,25		-0,67%
06-feb-2020	4.449,88		+0,55%
05-feb-2020	4.425,44		+0,71%
04-feb-2020	4.394,17		+1,62%
03-feb-2020	4.324,19		+0,69%
02-feb-2020	4.294,35		-0,01%
31-gen-2020	4.294,95		-1,58%
30-gen-2020	4.363,68		-0,34%
29-gen-2020	4.378,42		+0,11%
28-gen-2020	4.373,41		+0,71%
27-gen-2020	4.342,48		-1,63%
26-gen-2020	4.414,23		-0,01%
24-gen-2020	4.414,64		-0,41%
23-gen-2020	4.432,85		-0,24%
22-gen-2020	4.443,60		+0,17%
21-gen-2020	4.436,07		-0,32%
20-gen-2020	4.450,37		+0,01%
17-gen-2020	4.449,92		+0,45%
16-gen-2020	4.430,15		+0,58%
15-gen-2020	4.404,82		+0,24%
14-gen-2020	4.394,28		-0,06%
13-gen-2020	4.396,72		+0,69%
12-gen-2020	4.366,80		-0,01%
10-gen-2020	4.367,02		+0,08%
09-gen-2020	4.363,33		+0,87%
08-gen-2020	4.325,85		+0,22%
07-gen-2020	4.316,45		+0,01%
06-gen-2020	4.315,87		+0,04%
05-gen-2020	4.314,16		+0,01%
03-gen-2020	4.313,91		-0,58%
02-gen-2020	4.339,00		+0,91%
01-gen-2020	4.300,07		+0,00%
31-dic-2019	4.300,00		+0,17%
30-dic-2019	4.292,58		-0,51%
29-dic-2019	4.314,70		-0,01%
27-dic-2019	4.315,24		+0,23%
26-dic-2019	4.305,33		+0,33%

25-dic-2019	4.291,34		-0,01%
24-dic-2019	4.291,84		+0,05%
23-dic-2019	4.289,83		-0,07%
22-dic-2019	4.292,68		+0,30%
20-dic-2019	4.280,02		+0,46%
19-dic-2019	4.260,61		+0,35%
18-dic-2019	4.245,88		-0,11%
17-dic-2019	4.250,45		+0,04%
16-dic-2019	4.248,60		+0,72%
15-dic-2019	4.218,12		+0,03%
13-dic-2019	4.216,81		+0,58%
12-dic-2019	4.192,61		+0,62%
11-dic-2019	4.166,63		+0,37%
10-dic-2019	4.151,45		-0,05%
09-dic-2019	4.153,33		-0,20%
08-dic-2019	4.161,76		-0,03%
06-dic-2019	4.163,02		+0,88%
05-dic-2019	4.126,56		+0,25%
04-dic-2019	4.116,45		+0,48%
03-dic-2019	4.096,92		-0,45%
02-dic-2019	4.115,33		-0,68%
01-dic-2019	4.143,64		+0,01%
29-nov-2019	4.143,43		-0,49%
28-nov-2019	4.163,81		-0,02%
27-nov-2019	4.164,73		+0,40%
26-nov-2019	4.148,05		+0,29%
25-nov-2019	4.136,11		+0,88%
24-nov-2019	4.100,20		+0,02%
22-nov-2019	4.099,52		+0,09%
21-nov-2019	4.095,91		-0,35%
20-nov-2019	4.110,10		-0,40%
19-nov-2019	4.126,63		+0,07%
18-nov-2019	4.123,82		+0,15%
17-nov-2019	4.117,83		-0,00%
15-nov-2019	4.117,89		+0,84%
14-nov-2019	4.083,47		-0,09%
13-nov-2019	4.087,27		+0,01%
12-nov-2019	4.086,84		+0,24%
11-nov-2019	4.076,96		-0,21%
10-nov-2019	4.085,48		+0,02%
08-nov-2019	4.084,56		+0,09%
07-nov-2019	4.080,76		+0,22%
06-nov-2019	4.071,60		+0,02%
05-nov-2019	4.070,86		-0,16%
04-nov-2019	4.077,18		+0,47%
03-nov-2019	4.057,92		-0,00%
01-nov-2019	4.057,93		+0,82%
31-ott-2019	4.025,00		-0,07%
30-ott-2019	4.027,67		+0,32%
29-ott-2019	4.014,74		-0,07%
28-ott-2019	4.017,58		+0,59%
27-ott-2019	3.993,82		+0,02%
25-ott-2019	3.993,12		+0,50%
24-ott-2019	3.973,28		+0,52%
23-ott-2019	3.952,82		+0,16%
22-ott-2019	3.946,45		-0,41%

21-ott-2019	3.962,69		+0,54%
18-ott-2019	3.941,54		-0,43%
17-ott-2019	3.958,72		+0,29%
16-ott-2019	3.947,23		-0,16%
15-ott-2019	3.953,45		+0,83%
14-ott-2019	3.921,01		-0,08%
13-ott-2019	3.924,05		-0,02%
11-ott-2019	3.925,02		+1,33%
10-ott-2019	3.873,60		+0,47%
09-ott-2019	3.855,35		+0,68%
08-ott-2019	3.829,33		-1,19%
07-ott-2019	3.875,58		-0,21%
04-ott-2019	3.883,55		+1,14%
03-ott-2019	3.839,77		+0,76%
02-ott-2019	3.810,98		-1,68%
01-ott-2019	3.875,94		-0,89%
30-set-2019	3.910,87		+0,32%
29-set-2019	3.898,41		+0,00%
27-set-2019	3.898,25		-0,62%
26-set-2019	3.922,60		+0,02%
25-set-2019	3.921,77		+0,11%
24-set-2019	3.917,39		-0,59%
23-set-2019	3.940,67		-0,15%
20-set-2019	3.946,56		-0,25%
19-set-2019	3.956,64		+0,18%
18-set-2019	3.949,38		+0,04%
17-set-2019	3.947,69		+0,27%
16-set-2019	3.937,08		-0,37%
15-set-2019	3.951,66		-0,01%
13-set-2019	3.952,02		-0,02%
12-set-2019	3.952,65		+0,38%
11-set-2019	3.937,67		+0,76%
10-set-2019	3.907,99		-0,36%
09-set-2019	3.922,20		-0,41%
08-set-2019	3.938,39		+0,03%
06-set-2019	3.937,23		+0,18%
05-set-2019	3.930,26		+1,29%
04-set-2019	3.880,08		+1,10%
03-set-2019	3.837,75		-0,70%
02-set-2019	3.864,78		-0,03%
01-set-2019	3.866,07		+0,03%
30-ago-2019	3.864,89		+0,26%
29-ago-2019	3.854,88		+1,01%
28-ago-2019	3.816,50		+0,28%
27-ago-2019	3.805,80		+0,22%
26-ago-2019	3.797,61		+0,40%
25-ago-2019	3.782,44		-0,07%
23-ago-2019	3.785,06		-1,76%
22-ago-2019	3.853,01		-0,34%
21-ago-2019	3.866,04		+0,82%
20-ago-2019	3.834,74		-0,34%
19-ago-2019	3.847,81		+1,14%
18-ago-2019	3.804,41		-0,01%
16-ago-2019	3.804,62		+1,22%
15-ago-2019	3.758,87		-0,16%
14-ago-2019	3.764,76		-2,04%

13-ago-2019	3.843,27		+0,87%
12-ago-2019	3.810,28		-0,78%
09-ago-2019	3.840,11		-0,62%
08-ago-2019	3.864,06		+1,81%
07-ago-2019	3.795,43		+0,40%
06-ago-2019	3.780,45		+0,75%
05-ago-2019	3.752,36		-2,77%
02-ago-2019	3.859,43		-1,21%
01-ago-2019	3.906,72		-0,50%
31-lug-2019	3.926,53		-0,96%
30-lug-2019	3.964,74		-0,29%
29-lug-2019	3.976,12		-0,17%
28-lug-2019	3.982,74		+0,00%
26-lug-2019	3.982,71		+0,50%
25-lug-2019	3.963,07		-0,45%
24-lug-2019	3.980,96		+0,39%
23-lug-2019	3.965,45		+0,52%
22-lug-2019	3.944,97		+0,32%
21-lug-2019	3.932,53		+0,00%
19-lug-2019	3.932,38		-0,13%
18-lug-2019	3.937,63		+0,06%
17-lug-2019	3.935,18		

## MSCI EMERGING MARKETS

.dMIEF00000PUS History Daily 01-Sep-2008 – 01 Sep-2009

Exchange Date	Close	Adjusted Close	%Chg
01-set-2009	842,114		+0,316%
31-ago-2009	839,460		-1,410%
28-ago-2009	851,462		+0,885%
27-ago-2009	843,994		-0,926%
26-ago-2009	851,884		-0,743%
25-ago-2009	858,259		-0,361%
24-ago-2009	861,370		+1,876%
21-ago-2009	845,507		+1,002%
20-ago-2009	837,120		+1,733%
19-ago-2009	822,861		-0,283%
18-ago-2009	825,194		+0,654%
17-ago-2009	819,831		-3,859%
14-ago-2009	852,738		-0,339%
13-ago-2009	855,638		+1,833%
12-ago-2009	840,239		-0,552%
11-ago-2009	844,900		-1,156%
10-ago-2009	854,779		+0,217%
07-ago-2009	852,931		-0,302%
06-ago-2009	855,518		+0,114%
05-ago-2009	854,541		-0,706%
04-ago-2009	860,618		-0,475%
03-ago-2009	864,729		+2,453%
31-lug-2009	844,024		+1,257%
30-lug-2009	833,544		+1,350%
29-lug-2009	822,438		-1,692%
28-lug-2009	836,593		+0,351%
27-lug-2009	833,663		+1,208%
24-lug-2009	823,714		+0,195%

23-lug-2009	822,114	+1,930%
22-lug-2009	806,551	-0,483%
21-lug-2009	810,463	+0,427%
20-lug-2009	807,021	+3,110%
17-lug-2009	782,680	+1,199%
16-lug-2009	773,408	+0,960%
15-lug-2009	766,052	+3,579%
14-lug-2009	739,582	+2,286%
13-lug-2009	723,052	-1,762%
10-lug-2009	736,019	-0,772%
09-lug-2009	741,747	+0,310%
08-lug-2009	739,454	-1,501%
07-lug-2009	750,722	-0,082%
06-lug-2009	751,335	-1,955%
03-lug-2009	766,318	+0,024%
02-lug-2009	766,137	-0,897%
01-lug-2009	773,073	+1,547%
30-giu-2009	761,295	-0,443%
29-giu-2009	764,679	+0,362%
26-giu-2009	761,919	+1,559%
25-giu-2009	750,225	+1,136%
24-giu-2009	741,797	+2,498%
23-giu-2009	723,719	-1,733%
22-giu-2009	736,481	-1,864%
19-giu-2009	750,473	+0,908%
18-giu-2009	743,723	-0,707%
17-giu-2009	749,021	-2,041%
16-giu-2009	764,629	-0,690%
15-giu-2009	769,938	-2,562%
12-giu-2009	790,185	-0,107%
11-giu-2009	791,032	+0,240%
10-giu-2009	789,135	+2,328%
09-giu-2009	771,184	-0,138%
08-giu-2009	772,253	-1,869%
05-giu-2009	786,965	+0,666%
04-giu-2009	781,757	-0,314%
03-giu-2009	784,221	-1,429%
02-giu-2009	795,592	-0,825%
01-giu-2009	802,210	+3,763%
29-mag-2009	773,121	+1,494%
28-mag-2009	761,744	+1,003%
27-mag-2009	754,180	+1,969%
26-mag-2009	739,618	-1,001%
25-mag-2009	747,094	+0,091%
22-mag-2009	746,417	+0,737%
21-mag-2009	740,957	-1,999%
20-mag-2009	756,070	+1,374%
19-mag-2009	745,819	+2,378%
18-mag-2009	728,492	+2,905%
15-mag-2009	707,928	+1,221%
14-mag-2009	699,391	-1,476%
13-mag-2009	709,866	-1,562%
12-mag-2009	721,131	-0,339%
11-mag-2009	723,585	-0,213%
08-mag-2009	725,131	+1,429%
07-mag-2009	714,913	+0,402%
06-mag-2009	712,051	+1,101%
05-mag-2009	704,294	+0,472%
04-mag-2009	700,985	+5,756%
01-mag-2009	662,835	+0,016%
30-apr-2009	662,730	+2,659%
29-apr-2009	645,562	+3,502%
28-apr-2009	623,720	-1,547%
27-apr-2009	633,518	-2,210%
24-apr-2009	647,837	+1,264%
23-apr-2009	639,753	+1,672%
22-apr-2009	629,231	+0,317%

21-apr-2009	627,245	-0,985%
20-apr-2009	633,484	-1,541%
17-apr-2009	643,398	-0,770%
16-apr-2009	648,392	+0,705%
15-apr-2009	643,855	-0,264%
14-apr-2009	645,561	+0,775%
13-apr-2009	640,597	+1,260%
10-apr-2009	632,628	0,000%
09-apr-2009	632,628	+3,672%
08-apr-2009	610,220	-0,920%
07-apr-2009	615,888	-1,146%
06-apr-2009	623,031	+0,959%
03-apr-2009	617,114	+0,659%
02-apr-2009	613,072	+5,564%
01-apr-2009	580,758	+1,893%
31-mar-2009	569,967	+1,516%
30-mar-2009	561,456	-5,050%
27-mar-2009	591,320	-1,402%
26-mar-2009	599,731	+2,091%
25-mar-2009	587,446	+1,020%
24-mar-2009	581,513	+0,380%
23-mar-2009	579,310	+4,759%
20-mar-2009	552,991	-0,801%
19-mar-2009	557,456	+2,497%
18-mar-2009	543,878	+0,361%
17-mar-2009	541,919	+0,419%
16-mar-2009	539,660	+2,213%
13-mar-2009	527,977	+2,328%
12-mar-2009	515,967	+0,676%
11-mar-2009	512,503	+1,950%
10-mar-2009	502,701	+3,587%
09-mar-2009	485,292	-0,619%
06-mar-2009	488,314	+0,034%
05-mar-2009	488,148	-1,078%
04-mar-2009	493,467	+3,635%
03-mar-2009	476,159	+0,227%
02-mar-2009	475,080	-4,852%
27-feb-2009	499,304	-1,292%
26-feb-2009	505,837	+0,082%
25-feb-2009	505,425	+0,534%
24-feb-2009	502,740	-1,451%
23-feb-2009	510,143	+1,519%
20-feb-2009	502,509	-3,623%
19-feb-2009	521,398	+0,982%
18-feb-2009	516,326	-0,873%
17-feb-2009	520,874	-4,872%
16-feb-2009	547,551	-1,219%
13-feb-2009	554,308	+2,140%
12-feb-2009	542,693	-1,960%
11-feb-2009	553,542	-1,396%
10-feb-2009	561,381	-0,607%
09-feb-2009	564,807	+1,306%
06-feb-2009	557,526	+3,906%
05-feb-2009	536,569	+0,112%
04-feb-2009	535,968	+2,022%
03-feb-2009	525,347	+1,588%
02-feb-2009	517,137	-2,341%
30-gen-2009	529,532	-0,497%
29-gen-2009	532,177	-0,175%
28-gen-2009	533,112	+2,733%
27-gen-2009	518,929	+0,591%
26-gen-2009	515,879	+1,693%
23-gen-2009	507,289	-1,375%
22-gen-2009	514,362	-0,156%
21-gen-2009	515,164	-0,458%
20-gen-2009	517,536	-3,054%
19-gen-2009	533,841	-0,743%

16-gen-2009	537,837	+2,126%
15-gen-2009	526,642	-2,985%
14-gen-2009	542,848	-1,461%
13-gen-2009	550,894	-0,421%
12-gen-2009	553,221	-3,156%
09-gen-2009	571,249	-1,236%
08-gen-2009	578,400	-2,824%
07-gen-2009	595,207	-2,007%
06-gen-2009	607,395	+1,412%
05-gen-2009	598,940	+3,095%
02-gen-2009	580,957	+2,244%
01-gen-2009	568,209	+0,206%
31-dic-2008	567,042	+0,223%
30-dic-2008	565,779	+1,490%
29-dic-2008	557,471	+1,068%
26-dic-2008	551,578	-0,380%
25-dic-2008	553,684	0,000%
24-dic-2008	553,684	-0,384%
23-dic-2008	555,817	-2,031%
22-dic-2008	567,339	-2,529%
19-dic-2008	582,058	-1,396%
18-dic-2008	590,296	+0,708%
17-dic-2008	586,145	+2,499%
16-dic-2008	571,853	+1,632%
15-dic-2008	562,670	+1,986%
12-dic-2008	551,712	-3,019%
11-dic-2008	568,888	+1,146%
10-dic-2008	562,442	+4,631%
09-dic-2008	537,549	+0,086%
08-dic-2008	537,085	+7,954%
05-dic-2008	497,511	-0,848%
04-dic-2008	501,766	-0,321%
03-dic-2008	503,380	+0,430%
02-dic-2008	501,225	-2,370%
01-dic-2008	513,391	-2,577%
28-nov-2008	526,972	+0,194%
27-nov-2008	525,954	+2,472%
26-nov-2008	513,265	+2,576%
25-nov-2008	500,375	+3,059%
24-nov-2008	485,521	+3,825%
21-nov-2008	467,635	+0,716%
20-nov-2008	464,311	-5,163%
19-nov-2008	489,590	-2,176%
18-nov-2008	500,482	-3,771%
17-nov-2008	520,095	-1,921%
14-nov-2008	530,280	+1,175%
13-nov-2008	524,120	-1,756%
12-nov-2008	533,486	-3,984%
11-nov-2008	555,624	-4,699%
10-nov-2008	583,018	+3,232%
07-nov-2008	564,763	+1,274%
06-nov-2008	557,661	-7,084%
05-nov-2008	600,179	-0,491%
04-nov-2008	603,142	+3,214%
03-nov-2008	584,360	+2,426%
31-ott-2008	570,521	+1,636%
30-ott-2008	561,335	+10,598%
29-ott-2008	507,547	+4,665%
28-ott-2008	484,927	+6,732%
27-ott-2008	454,340	-4,144%
24-ott-2008	473,984	-7,837%
23-ott-2008	514,291	-3,815%
22-ott-2008	534,690	-7,844%
21-ott-2008	580,200	-1,760%
20-ott-2008	590,592	+3,992%
17-ott-2008	567,920	-1,488%
16-ott-2008	576,501	-7,508%

15-ott-2008	623,297	-7,488%
14-ott-2008	673,749	+5,992%
13-ott-2008	635,663	+7,393%
10-ott-2008	591,901	-4,363%
09-ott-2008	618,902	+2,156%
08-ott-2008	605,841	-8,079%
07-ott-2008	659,089	-1,801%
06-ott-2008	671,179	-9,511%
03-ott-2008	741,726	-2,340%
02-ott-2008	759,498	-3,393%
01-ott-2008	786,174	-0,095%
30-set-2008	786,924	+1,531%
29-set-2008	775,057	-5,905%
26-set-2008	823,694	-1,741%
25-set-2008	838,289	+0,840%
24-set-2008	831,305	+0,118%
23-set-2008	830,322	-2,827%
22-set-2008	854,475	+1,054%
19-set-2008	845,563	+10,123%
18-set-2008	767,838	-0,141%
17-set-2008	768,919	-2,000%
16-set-2008	784,608	-4,936%
15-set-2008	825,348	-3,521%
12-set-2008	855,472	+1,865%
11-set-2008	839,812	-2,227%
10-set-2008	858,938	-1,110%
09-set-2008	868,583	-3,759%
08-set-2008	902,505	+3,299%
05-set-2008	873,680	-2,193%
04-set-2008	893,271	-2,049%
03-set-2008	911,958	-1,792%
02-set-2008	928,599	-0,645%
01-set-2008	934,631	

**.dMIEF0000PUS History Daily 17-Jul-2019 - 17-Jul-2020**

Exchange Date	Close	Adjusted Close	%Chg
17-lug-2020	1.055,061		+0,864%
16-lug-2020	1.046,028		-1,900%
15-lug-2020	1.066,285		+0,638%
14-lug-2020	1.059,524		-1,105%
13-lug-2020	1.071,364		+0,196%
10-lug-2020	1.069,273		-0,965%
09-lug-2020	1.079,689		+0,892%
08-lug-2020	1.070,139		+1,672%
07-lug-2020	1.052,543		-0,750%
06-lug-2020	1.060,497		+2,653%
03-lug-2020	1.033,088		+0,939%
02-lug-2020	1.023,476		+2,238%
01-lug-2020	1.001,075		+0,601%
30-giu-2020	995,098		+0,115%
29-giu-2020	993,957		-0,494%
26-giu-2020	998,896		-0,552%
25-giu-2020	1.004,443		-0,628%
24-giu-2020	1.010,793		-0,377%
23-giu-2020	1.014,621		+1,443%
22-giu-2020	1.000,191		-0,116%
19-giu-2020	1.001,357		+0,621%
18-giu-2020	995,177		+0,056%
17-giu-2020	994,619		+0,480%
16-giu-2020	989,867		+2,437%
15-giu-2020	966,321		-2,096%
12-giu-2020	987,013		-0,662%
11-giu-2020	993,589		-1,869%
10-giu-2020	1.012,512		+0,287%
09-giu-2020	1.009,610		+0,214%
08-giu-2020	1.007,459		+0,479%



05-giu-2020	1.002,654		+1,401%
04-giu-2020	988,798		+0,079%
03-giu-2020	988,015		+2,122%
02-giu-2020	967,481		+1,682%
01-giu-2020	951,479		+2,271%
29-mag-2020	930,354		+0,542%
28-mag-2020	925,339		-0,218%
27-mag-2020	927,365		+0,077%
26-mag-2020	926,653		+1,673%
25-mag-2020	911,406		+0,680%
22-mag-2020	905,254		-2,662%
21-mag-2020	930,010		-0,160%
20-mag-2020	931,500		+0,679%
19-mag-2020	925,215		+1,386%
18-mag-2020	912,571		+1,266%
15-mag-2020	901,164		+0,032%
14-mag-2020	900,874		-0,915%
13-mag-2020	909,197		-0,012%
12-mag-2020	909,307		-0,720%
11-mag-2020	915,900		+0,466%
08-mag-2020	911,653		+1,646%
07-mag-2020	896,887		-0,202%
06-mag-2020	898,698		+0,330%
05-mag-2020	895,738		+0,874%
04-mag-2020	887,978		-3,141%
01-mag-2020	916,771		-0,883%
30-apr-2020	924,937		+0,574%
29-apr-2020	919,655		+1,878%
28-apr-2020	902,700		+0,823%
27-apr-2020	895,328		+1,810%
24-apr-2020	879,411		-1,391%
23-apr-2020	891,814		+0,358%
22-apr-2020	888,636		+1,184%
21-apr-2020	878,238		-2,345%
20-apr-2020	899,326		-0,220%
17-apr-2020	901,313		+1,860%
16-apr-2020	884,858		-0,370%
15-apr-2020	888,141		-0,909%
14-apr-2020	896,285		+1,488%
13-apr-2020	883,142		-0,565%
10-apr-2020	888,160		+0,065%
09-apr-2020	887,584		+1,572%
08-apr-2020	873,847		-0,490%
07-apr-2020	878,152		+2,849%
06-apr-2020	853,830		+2,658%
03-apr-2020	831,723		-0,812%
02-apr-2020	838,528		+1,362%
01-apr-2020	827,260		-2,512%
31-mar-2020	848,577		+1,990%
30-mar-2020	832,023		-1,248%
27-mar-2020	842,540		-1,026%
26-mar-2020	851,275		+1,762%
25-mar-2020	836,538		+4,351%
24-mar-2020	801,657		+5,731%
23-mar-2020	758,204		-5,606%
20-mar-2020	803,231		+4,804%
19-mar-2020	766,411		-2,717%
18-mar-2020	787,812		-4,702%
17-mar-2020	826,679		-0,780%
16-mar-2020	833,181		-6,510%
13-mar-2020	891,195		+0,914%
12-mar-2020	883,126		-6,708%
11-mar-2020	946,623		-1,858%
10-mar-2020	964,548		+1,754%
09-mar-2020	947,921		-6,340%
06-mar-2020	1.012,084		-2,622%
05-mar-2020	1.039,340		+0,148%

04-mar-2020	1.037,808		+0,972%
03-mar-2020	1.027,816		+1,060%
02-mar-2020	1.017,031		+1,145%
28-feb-2020	1.005,516		-2,441%
27-feb-2020	1.030,670		-1,212%
26-feb-2020	1.043,314		-1,252%
25-feb-2020	1.056,543		+0,116%
24-feb-2020	1.055,322		-2,665%
21-feb-2020	1.084,218		-1,013%
20-feb-2020	1.095,315		-0,759%
19-feb-2020	1.103,692		+0,733%
18-feb-2020	1.095,661		-1,113%
17-feb-2020	1.107,994		+0,153%
14-feb-2020	1.106,304		+0,021%
13-feb-2020	1.106,070		-0,327%
12-feb-2020	1.109,697		+0,936%
11-feb-2020	1.099,408		+1,148%
10-feb-2020	1.086,930		-0,432%
07-feb-2020	1.091,645		-0,974%
06-feb-2020	1.102,385		+1,191%
05-feb-2020	1.089,405		+0,370%
04-feb-2020	1.085,394		+2,365%
03-feb-2020	1.060,321		-0,190%
31-gen-2020	1.062,343		-0,974%
30-gen-2020	1.072,789		-2,253%
29-gen-2020	1.097,514		-0,382%
28-gen-2020	1.101,719		-0,114%
27-gen-2020	1.102,977		-1,466%
24-gen-2020	1.119,387		-0,250%
23-gen-2020	1.122,194		-0,989%
22-gen-2020	1.133,403		+0,582%
21-gen-2020	1.126,850		-1,643%
20-gen-2020	1.145,678		-0,100%
17-gen-2020	1.146,829		+0,544%
16-gen-2020	1.140,621		+0,232%
15-gen-2020	1.137,983		-0,514%
14-gen-2020	1.143,863		-0,012%
13-gen-2020	1.144,002		+0,915%
10-gen-2020	1.133,632		+0,377%
09-gen-2020	1.129,370		+1,617%
08-gen-2020	1.111,399		-0,398%
07-gen-2020	1.115,836		+0,297%
06-gen-2020	1.112,529		-1,009%
03-gen-2020	1.123,865		-0,368%
02-gen-2020	1.128,012		+1,200%
01-gen-2020	1.114,635		-0,002%
31-dic-2019	1.114,660		-0,336%
30-dic-2019	1.118,422		-0,017%
27-dic-2019	1.118,609		+0,587%
26-dic-2019	1.112,084		+0,265%
25-dic-2019	1.109,141		+0,006%
24-dic-2019	1.109,073		-0,231%
23-dic-2019	1.111,639		+0,361%
20-dic-2019	1.107,643		+0,092%
19-dic-2019	1.106,629		-0,230%
18-dic-2019	1.109,184		+0,596%
17-dic-2019	1.102,609		+1,347%
16-dic-2019	1.087,956		+0,096%
13-dic-2019	1.086,913		+1,513%
12-dic-2019	1.070,711		+1,180%
11-dic-2019	1.058,229		+0,832%
10-dic-2019	1.049,501		-0,153%
09-dic-2019	1.051,112		+0,205%
06-dic-2019	1.048,958		+0,586%
05-dic-2019	1.042,847		+0,606%
04-dic-2019	1.036,567		-0,078%
03-dic-2019	1.037,379		-0,273%

02-dic-2019	1.040,215		+0,016%
29-nov-2019	1.040,045		-0,985%
28-nov-2019	1.050,392		-0,241%
27-nov-2019	1.052,928		+0,486%
26-nov-2019	1.047,836		-0,535%
25-nov-2019	1.053,472		+0,470%
22-nov-2019	1.048,546		+0,380%
21-nov-2019	1.044,577		-0,706%
20-nov-2019	1.052,000		-0,488%
19-nov-2019	1.057,158		+0,479%
18-nov-2019	1.052,115		+0,317%
15-nov-2019	1.048,791		+0,627%
14-nov-2019	1.042,255		-0,151%
13-nov-2019	1.043,827		-1,137%
12-nov-2019	1.055,833		+0,280%
11-nov-2019	1.052,881		-1,124%
08-nov-2019	1.064,846		-0,813%
07-nov-2019	1.073,572		+0,440%
06-nov-2019	1.068,866		-0,220%
05-nov-2019	1.071,221		+0,627%
04-nov-2019	1.064,548		+1,464%
01-nov-2019	1.049,190		+0,692%
31-ott-2019	1.041,981		+0,046%
30-ott-2019	1.041,498		-0,214%
29-ott-2019	1.043,727		+0,073%
28-ott-2019	1.042,968		+0,688%
25-ott-2019	1.035,838		-0,151%
24-ott-2019	1.037,408		+0,627%
23-ott-2019	1.030,947		-0,303%
22-ott-2019	1.034,077		+0,542%
21-ott-2019	1.028,506		+0,438%
18-ott-2019	1.024,023		-0,425%
17-ott-2019	1.028,389		+0,420%
16-ott-2019	1.024,085		+0,475%
15-ott-2019	1.019,247		+0,177%
14-ott-2019	1.017,451		+0,584%
11-ott-2019	1.011,544		+1,510%
10-ott-2019	996,500		+0,351%
09-ott-2019	993,012		-0,094%
08-ott-2019	993,948		-0,022%
07-ott-2019	994,162		-0,243%
04-ott-2019	996,580		+0,434%
03-ott-2019	992,278		+0,311%
02-ott-2019	989,200		-0,930%
01-ott-2019	998,485		-0,251%
30-set-2019	1.000,996		-0,050%
27-set-2019	1.001,499		-0,773%
26-set-2019	1.009,297		+0,371%
25-set-2019	1.005,564		-0,572%
24-set-2019	1.011,352		-0,382%
23-set-2019	1.015,232		-0,591%
20-set-2019	1.021,265		+0,462%
19-set-2019	1.016,566		-0,470%
18-set-2019	1.021,363		+0,239%
17-set-2019	1.018,926		-0,794%
16-set-2019	1.027,083		+0,046%
13-set-2019	1.026,610		+0,419%
12-set-2019	1.022,325		+0,519%
11-set-2019	1.017,044		+0,885%
10-set-2019	1.008,127		-0,243%
09-set-2019	1.010,585		+0,260%
06-set-2019	1.007,961		+0,494%
05-set-2019	1.003,007		+1,252%
04-set-2019	990,608		+1,781%
03-set-2019	973,275		-1,066%
02-set-2019	983,764		-0,058%
30-ago-2019	984,334		+1,470%

29-ago-2019	970,077		+0,490%
28-ago-2019	965,346		+0,078%
27-ago-2019	964,591		+0,393%
26-ago-2019	960,813		-1,320%
23-ago-2019	973,662		-0,205%
22-ago-2019	975,660		-0,761%
21-ago-2019	983,140		+0,309%
20-ago-2019	980,110		+0,243%
19-ago-2019	977,733		+0,769%
16-ago-2019	970,271		+0,701%
15-ago-2019	963,521		-0,094%
14-ago-2019	964,428		-0,458%
13-ago-2019	968,867		-0,576%
12-ago-2019	974,477		-0,685%
09-ago-2019	981,194		-0,315%
08-ago-2019	984,298		+1,197%
07-ago-2019	972,653		-0,002%
06-ago-2019	972,673		-0,033%
05-ago-2019	972,998		-3,064%
02-ago-2019	1.003,757		-2,031%
01-ago-2019	1.024,561		-1,200%
31-lug-2019	1.037,009		-0,588%
30-lug-2019	1.043,145		-0,247%
29-lug-2019	1.045,725		-0,280%
26-lug-2019	1.048,664		-0,533%
25-lug-2019	1.054,285		-0,100%
24-lug-2019	1.055,343		-0,014%
23-lug-2019	1.055,486		+0,159%
22-lug-2019	1.053,811		-0,348%
19-lug-2019	1.057,492		+0,549%
18-lug-2019	1.051,720		-0,301%
17-lug-2019	1.054,896		

## Islamic Portfolio Construction

<b>KSA SUKUK LIMITED</b>			
<b>Saudi Arabia Kingdom</b>			
KSASK 2.8940 20-Apr-2022 MTN			
<b>Avg Value</b>	2,05	101,707	
<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>	
17-Jul-2020	1,088	\$	103,12
16-Jul-2020	1,092	\$	103,11
15-Jul-2020	1,163	\$	103,00
14-Jul-2020	1,243	\$	102,86
13-Jul-2020	1,168	\$	103,02
10-Jul-2020	1,183	\$	102,97
09-Jul-2020	1,097	\$	103,14
08-Jul-2020	1,108	\$	103,14
07-Jul-2020	1,113	\$	103,13
06-Jul-2020	1,116	\$	103,13
03-Jul-2020	1,256	\$	102,88
02-Jul-2020	1,258	\$	102,88
01-Jul-2020	1,269	\$	102,86
30-Jun-2020	1,286	\$	102,85
29-Jun-2020	1,258	\$	102,91

26-Jun-2020	1,261	\$ 102,91
25-Jun-2020	1,278	\$ 102,88
24-Jun-2020	1,278	\$ 102,89
23-Jun-2020	1,288	\$ 102,88
22-Jun-2020	1,304	\$ 102,85
19-Jun-2020	1,291	\$ 102,88
18-Jun-2020	1,371	\$ 102,74
17-Jun-2020	1,379	\$ 102,74
16-Jun-2020	1,362	\$ 102,77
15-Jun-2020	1,519	\$ 102,47
12-Jun-2020	1,449	\$ 102,61
11-Jun-2020	1,474	\$ 102,58
10-Jun-2020	1,433	\$ 102,68
09-Jun-2020	1,518	\$ 102,51
08-Jun-2020	1,608	\$ 102,35
05-Jun-2020	1,616	\$ 102,36
04-Jun-2020	1,593	\$ 102,38
03-Jun-2020	1,602	\$ 102,38
02-Jun-2020	1,680	\$ 102,24
01-Jun-2020	1,669	\$ 102,26
29-May-2020	1,659	\$ 102,27
28-May-2020	1,675	\$ 102,25
27-May-2020	1,708	\$ 102,20
26-May-2020	1,675	\$ 102,26
25-May-2020	1,684	\$ 102,25
22-May-2020	1,689	\$ 102,24
21-May-2020	1,557	\$ 102,49
20-May-2020	1,617	\$ 102,39
19-May-2020	1,682	\$ 102,27
18-May-2020	1,721	\$ 102,22
15-May-2020	1,758	\$ 102,13
14-May-2020	1,758	\$ 102,13
13-May-2020	1,703	\$ 102,24
12-May-2020	1,699	\$ 102,28
11-May-2020	1,790	\$ 102,12
08-May-2020	1,867	\$ 101,93
07-May-2020	1,731	\$ 102,19
06-May-2020	1,775	\$ 102,14
05-May-2020	1,845	\$ 101,99
04-May-2020	1,915	\$ 101,87
01-May-2020	1,991	\$ 101,75
30-Apr-2020	2,239	\$ 101,22
29-Apr-2020	2,245	\$ 101,23
28-Apr-2020	2,316	\$ 101,10
27-Apr-2020	2,370	\$ 101,01
24-Apr-2020	2,379	\$ 100,99
23-Apr-2020	2,431	\$ 100,89
22-Apr-2020	2,713	\$ 100,35
21-Apr-2020	2,629	\$ 100,51

20-Apr-2020	2,515	\$ 100,73
17-Apr-2020	2,520	\$ 100,72
16-Apr-2020	2,655	\$ 100,44
15-Apr-2020	2,512	\$ 100,74
14-Apr-2020	2,507	\$ 100,75
13-Apr-2020	2,651	\$ 100,47
10-Apr-2020	2,622	\$ 100,53
09-Apr-2020	2,622	\$ 100,52
08-Apr-2020	2,579	\$ 100,62
07-Apr-2020	2,511	\$ 100,79
06-Apr-2020	2,587	\$ 100,60
03-Apr-2020	2,666	\$ 100,41
02-Apr-2020	2,836	\$ 100,10
01-Apr-2020	2,900	\$ 99,99
31-Mar-2020	2,913	\$ 99,96
30-Mar-2020	3,028	\$ 99,73
27-Mar-2020	2,858	\$ 100,06
26-Mar-2020	3,160	\$ 99,47
25-Mar-2020	3,259	\$ 99,26
24-Mar-2020	3,686	\$ 98,44
23-Mar-2020	4,072	\$ 97,68
20-Mar-2020	3,686	\$ 98,49
19-Mar-2020	3,806	\$ 98,11
18-Mar-2020	3,497	\$ 98,80
17-Mar-2020	2,983	\$ 99,82
16-Mar-2020	2,737	\$ 100,32
13-Mar-2020	2,481	\$ 100,84
12-Mar-2020	2,453	\$ 100,89
11-Mar-2020	2,050	\$ 101,65
10-Mar-2020	2,191	\$ 101,44
09-Mar-2020	1,519	\$ 102,84
06-Mar-2020	1,426	\$ 102,94
05-Mar-2020	1,504	\$ 102,86
04-Mar-2020	1,585	\$ 102,72
03-Mar-2020	1,608	\$ 102,68
02-Mar-2020	1,844	\$ 102,18
28-Feb-2020	1,866	\$ 102,14
27-Feb-2020	1,828	\$ 102,22
26-Feb-2020	1,739	\$ 102,42
25-Feb-2020	1,769	\$ 102,36
24-Feb-2020	1,666	\$ 102,58
21-Feb-2020	1,779	\$ 102,34
20-Feb-2020	1,764	\$ 102,39
19-Feb-2020	1,776	\$ 102,36
18-Feb-2020	1,790	\$ 102,34
17-Feb-2020	1,832	\$ 102,25
14-Feb-2020	1,842	\$ 102,23
13-Feb-2020	1,850	\$ 102,21
12-Feb-2020	1,840	\$ 102,24

11-Feb-2020	1,844	\$ 102,24
10-Feb-2020	1,822	\$ 102,25
07-Feb-2020	1,821	\$ 102,29
06-Feb-2020	1,893	\$ 102,14
05-Feb-2020	1,915	\$ 102,10
04-Feb-2020	1,842	\$ 102,27
03-Feb-2020	1,842	\$ 102,26
31-Jan-2020	1,815	\$ 102,34
30-Jan-2020	1,884	\$ 102,18
29-Jan-2020	1,874	\$ 102,20
28-Jan-2020	1,966	\$ 101,98
27-Jan-2020	1,969	\$ 102,00
24-Jan-2020	2,018	\$ 101,90
23-Jan-2020	2,038	\$ 101,86
22-Jan-2020	2,090	\$ 101,75
21-Jan-2020	2,082	\$ 101,77
20-Jan-2020	2,140	\$ 101,64
17-Jan-2020	2,073	\$ 101,79
16-Jan-2020	2,148	\$ 101,63
15-Jan-2020	2,142	\$ 101,65
14-Jan-2020	2,198	\$ 101,53
13-Jan-2020	2,209	\$ 101,50
10-Jan-2020	2,203	\$ 101,52
09-Jan-2020	2,189	\$ 101,55
08-Jan-2020	2,267	\$ 101,38
07-Jan-2020		\$ 101,40
06-Jan-2020	2,279	\$ 101,36
03-Jan-2020	2,208	\$ 101,51
02-Jan-2020	2,235	\$ 101,46
01-Jan-2020	2,142	\$ 101,68
31-Dec-2019	2,156	\$ 101,64
30-Dec-2019	2,145	\$ 101,67
27-Dec-2019	2,153	\$ 101,65
26-Dec-2019	2,154	\$ 101,65
25-Dec-2019	2,167	\$ 101,63
24-Dec-2019	2,151	\$ 101,67
23-Dec-2019	2,186	\$ 101,59
20-Dec-2019	2,173	\$ 101,62
19-Dec-2019	2,173	\$ 101,62
18-Dec-2019	2,171	\$ 101,64
17-Dec-2019	2,172	\$ 101,63
16-Dec-2019	2,225	\$ 101,52
13-Dec-2019	2,222	\$ 101,52
12-Dec-2019	2,192	\$ 101,59
11-Dec-2019	2,148	\$ 101,70
10-Dec-2019	2,253	\$ 101,46
09-Dec-2019	2,230	\$ 101,52
06-Dec-2019	2,254	\$ 101,46
05-Dec-2019	2,241	\$ 101,49

04-Dec-2019	2,244	\$ 101,49
03-Dec-2019	2,248	\$ 101,48
02-Dec-2019	2,240	\$ 101,54
29-Nov-2019	2,231	\$ 101,53
28-Nov-2019	2,260	\$ 101,45
27-Nov-2019	2,254	\$ 101,48
26-Nov-2019	2,252	\$ 101,49
25-Nov-2019	2,238	\$ 101,52
22-Nov-2019	2,259	\$ 101,47
21-Nov-2019	2,263	\$ 101,47
20-Nov-2019		\$ 101,50
19-Nov-2019	2,255	\$ 101,49
18-Nov-2019	2,276	\$ 101,44
15-Nov-2019	2,254	\$ 101,50
14-Nov-2019	2,246	\$ 101,52
13-Nov-2019	2,322	\$ 101,34
12-Nov-2019	2,349	\$ 101,28
11-Nov-2019	2,375	\$ 101,22
08-Nov-2019	2,388	\$ 101,19
07-Nov-2019	2,330	\$ 101,33
06-Nov-2019	2,312	\$ 101,38
05-Nov-2019	2,327	\$ 101,34
04-Nov-2019	2,263	\$ 101,50
01-Nov-2019	2,265	\$ 101,52
31-Oct-2019	2,243	\$ 101,55
30-Oct-2019	2,288	\$ 101,45
29-Oct-2019	2,309	\$ 101,39
28-Oct-2019	2,299	\$ 101,42
25-Oct-2019	2,282	\$ 101,46
24-Oct-2019	2,290	\$ 101,45
23-Oct-2019	2,280	\$ 101,46
22-Oct-2019	2,325	\$ 101,37
21-Oct-2019	2,291	\$ 101,42
18-Oct-2019	2,278	\$ 101,49
17-Oct-2019	2,274	\$ 101,50
16-Oct-2019	2,311	\$ 101,41
15-Oct-2019	2,330	\$ 101,37
14-Oct-2019	2,308	\$ 101,42
11-Oct-2019	2,324	\$ 101,42
10-Oct-2019	2,293	\$ 101,44
09-Oct-2019	2,328	\$ 101,38
08-Oct-2019	2,269	\$ 101,53
07-Oct-2019	2,321	\$ 101,40
04-Oct-2019	2,288	\$ 101,48
03-Oct-2019	2,208	\$ 101,68
02-Oct-2019	2,265	\$ 101,55
01-Oct-2019	2,274	\$ 101,53
30-Sep-2019	2,272	\$ 101,53
27-Sep-2019	2,279	\$ 101,52



26-Sep-2019	2,300	\$ 101,47
25-Sep-2019	2,329	\$ 101,40
24-Sep-2019	2,261	\$ 101,57
23-Sep-2019	2,339	\$ 101,38
20-Sep-2019	2,229	\$ 101,65
19-Sep-2019	2,299	\$ 101,48
18-Sep-2019	2,355	\$ 101,34
17-Sep-2019	2,283	\$ 101,53
16-Sep-2019	2,225	\$ 101,67
13-Sep-2019	2,183	\$ 101,78
12-Sep-2019	2,086	\$ 102,03
11-Sep-2019	2,065	\$ 102,09
10-Sep-2019	2,077	\$ 102,06
09-Sep-2019	2,013	\$ 102,23
06-Sep-2019	2,015	\$ 102,22
05-Sep-2019	1,887	\$ 102,56
04-Sep-2019	1,899	\$ 102,53
03-Sep-2019	1,972	\$ 102,35
02-Sep-2019	1,904	\$ 102,53
30-Aug-2019	1,955	\$ 102,39
29-Aug-2019	1,969	\$ 102,36
28-Aug-2019	1,956	\$ 102,40
27-Aug-2019	1,995	\$ 102,30
26-Aug-2019	2,079	\$ 102,09
23-Aug-2019	2,031	\$ 102,21
22-Aug-2019	2,042	\$ 102,19
21-Aug-2019	2,100	\$ 102,04
20-Aug-2019	2,081	\$ 102,09
19-Aug-2019	2,135	\$ 101,95
16-Aug-2019	2,028	\$ 102,24
15-Aug-2019	2,077	\$ 102,17
14-Aug-2019	2,129	\$ 101,98
13-Aug-2019	2,232	\$ 101,71
12-Aug-2019	2,148	\$ 101,93
09-Aug-2019	2,231	\$ 101,72
08-Aug-2019	2,193	\$ 101,81
07-Aug-2019	2,350	\$ 101,41
06-Aug-2019	2,310	\$ 101,52
05-Aug-2019	2,287	\$ 101,58
02-Aug-2019	2,331	\$ 101,47
01-Aug-2019	2,335	\$ 101,46
31-Jul-2019	2,404	\$ 101,28
30-Jul-2019	2,363	\$ 101,39
29-Jul-2019	2,378	\$ 101,34
26-Jul-2019	2,351	\$ 101,42
25-Jul-2019	2,361	\$ 101,35
24-Jul-2019	2,378	\$ 101,36
23-Jul-2019	2,391	\$ 101,32
22-Jul-2019	2,422	\$ 101,24

19-Jul-2019	2,440	\$ 101,20
18-Jul-2019	2,361	\$ 101,41
17-Jul-2019	2,355	\$ 101,43

**DUBAI DOF SUKUK LTD**

**Emirate of Dubai**

MAPEF 6.4500 02-May-2022 MTN

2,72 108,213

<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	1,604	\$ 108,47
16-Jul-2020	1,606	\$ 108,48
15-Jul-2020	1,627	\$ 108,48
14-Jul-2020	1,758	\$ 108,25
13-Jul-2020	1,764	\$ 108,25
10-Jul-2020	1,771	\$ 108,25
09-Jul-2020	1,644	\$ 108,50
08-Jul-2020	1,798	\$ 108,25
07-Jul-2020	1,703	\$ 108,44
06-Jul-2020	1,801	\$ 108,27
03-Jul-2020	1,722	\$ 108,43
02-Jul-2020	1,807	\$ 108,27
01-Jul-2020	1,724	\$ 108,44
30-Jun-2020	1,719	\$ 108,50
29-Jun-2020	1,857	\$ 108,25
26-Jun-2020	1,732	\$ 108,50
25-Jun-2020	1,739	\$ 108,50
24-Jun-2020	1,628	\$ 108,75
23-Jun-2020	1,765	\$ 108,50
22-Jun-2020	1,772	\$ 108,50
19-Jun-2020	1,763	\$ 108,53
18-Jun-2020	1,720	\$ 108,62
17-Jun-2020	1,830	\$ 108,45
16-Jun-2020	1,747	\$ 108,62
15-Jun-2020	1,843	\$ 108,45
12-Jun-2020	1,767	\$ 108,61
11-Jun-2020	1,701	\$ 108,75
10-Jun-2020	1,777	\$ 108,64
09-Jun-2020	1,783	\$ 108,64
08-Jun-2020	1,805	\$ 108,61
05-Jun-2020	1,806	\$ 108,62
04-Jun-2020	1,747	\$ 108,75
03-Jun-2020	1,832	\$ 108,62
02-Jun-2020	1,843	\$ 108,61
01-Jun-2020	1,905	\$ 108,50
29-May-2020	1,901	\$ 108,52
28-May-2020	1,917	\$ 108,50
27-May-2020	1,909	\$ 108,54

26-May-2020	1,890	\$ 108,59
25-May-2020	1,972	\$ 108,44
22-May-2020	1,947	\$ 108,49
21-May-2020	1,953	\$ 108,49
20-May-2020	2,034	\$ 108,38
19-May-2020	2,173	\$ 108,11
18-May-2020	2,184	\$ 108,10
15-May-2020	2,239	\$ 108,00
14-May-2020	2,622	\$ 107,25
13-May-2020	2,577	\$ 107,37
12-May-2020	2,697	\$ 107,14
11-May-2020	2,757	\$ 107,03
08-May-2020	2,838	\$ 106,88
07-May-2020	2,792	\$ 106,98
06-May-2020	2,862	\$ 106,87
05-May-2020	2,866	\$ 106,87
04-May-2020	2,991	\$ 106,63
01-May-2020	3,061	\$ 106,50
30-Apr-2020	2,791	\$ 107,04
29-Apr-2020	3,025	\$ 106,58
28-Apr-2020	3,836	\$ 105,00
27-Apr-2020	3,839	\$ 105,00
24-Apr-2020	3,858	\$ 104,97
23-Apr-2020	4,262	\$ 104,18
22-Apr-2020	4,310	\$ 104,10
21-Apr-2020	3,954	\$ 104,81
20-Apr-2020	4,164	\$ 104,40
17-Apr-2020	4,172	\$ 104,39
16-Apr-2020	4,174	\$ 104,39
15-Apr-2020	4,190	\$ 104,38
14-Apr-2020	4,186	\$ 104,39
13-Apr-2020	5,274	\$ 102,25
10-Apr-2020	4,827	\$ 103,12
09-Apr-2020	4,891	\$ 103,00
08-Apr-2020	4,892	\$ 103,00
07-Apr-2020	4,902	\$ 103,00
06-Apr-2020	4,904	\$ 103,00
03-Apr-2020	4,905	\$ 103,00
02-Apr-2020	4,844	\$ 103,13
01-Apr-2020	4,913	\$ 103,00
31-Mar-2020	4,915	\$ 103,00
30-Mar-2020	4,917	\$ 103,00
27-Mar-2020	4,928	\$ 102,98
26-Mar-2020	5,094	\$ 102,65
25-Mar-2020	5,425	\$ 102,00
24-Mar-2020	5,933	\$ 101,00
23-Mar-2020	7,528	\$ 97,93
20-Mar-2020		
19-Mar-2020	4,659	\$ 103,55

18-Mar-2020	4,752	\$ 103,37
17-Mar-2020	4,521	\$ 103,85
16-Mar-2020	4,402	\$ 104,10
13-Mar-2020		
12-Mar-2020		
11-Mar-2020	3,418	\$ 106,19
10-Mar-2020	3,084	\$ 106,91
09-Mar-2020	3,196	\$ 106,68
06-Mar-2020	2,255	\$ 108,73
05-Mar-2020	2,333	\$ 108,57
04-Mar-2020	2,361	\$ 108,54
03-Mar-2020	2,430	\$ 108,40
02-Mar-2020	2,462	\$ 108,34
28-Feb-2020	2,575	\$ 108,10
27-Feb-2020	2,455	\$ 108,38
26-Feb-2020	2,377	\$ 108,59
25-Feb-2020	2,328	\$ 108,71
24-Feb-2020	2,351	\$ 108,67
21-Feb-2020	2,378	\$ 108,62
20-Feb-2020	2,311	\$ 108,78
19-Feb-2020	2,357	\$ 108,71
18-Feb-2020	2,357	\$ 108,72
17-Feb-2020	2,371	\$ 108,70
14-Feb-2020	2,404	\$ 108,63
13-Feb-2020	2,409	\$ 108,62
12-Feb-2020	2,430	\$ 108,62
11-Feb-2020	2,434	\$ 108,62
10-Feb-2020	2,437	\$ 108,62
07-Feb-2020	2,444	\$ 108,62
06-Feb-2020	2,404	\$ 108,72
05-Feb-2020	2,471	\$ 108,60
04-Feb-2020	2,480	\$ 108,59
03-Feb-2020	2,489	\$ 108,58
31-Jan-2020	2,528	\$ 108,50
30-Jan-2020	2,478	\$ 108,63
29-Jan-2020	2,492	\$ 108,62
28-Jan-2020	2,546	\$ 108,50
27-Jan-2020	2,550	\$ 108,50
24-Jan-2020	2,555	\$ 108,50
23-Jan-2020	2,559	\$ 108,50
22-Jan-2020	2,572	\$ 108,50
21-Jan-2020	2,577	\$ 108,50
20-Jan-2020	2,581	\$ 108,50
17-Jan-2020	2,581	\$ 108,50
16-Jan-2020	2,586	\$ 108,50
15-Jan-2020	2,603	\$ 108,50
14-Jan-2020	2,607	\$ 108,50
13-Jan-2020	2,611	\$ 108,50
10-Jan-2020	2,616	\$ 108,50

09-Jan-2020	2,567	\$ 108,62
08-Jan-2020	2,633	\$ 108,50
07-Jan-2020	2,637	\$ 108,50
06-Jan-2020	2,641	\$ 108,50
03-Jan-2020	2,539	\$ 108,75
02-Jan-2020	2,544	\$ 108,75
01-Jan-2020	2,508	\$ 108,87
31-Dec-2019	2,508	\$ 108,87
30-Dec-2019	2,508	\$ 108,88
27-Dec-2019	2,548	\$ 108,80
26-Dec-2019		
25-Dec-2019		
24-Dec-2019	2,569	\$ 108,75
23-Dec-2019	2,578	\$ 108,76
20-Dec-2019	2,543	\$ 108,87
19-Dec-2019	2,547	\$ 108,87
18-Dec-2019	2,560	\$ 108,87
17-Dec-2019	2,564	\$ 108,87
16-Dec-2019	2,568	\$ 108,88
13-Dec-2019	2,533	\$ 108,97
12-Dec-2019	2,545	\$ 108,95
11-Dec-2019	2,558	\$ 108,95
10-Dec-2019	2,593	\$ 108,88
09-Dec-2019	2,566	\$ 108,95
06-Dec-2019	2,601	\$ 108,88
05-Dec-2019	2,554	\$ 109,00
04-Dec-2019	2,567	\$ 109,00
03-Dec-2019	2,520	\$ 109,12
02-Dec-2019	2,575	\$ 109,00
29-Nov-2019	2,555	\$ 109,06
28-Nov-2019	2,634	\$ 108,88
27-Nov-2019	2,559	\$ 109,06
26-Nov-2019	2,595	\$ 109,00
25-Nov-2019	2,664	\$ 108,85
22-Nov-2019	2,709	\$ 108,75
21-Nov-2019	2,672	\$ 108,85
20-Nov-2019	2,674	\$ 108,88
19-Nov-2019	2,676	\$ 108,88
18-Nov-2019	2,676	\$ 108,89
15-Nov-2019	2,680	\$ 108,89
14-Nov-2019	2,676	\$ 108,91
13-Nov-2019	2,696	\$ 108,89
12-Nov-2019	2,706	\$ 108,87
11-Nov-2019	2,680	\$ 108,95
08-Nov-2019	2,684	\$ 108,94
07-Nov-2019	2,648	\$ 109,04
06-Nov-2019	2,656	\$ 109,06
05-Nov-2019	2,634	\$ 109,12
04-Nov-2019	2,638	\$ 109,12

01-Nov-2019	2,642	\$ 109,12
31-Oct-2019	2,646	\$ 109,12
30-Oct-2019	2,699	\$ 109,02
29-Oct-2019	2,710	\$ 109,00
28-Oct-2019	2,661	\$ 109,13
25-Oct-2019	2,616	\$ 109,25
24-Oct-2019	2,620	\$ 109,25
23-Oct-2019	2,608	\$ 109,31
22-Oct-2019	2,635	\$ 109,25
21-Oct-2019	2,639	\$ 109,25
18-Oct-2019	2,594	\$ 109,37
17-Oct-2019	2,619	\$ 109,32
16-Oct-2019	2,609	\$ 109,38
15-Oct-2019	2,710	\$ 109,12
14-Oct-2019	2,615	\$ 109,38
11-Oct-2019	2,638	\$ 109,32
10-Oct-2019	2,572	\$ 109,50
09-Oct-2019	2,634	\$ 109,38
08-Oct-2019	2,641	\$ 109,37
07-Oct-2019	2,634	\$ 109,40
04-Oct-2019	2,695	\$ 109,25
03-Oct-2019	2,698	\$ 109,25
02-Oct-2019	2,662	\$ 109,37
01-Oct-2019	2,610	\$ 109,52
30-Sep-2019	2,669	\$ 109,38
27-Sep-2019	2,673	\$ 109,37
26-Sep-2019	2,595	\$ 109,59
25-Sep-2019	2,593	\$ 109,62
24-Sep-2019	2,644	\$ 109,50
23-Sep-2019	2,606	\$ 109,61
20-Sep-2019	2,606	\$ 109,62
19-Sep-2019	2,613	\$ 109,61
18-Sep-2019	2,617	\$ 109,63
17-Sep-2019	2,651	\$ 109,55
16-Sep-2019	2,658	\$ 109,54
13-Sep-2019	2,536	\$ 109,88
12-Sep-2019	2,540	\$ 109,87
11-Sep-2019	2,546	\$ 109,89
10-Sep-2019	2,508	\$ 110,00
09-Sep-2019	2,466	\$ 110,12
06-Sep-2019	2,470	\$ 110,12
05-Sep-2019	2,449	\$ 110,19
04-Sep-2019	2,387	\$ 110,39
03-Sep-2019	2,395	\$ 110,38
02-Sep-2019	2,399	\$ 110,38
30-Aug-2019	2,399	\$ 110,38
29-Aug-2019	2,402	\$ 110,38
28-Aug-2019	2,418	\$ 110,37
27-Aug-2019	2,421	\$ 110,37

26-Aug-2019	2,515	\$ 110,12
23-Aug-2019	2,469	\$ 110,26
22-Aug-2019	2,433	\$ 110,37
21-Aug-2019	2,484	\$ 110,26
20-Aug-2019	2,499	\$ 110,23
19-Aug-2019	2,586	\$ 110,00
16-Aug-2019	2,524	\$ 110,18
15-Aug-2019	2,548	\$ 110,12
14-Aug-2019	2,604	\$ 110,00
13-Aug-2019	2,698	\$ 109,75
12-Aug-2019	2,705	\$ 109,74
09-Aug-2019	2,705	\$ 109,75
08-Aug-2019	2,766	\$ 109,59
07-Aug-2019	2,723	\$ 109,74
06-Aug-2019	2,769	\$ 109,62
05-Aug-2019	2,794	\$ 109,56
02-Aug-2019	2,776	\$ 109,62
01-Aug-2019	2,868	\$ 109,37
31-Jul-2019	2,788	\$ 109,62
30-Jul-2019	2,791	\$ 109,63
29-Jul-2019	2,814	\$ 109,57
26-Jul-2019	2,814	\$ 109,57
25-Jul-2019	2,753	\$ 109,75
24-Jul-2019	2,809	\$ 109,62
23-Jul-2019	2,820	\$ 109,60
22-Jul-2019	2,859	\$ 109,50
19-Jul-2019	2,862	\$ 109,50
18-Jul-2019	2,844	\$ 109,56
17-Jul-2019	2,854	\$ 109,56

**DIB SUKUK LTD**

**DUBAI ISLAMIC BANK PJSC**

DISB 3.6000 30-Mar-2021 MTN

2,88 100,45

<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	1,764	\$ 101,26
16-Jul-2020	1,775	\$ 101,25
15-Jul-2020	1,792	\$ 101,26
14-Jul-2020	1,822	\$ 101,24
13-Jul-2020	1,806	\$ 101,26
10-Jul-2020	1,838	\$ 101,24
09-Jul-2020	1,820	\$ 101,26
08-Jul-2020	1,845	\$ 101,25
07-Jul-2020	1,849	\$ 101,25
06-Jul-2020	1,875	\$ 101,24
03-Jul-2020	1,860	\$ 101,26
02-Jul-2020	1,869	\$ 101,25

01-Jul-2020	1,866	\$ 101,26
30-Jun-2020	1,906	\$ 101,24
29-Jun-2020	1,883	\$ 101,27
26-Jun-2020	1,895	\$ 101,26
25-Jun-2020	1,910	\$ 101,26
24-Jun-2020	1,927	\$ 101,26
23-Jun-2020	1,938	\$ 101,25
22-Jun-2020	1,957	\$ 101,24
19-Jun-2020	1,952	\$ 101,25
18-Jun-2020	1,835	\$ 101,35
17-Jun-2020	1,713	\$ 101,46
16-Jun-2020	1,814	\$ 101,38
15-Jun-2020	1,998	\$ 101,24
12-Jun-2020	1,826	\$ 101,38
11-Jun-2020	2,026	\$ 101,23
10-Jun-2020	2,002	\$ 101,26
09-Jun-2020	2,015	\$ 101,25
08-Jun-2020	2,052	\$ 101,23
05-Jun-2020	2,033	\$ 101,25
04-Jun-2020	2,024	\$ 101,26
03-Jun-2020	2,053	\$ 101,25
02-Jun-2020	2,072	\$ 101,24
01-Jun-2020	2,048	\$ 101,26
29-May-2020	2,070	\$ 101,25
28-May-2020	2,073	\$ 101,25
27-May-2020	2,107	\$ 101,23
26-May-2020	2,081	\$ 101,26
25-May-2020	2,096	\$ 101,25
22-May-2020	2,095	\$ 101,25
21-May-2020	2,212	\$ 101,15
20-May-2020	2,210	\$ 101,17
19-May-2020	2,206	\$ 101,18
18-May-2020	2,216	\$ 101,17
15-May-2020	2,422	\$ 101,00
14-May-2020	2,434	\$ 100,99
13-May-2020	2,441	\$ 101,00
12-May-2020	2,452	\$ 100,99
11-May-2020	2,450	\$ 100,99
08-May-2020	2,434	\$ 101,01
07-May-2020	2,427	\$ 101,02
06-May-2020	2,461	\$ 101,00
05-May-2020	2,747	\$ 100,75
04-May-2020	2,743	\$ 100,76
01-May-2020	2,762	\$ 100,74
30-Apr-2020	2,761	\$ 100,74
29-Apr-2020	2,758	\$ 100,75
28-Apr-2020	2,912	\$ 100,62
27-Apr-2020	2,877	\$ 100,65
24-Apr-2020	3,067	\$ 100,48



23-Apr-2020	3,237	\$ 100,33
22-Apr-2020	3,472	\$ 100,12
21-Apr-2020	3,459	\$ 100,13
20-Apr-2020	3,301	\$ 100,27
17-Apr-2020	3,481	\$ 100,11
16-Apr-2020	3,490	\$ 100,10
15-Apr-2020	3,478	\$ 100,11
14-Apr-2020	3,454	\$ 100,14
13-Apr-2020	3,748	\$ 99,86
10-Apr-2020	3,604	\$ 100,00
09-Apr-2020	3,602	\$ 100,00
08-Apr-2020	3,595	\$ 100,00
07-Apr-2020	3,589	\$ 100,01
06-Apr-2020	3,751	\$ 99,86
03-Apr-2020	3,984	\$ 99,63
02-Apr-2020	4,129	\$ 99,50
01-Apr-2020	4,523	\$ 99,11
31-Mar-2020	4,670	\$ 98,97
30-Mar-2020	4,368	\$ 99,26
27-Mar-2020	4,638	\$ 99,00
26-Mar-2020	4,901	\$ 98,75
25-Mar-2020	5,142	\$ 98,50
24-Mar-2020	5,564	\$ 98,09
23-Mar-2020	5,576	\$ 98,08
20-Mar-2020	4,835	\$ 98,79
19-Mar-2020	4,885	\$ 98,74
18-Mar-2020	4,429	\$ 99,18
17-Mar-2020	3,936	\$ 99,66
16-Mar-2020	3,467	\$ 100,13
13-Mar-2020	3,370	\$ 100,23
12-Mar-2020	3,287	\$ 100,32
11-Mar-2020	2,439	\$ 101,19
10-Mar-2020	2,513	\$ 101,12
09-Mar-2020	2,179	\$ 101,47
06-Mar-2020	2,058	\$ 101,60
05-Mar-2020	2,171	\$ 101,49
04-Mar-2020	2,232	\$ 101,43
03-Mar-2020	2,209	\$ 101,46
02-Mar-2020	2,501	\$ 101,15
28-Feb-2020	2,659	\$ 100,99
27-Feb-2020	2,544	\$ 101,11
26-Feb-2020	2,403	\$ 101,28
25-Feb-2020	2,326	\$ 101,36
24-Feb-2020	2,485	\$ 101,20
21-Feb-2020	2,458	\$ 101,23
20-Feb-2020	2,435	\$ 101,26
19-Feb-2020	2,455	\$ 101,24
18-Feb-2020	2,465	\$ 101,24
17-Feb-2020	2,455	\$ 101,25

14-Feb-2020	2,568	\$ 101,12
13-Feb-2020	2,478	\$ 101,23
12-Feb-2020	2,582	\$ 101,12
11-Feb-2020	2,479	\$ 101,24
10-Feb-2020	2,585	\$ 101,12
07-Feb-2020	2,458	\$ 101,27
06-Feb-2020	2,466	\$ 101,26
05-Feb-2020	2,483	\$ 101,25
04-Feb-2020	2,598	\$ 101,13
03-Feb-2020	2,713	\$ 101,00
31-Jan-2020	2,420	\$ 101,34
30-Jan-2020	2,536	\$ 101,21
29-Jan-2020	2,696	\$ 101,03
28-Jan-2020	2,628	\$ 101,11
27-Jan-2020	2,611	\$ 101,13
24-Jan-2020	2,607	\$ 101,14
23-Jan-2020	2,617	\$ 101,13
22-Jan-2020	2,628	\$ 101,12
21-Jan-2020	2,616	\$ 101,14
20-Jan-2020	2,628	\$ 101,13
17-Jan-2020	2,624	\$ 101,13
16-Jan-2020	2,634	\$ 101,12
15-Jan-2020	2,742	\$ 101,01
14-Jan-2020	2,740	\$ 101,01
13-Jan-2020	2,756	\$ 100,99
10-Jan-2020	2,751	\$ 101,00
09-Jan-2020	2,733	\$ 101,03
08-Jan-2020	2,801	\$ 100,95
07-Jan-2020	2,758	\$ 101,00
06-Jan-2020	2,775	\$ 100,99
03-Jan-2020	2,760	\$ 101,01
02-Jan-2020	2,785	\$ 100,98
01-Jan-2020	2,741	\$ 101,04
31-Dec-2019	2,751	\$ 101,03
30-Dec-2019	2,751	\$ 101,03
27-Dec-2019	2,763	\$ 101,02
26-Dec-2019	2,863	\$ 100,90
25-Dec-2019	2,872	\$ 100,89
24-Dec-2019	2,862	\$ 100,90
23-Dec-2019	2,799	\$ 100,98
20-Dec-2019	2,792	\$ 101,00
19-Dec-2019	2,802	\$ 100,99
18-Dec-2019	2,791	\$ 101,01
17-Dec-2019	2,782	\$ 101,02
16-Dec-2019	2,797	\$ 101,00
13-Dec-2019	2,895	\$ 100,88
12-Dec-2019	2,814	\$ 100,99
11-Dec-2019	2,771	\$ 101,05
10-Dec-2019	3,299	\$ 99,88

09-Dec-2019	3,302	\$ 99,87
06-Dec-2019	3,304	\$ 99,87
05-Dec-2019	3,296	\$ 99,87
04-Dec-2019	3,294	\$ 99,87
03-Dec-2019	3,257	\$ 99,88
02-Dec-2019	3,197	\$ 99,89
29-Nov-2019	3,232	\$ 99,88
28-Nov-2019	3,267	\$ 99,87
27-Nov-2019	3,267	\$ 99,87
26-Nov-2019	3,255	\$ 99,87
25-Nov-2019	3,248	\$ 99,87
22-Nov-2019	3,147	\$ 99,90
21-Nov-2019	3,254	\$ 99,87
20-Nov-2019	3,219	\$ 99,88
19-Nov-2019	3,234	\$ 99,87
18-Nov-2019	3,222	\$ 99,87
15-Nov-2019	3,216	\$ 99,87
14-Nov-2019	3,207	\$ 99,88
13-Nov-2019	3,207	\$ 99,87
12-Nov-2019	3,198	\$ 99,88
11-Nov-2019	3,196	\$ 99,88
08-Nov-2019	3,234	\$ 99,86
07-Nov-2019	3,211	\$ 99,87
06-Nov-2019	3,180	\$ 99,88
05-Nov-2019	3,292	\$ 99,84
04-Nov-2019	3,328	\$ 99,82
01-Nov-2019	3,192	\$ 99,87
31-Oct-2019	3,176	\$ 99,87
30-Oct-2019	3,135	\$ 99,89
29-Oct-2019	3,162	\$ 99,88
28-Oct-2019	3,154	\$ 99,88
25-Oct-2019	3,202	\$ 99,86
24-Oct-2019	3,153	\$ 99,88
23-Oct-2019	3,170	\$ 99,87
22-Oct-2019	3,152	\$ 99,88
21-Oct-2019	3,279	\$ 99,82
18-Oct-2019	3,460	\$ 99,75
17-Oct-2019	3,321	\$ 99,81
16-Oct-2019	3,425	\$ 99,76
15-Oct-2019	3,346	\$ 99,79
14-Oct-2019	3,111	\$ 99,89
11-Oct-2019	3,118	\$ 99,88
10-Oct-2019	3,146	\$ 99,87
09-Oct-2019	3,167	\$ 99,86
08-Oct-2019	3,137	\$ 99,87
07-Oct-2019	3,156	\$ 99,86
04-Oct-2019	2,932	\$ 99,96
03-Oct-2019	2,777	\$ 100,03
02-Oct-2019	2,817	\$ 100,01

01-Oct-2019	3,128	\$ 99,87
30-Sep-2019	3,311	\$ 99,79
27-Sep-2019	3,103	\$ 99,88
26-Sep-2019	3,131	\$ 99,87
25-Sep-2019	3,150	\$ 99,86
24-Sep-2019	3,067	\$ 99,89
23-Sep-2019	3,141	\$ 99,86
20-Sep-2019	3,076	\$ 99,89
19-Sep-2019	3,110	\$ 99,87
18-Sep-2019	3,158	\$ 99,85
17-Sep-2019	3,089	\$ 99,88
16-Sep-2019	2,984	\$ 99,93
13-Sep-2019	2,892	\$ 99,98
12-Sep-2019	2,881	\$ 99,98
11-Sep-2019	2,952	\$ 99,95
10-Sep-2019	3,165	\$ 99,84
09-Sep-2019	2,996	\$ 99,92
06-Sep-2019	2,844	\$ 100,00
05-Sep-2019	2,823	\$ 100,01
04-Sep-2019	2,836	\$ 100,00
03-Sep-2019	2,870	\$ 99,99
02-Sep-2019	3,061	\$ 99,88
30-Aug-2019	3,061	\$ 99,88
29-Aug-2019	3,079	\$ 99,87
28-Aug-2019	3,083	\$ 99,87
27-Aug-2019	3,052	\$ 99,89
26-Aug-2019	3,089	\$ 99,87
23-Aug-2019	3,022	\$ 99,90
22-Aug-2019	3,078	\$ 99,87
21-Aug-2019	3,115	\$ 99,85
20-Aug-2019	3,082	\$ 99,87
19-Aug-2019	3,072	\$ 99,87
16-Aug-2019	3,032	\$ 99,89
15-Aug-2019	2,878	\$ 99,98
14-Aug-2019	3,055	\$ 99,88
13-Aug-2019	3,267	\$ 99,75
12-Aug-2019	3,038	\$ 99,89
09-Aug-2019	3,182	\$ 99,80
08-Aug-2019	3,027	\$ 99,89
07-Aug-2019	3,161	\$ 99,81
06-Aug-2019	3,039	\$ 99,88
05-Aug-2019	3,151	\$ 99,81
02-Aug-2019	3,062	\$ 99,87
01-Aug-2019	2,978	\$ 99,92
31-Jul-2019	3,245	\$ 99,75
30-Jul-2019	3,240	\$ 99,75
29-Jul-2019	3,246	\$ 99,75
26-Jul-2019	3,242	\$ 99,75
25-Jul-2019	3,040	\$ 99,88

24-Jul-2019	3,243	\$ 99,75
23-Jul-2019	3,257	\$ 99,74
22-Jul-2019	3,247	\$ 99,74
19-Jul-2019	3,234	\$ 99,75
18-Jul-2019	3,176	\$ 99,78
17-Jul-2019	3,234	\$ 99,74

**PERUSAHAAN PENERBIT SURAT BERHARGA SYARIAH NEGARA INDONESIA  
III  
Republic of Indonesia**

PPSIB 3.3000 21-Nov-2022 MTN

	2,62	101,84
<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	1,865	\$ 103,26
16-Jul-2020	1,884	\$ 103,22
15-Jul-2020	1,932	\$ 103,12
14-Jul-2020	1,946	\$ 103,09
13-Jul-2020	1,965	\$ 103,05
10-Jul-2020	1,975	\$ 103,03
09-Jul-2020	1,882	\$ 103,25
08-Jul-2020	2,007	\$ 102,97
07-Jul-2020	2,008	\$ 102,97
06-Jul-2020	2,022	\$ 102,94
03-Jul-2020	1,945	\$ 103,13
02-Jul-2020	1,839	\$ 103,38
01-Jul-2020	2,012	\$ 102,97
30-Jun-2020	2,035	\$ 102,93
29-Jun-2020	2,032	\$ 102,94
26-Jun-2020	2,030	\$ 102,95
25-Jun-2020	2,039	\$ 102,93
24-Jun-2020	1,962	\$ 103,13
23-Jun-2020	2,095	\$ 102,81
22-Jun-2020	2,097	\$ 102,81
19-Jun-2020	2,094	\$ 102,82
18-Jun-2020	2,091	\$ 102,83
17-Jun-2020	2,129	\$ 102,75
16-Jun-2020	2,142	\$ 102,72
15-Jun-2020	2,165	\$ 102,67
12-Jun-2020	2,162	\$ 102,68
11-Jun-2020	2,155	\$ 102,70
10-Jun-2020	2,217	\$ 102,56
09-Jun-2020	2,226	\$ 102,54
08-Jun-2020	2,240	\$ 102,51
05-Jun-2020	2,249	\$ 102,49
04-Jun-2020	2,246	\$ 102,50
03-Jun-2020	2,312	\$ 102,35
02-Jun-2020	2,396	\$ 102,15

01-Jun-2020	2,201	\$ 102,63
29-May-2020	2,419	\$ 102,10
28-May-2020	2,306	\$ 102,38
27-May-2020	2,454	\$ 102,02
26-May-2020	2,464	\$ 102,00
25-May-2020	2,456	\$ 102,02
22-May-2020	2,362	\$ 102,25
21-May-2020	2,540	\$ 101,82
20-May-2020	2,679	\$ 101,49
19-May-2020	2,717	\$ 101,40
18-May-2020	2,788	\$ 101,23
15-May-2020	2,846	\$ 101,09
14-May-2020	2,917	\$ 100,92
13-May-2020	2,930	\$ 100,89
12-May-2020	2,951	\$ 100,84
11-May-2020	2,993	\$ 100,74
08-May-2020	3,014	\$ 100,69
07-May-2020	3,022	\$ 100,67
06-May-2020	2,837	\$ 101,13
05-May-2020	3,093	\$ 100,50
04-May-2020	3,135	\$ 100,40
01-May-2020	2,889	\$ 101,00
30-Apr-2020	3,176	\$ 100,30
29-Apr-2020	3,246	\$ 100,13
28-Apr-2020	3,291	\$ 100,02
27-Apr-2020	3,275	\$ 100,06
24-Apr-2020	3,275	\$ 100,06
23-Apr-2020	3,308	\$ 99,98
22-Apr-2020	3,356	\$ 99,86
21-Apr-2020	3,369	\$ 99,83
20-Apr-2020	3,356	\$ 99,86
17-Apr-2020	3,413	\$ 99,72
16-Apr-2020	3,434	\$ 99,67
15-Apr-2020	3,564	\$ 99,35
14-Apr-2020	3,350	\$ 99,88
13-Apr-2020	3,451	\$ 99,63
10-Apr-2020	3,604	\$ 99,25
09-Apr-2020	3,469	\$ 99,58
08-Apr-2020	3,603	\$ 99,25
07-Apr-2020	3,450	\$ 99,63
06-Apr-2020	3,602	\$ 99,25
03-Apr-2020	3,551	\$ 99,38
02-Apr-2020	3,550	\$ 99,38
01-Apr-2020	3,600	\$ 99,25
31-Mar-2020	3,700	\$ 99,00
30-Mar-2020	3,700	\$ 99,00
27-Mar-2020	3,800	\$ 98,75
26-Mar-2020	3,800	\$ 98,75
25-Mar-2020	3,799	\$ 98,75

24-Mar-2020	4,051	\$ 98,13
23-Mar-2020	3,949	\$ 98,38
20-Mar-2020	4,050	\$ 98,13
19-Mar-2020	3,647	\$ 99,13
18-Mar-2020	3,447	\$ 99,63
17-Mar-2020	3,151	\$ 100,38
16-Mar-2020	2,859	\$ 101,13
13-Mar-2020	2,618	\$ 101,75
12-Mar-2020	2,379	\$ 102,38
11-Mar-2020	2,098	\$ 103,13
10-Mar-2020	2,146	\$ 103,00
09-Mar-2020	2,147	\$ 103,00
06-Mar-2020	2,101	\$ 103,13
05-Mar-2020	2,103	\$ 103,13
04-Mar-2020	2,106	\$ 103,13
03-Mar-2020	2,201	\$ 102,88
02-Mar-2020	2,108	\$ 103,13
28-Feb-2020	2,203	\$ 102,88
27-Feb-2020	2,111	\$ 103,13
26-Feb-2020	2,115	\$ 103,13
25-Feb-2020	2,116	\$ 103,13
24-Feb-2020	2,118	\$ 103,13
21-Feb-2020	2,165	\$ 103,00
20-Feb-2020	2,213	\$ 102,88
19-Feb-2020	2,262	\$ 102,75
18-Feb-2020	2,217	\$ 102,88
17-Feb-2020	2,218	\$ 102,88
14-Feb-2020	2,218	\$ 102,88
13-Feb-2020	2,219	\$ 102,88
12-Feb-2020	2,269	\$ 102,75
11-Feb-2020	2,270	\$ 102,75
10-Feb-2020	2,271	\$ 102,75
07-Feb-2020	2,224	\$ 102,88
06-Feb-2020	2,273	\$ 102,75
05-Feb-2020	2,294	\$ 102,70
04-Feb-2020	2,277	\$ 102,75
03-Feb-2020	2,232	\$ 102,88
31-Jan-2020	2,279	\$ 102,75
30-Jan-2020	2,280	\$ 102,75
29-Jan-2020	2,283	\$ 102,75
28-Jan-2020	2,283	\$ 102,75
27-Jan-2020	2,284	\$ 102,75
24-Jan-2020	2,330	\$ 102,63
23-Jan-2020	2,286	\$ 102,75
22-Jan-2020	2,334	\$ 102,63
21-Jan-2020	2,289	\$ 102,75
20-Jan-2020	2,335	\$ 102,63
17-Jan-2020	2,335	\$ 102,63
16-Jan-2020	2,336	\$ 102,63

15-Jan-2020	2,340	\$ 102,63
14-Jan-2020	2,341	\$ 102,63
13-Jan-2020	2,297	\$ 102,75
10-Jan-2020	2,388	\$ 102,50
09-Jan-2020	2,388	\$ 102,50
08-Jan-2020	2,391	\$ 102,50
07-Jan-2020	2,392	\$ 102,50
06-Jan-2020	2,393	\$ 102,50
03-Jan-2020	2,394	\$ 102,50
02-Jan-2020	2,394	\$ 102,50
01-Jan-2020	2,620	\$ 101,88
31-Dec-2019	2,620	\$ 101,88
30-Dec-2019	2,621	\$ 101,88
27-Dec-2019	2,399	\$ 102,50
26-Dec-2019	2,355	\$ 102,63
25-Dec-2019	2,355	\$ 102,63
24-Dec-2019	2,355	\$ 102,63
23-Dec-2019	2,446	\$ 102,38
20-Dec-2019	2,404	\$ 102,50
19-Dec-2019	2,405	\$ 102,50
18-Dec-2019	2,408	\$ 102,50
17-Dec-2019	2,452	\$ 102,38
16-Dec-2019	2,453	\$ 102,38
13-Dec-2019	2,454	\$ 102,38
12-Dec-2019	2,411	\$ 102,50
11-Dec-2019	2,457	\$ 102,38
10-Dec-2019	2,458	\$ 102,38
09-Dec-2019	2,459	\$ 102,38
06-Dec-2019	2,459	\$ 102,38
05-Dec-2019	2,460	\$ 102,38
04-Dec-2019	2,462	\$ 102,38
03-Dec-2019	2,507	\$ 102,25
02-Dec-2019	2,507	\$ 102,25
29-Nov-2019	2,465	\$ 102,38
28-Nov-2019	2,651	\$ 101,84
27-Nov-2019	2,552	\$ 102,13
26-Nov-2019	2,511	\$ 102,25
25-Nov-2019	2,654	\$ 101,84
22-Nov-2019	2,655	\$ 101,84
21-Nov-2019	2,514	\$ 102,25
20-Nov-2019	2,516	\$ 102,25
19-Nov-2019	2,517	\$ 102,25
18-Nov-2019	2,658	\$ 101,84
15-Nov-2019	2,659	\$ 101,84
14-Nov-2019	2,701	\$ 101,72
13-Nov-2019	2,563	\$ 102,13
12-Nov-2019	2,703	\$ 101,72
11-Nov-2019	2,703	\$ 101,72
08-Nov-2019	2,565	\$ 102,13



07-Nov-2019	2,523	\$ 102,25
06-Nov-2019	2,706	\$ 101,72
05-Nov-2019	2,568	\$ 102,13
04-Nov-2019	2,527	\$ 102,25
01-Nov-2019	2,707	\$ 101,72
31-Oct-2019	2,708	\$ 101,72
30-Oct-2019	2,709	\$ 101,72
29-Oct-2019	2,573	\$ 102,13
28-Oct-2019	2,710	\$ 101,72
25-Oct-2019	2,573	\$ 102,13
24-Oct-2019	2,670	\$ 101,84
23-Oct-2019	2,712	\$ 101,72
22-Oct-2019	2,713	\$ 101,72
21-Oct-2019	2,713	\$ 101,72
18-Oct-2019	2,714	\$ 101,72
17-Oct-2019	2,578	\$ 102,13
16-Oct-2019	2,675	\$ 101,84
15-Oct-2019	2,539	\$ 102,25
14-Oct-2019	2,581	\$ 102,13
11-Oct-2019	2,676	\$ 101,84
10-Oct-2019	2,677	\$ 101,84
09-Oct-2019	2,543	\$ 102,25
08-Oct-2019	2,680	\$ 101,84
07-Oct-2019	2,544	\$ 102,25
04-Oct-2019	2,720	\$ 101,72
03-Oct-2019	2,586	\$ 102,13
02-Oct-2019	2,722	\$ 101,72
01-Oct-2019	2,630	\$ 102,00
30-Sep-2019	2,589	\$ 102,13
27-Sep-2019	2,590	\$ 102,13
26-Sep-2019	2,591	\$ 102,13
25-Sep-2019	2,634	\$ 102,00
24-Sep-2019	2,593	\$ 102,13
23-Sep-2019	2,727	\$ 101,72
20-Sep-2019	2,553	\$ 102,25
19-Sep-2019	2,728	\$ 101,72
18-Sep-2019	2,556	\$ 102,25
17-Sep-2019	2,730	\$ 101,72
16-Sep-2019	2,638	\$ 102,00
13-Sep-2019	2,557	\$ 102,25
12-Sep-2019	2,558	\$ 102,25
11-Sep-2019	2,519	\$ 102,38
10-Sep-2019	2,520	\$ 102,38
09-Sep-2019	2,561	\$ 102,25
06-Sep-2019	2,521	\$ 102,38
05-Sep-2019	2,643	\$ 102,00
04-Sep-2019	2,524	\$ 102,38
03-Sep-2019	2,565	\$ 102,25
02-Sep-2019	2,736	\$ 101,72

30-Aug-2019	2,606	\$ 102,13
29-Aug-2019	2,717	\$ 101,78
28-Aug-2019	2,608	\$ 102,13
27-Aug-2019	2,781	\$ 101,59
26-Aug-2019	2,649	\$ 102,00
23-Aug-2019	2,820	\$ 101,47
22-Aug-2019	2,690	\$ 101,88
21-Aug-2019	2,822	\$ 101,47
20-Aug-2019	2,845	\$ 101,40
19-Aug-2019	2,733	\$ 101,75
16-Aug-2019	2,903	\$ 101,22
15-Aug-2019	2,774	\$ 101,63
14-Aug-2019	2,946	\$ 101,09
13-Aug-2019	2,947	\$ 101,09
12-Aug-2019	2,947	\$ 101,09
09-Aug-2019	2,947	\$ 101,09
08-Aug-2019	2,947	\$ 101,09
07-Aug-2019	2,948	\$ 101,09
06-Aug-2019	2,858	\$ 101,38
05-Aug-2019	2,949	\$ 101,09
02-Aug-2019	2,949	\$ 101,09
01-Aug-2019	2,988	\$ 100,97
31-Jul-2019	2,909	\$ 101,22
30-Jul-2019	2,951	\$ 101,09
29-Jul-2019	2,910	\$ 101,22
26-Jul-2019	2,951	\$ 101,09
25-Jul-2019	2,821	\$ 101,50
24-Jul-2019	2,783	\$ 101,63
23-Jul-2019	2,952	\$ 101,09
22-Jul-2019	2,953	\$ 101,09
19-Jul-2019	2,953	\$ 101,09
18-Jul-2019	2,953	\$ 101,09
17-Jul-2019	2,825	\$ 101,50

<b>DP WORLD CRESCENT LTD</b>
<b>DP World PLC</b>

COROY 3.9080 31-May-2023 MTN

3,27      102,08

<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	2,555	\$ 103,70
16-Jul-2020	2,579	\$ 103,64
15-Jul-2020	2,590	\$ 103,62
14-Jul-2020	2,600	\$ 103,60
13-Jul-2020	2,476	\$ 103,95
10-Jul-2020	2,494	\$ 103,90
09-Jul-2020	2,546	\$ 103,76
08-Jul-2020	2,564	\$ 103,72

07-Jul-2020	2,496	\$ 103,91
06-Jul-2020	2,502	\$ 103,90
03-Jul-2020	2,458	\$ 104,03
02-Jul-2020	2,488	\$ 103,94
01-Jul-2020	2,613	\$ 103,59
30-Jun-2020	2,628	\$ 103,56
29-Jun-2020	2,627	\$ 103,57
26-Jun-2020	2,462	\$ 104,04
25-Jun-2020	2,530	\$ 103,85
24-Jun-2020	2,469	\$ 104,04
23-Jun-2020	2,430	\$ 104,16
22-Jun-2020	2,629	\$ 103,59
19-Jun-2020	2,605	\$ 103,66
18-Jun-2020	2,703	\$ 103,38
17-Jun-2020	2,764	\$ 103,22
16-Jun-2020	2,736	\$ 103,30
15-Jun-2020	2,872	\$ 102,91
12-Jun-2020	2,791	\$ 103,15
11-Jun-2020	2,860	\$ 102,95
10-Jun-2020	2,875	\$ 102,92
09-Jun-2020	2,891	\$ 102,87
08-Jun-2020	2,930	\$ 102,76
05-Jun-2020	2,973	\$ 102,64
04-Jun-2020	3,067	\$ 102,38
03-Jun-2020	3,107	\$ 102,27
02-Jun-2020	3,123	\$ 102,22
01-Jun-2020	3,200	\$ 102,00
29-May-2020	3,094	\$ 102,31
28-May-2020	3,161	\$ 102,12
27-May-2020	3,143	\$ 102,18
26-May-2020	3,148	\$ 102,16
25-May-2020	3,200	\$ 102,01
22-May-2020	3,203	\$ 102,01
21-May-2020	3,215	\$ 101,97
20-May-2020	3,253	\$ 101,87
19-May-2020	3,302	\$ 101,73
18-May-2020	3,372	\$ 101,53
15-May-2020	3,438	\$ 101,34
14-May-2020	3,460	\$ 101,28
13-May-2020	3,469	\$ 101,26
12-May-2020	3,484	\$ 101,21
11-May-2020	3,581	\$ 100,93
08-May-2020	3,535	\$ 101,07
07-May-2020	3,505	\$ 101,16
06-May-2020	3,570	\$ 100,97
05-May-2020	3,875	\$ 100,09
04-May-2020	4,124	\$ 99,38
01-May-2020	4,144	\$ 99,32
30-Apr-2020	4,597	\$ 98,05

29-Apr-2020	4,999	\$ 96,93
28-Apr-2020	5,135	\$ 96,54
27-Apr-2020	5,235	\$ 96,26
24-Apr-2020	5,692	\$ 95,01
23-Apr-2020	5,739	\$ 94,88
22-Apr-2020	5,834	\$ 94,61
21-Apr-2020	5,791	\$ 94,72
20-Apr-2020	5,830	\$ 94,61
17-Apr-2020	5,758	\$ 94,80
16-Apr-2020	5,862	\$ 94,51
15-Apr-2020	5,948	\$ 94,26
14-Apr-2020	5,872	\$ 94,47
13-Apr-2020	6,075	\$ 93,91
10-Apr-2020	5,961	\$ 94,22
09-Apr-2020	5,958	\$ 94,23
08-Apr-2020	5,903	\$ 94,37
07-Apr-2020	5,818	\$ 94,58
06-Apr-2020	5,828	\$ 94,55
03-Apr-2020	5,786	\$ 94,66
02-Apr-2020	5,785	\$ 94,66
01-Apr-2020	5,632	\$ 95,07
31-Mar-2020	5,514	\$ 95,39
30-Mar-2020	5,446	\$ 95,58
27-Mar-2020	5,350	\$ 95,84
26-Mar-2020	5,419	\$ 95,65
25-Mar-2020	5,122	\$ 96,48
24-Mar-2020	5,210	\$ 96,23
23-Mar-2020	4,906	\$ 97,09
20-Mar-2020	4,741	\$ 97,56
19-Mar-2020	4,480	\$ 98,31
18-Mar-2020	3,894	\$ 100,04
17-Mar-2020	3,877	\$ 100,09
16-Mar-2020	3,266	\$ 101,93
13-Mar-2020	3,671	\$ 100,71
12-Mar-2020	3,293	\$ 101,85
11-Mar-2020	3,202	\$ 102,14
10-Mar-2020	3,250	\$ 101,99
09-Mar-2020	2,931	\$ 102,98
06-Mar-2020	2,959	\$ 102,89
05-Mar-2020	2,773	\$ 103,48
04-Mar-2020	2,766	\$ 103,51
03-Mar-2020	2,723	\$ 103,64
02-Mar-2020	2,976	\$ 102,85
28-Feb-2020	2,462	\$ 104,48
27-Feb-2020	2,590	\$ 104,07
26-Feb-2020	2,672	\$ 103,83
25-Feb-2020	2,687	\$ 103,78
24-Feb-2020	2,686	\$ 103,79
21-Feb-2020	2,751	\$ 103,58

20-Feb-2020	2,735	\$ 103,64
19-Feb-2020	2,898	\$ 103,13
18-Feb-2020	2,988	\$ 102,85
17-Feb-2020	2,601	\$ 104,08
14-Feb-2020	2,599	\$ 104,09
13-Feb-2020	2,604	\$ 104,08
12-Feb-2020	2,614	\$ 104,06
11-Feb-2020	2,622	\$ 104,03
10-Feb-2020	2,621	\$ 104,04
07-Feb-2020	2,614	\$ 104,07
06-Feb-2020	2,623	\$ 104,04
05-Feb-2020	2,541	\$ 104,32
04-Feb-2020	2,692	\$ 103,83
03-Feb-2020	2,631	\$ 104,03
31-Jan-2020	2,628	\$ 104,04
30-Jan-2020	2,737	\$ 103,69
29-Jan-2020	2,726	\$ 103,74
28-Jan-2020	2,984	\$ 102,91
27-Jan-2020	2,966	\$ 102,97
24-Jan-2020	2,720	\$ 103,76
23-Jan-2020	2,735	\$ 103,72
22-Jan-2020	2,775	\$ 103,60
21-Jan-2020	2,797	\$ 103,53
20-Jan-2020	2,801	\$ 103,52
17-Jan-2020	2,814	\$ 103,48
16-Jan-2020	2,815	\$ 103,48
15-Jan-2020	3,002	\$ 102,88
14-Jan-2020	2,822	\$ 103,47
13-Jan-2020	2,851	\$ 103,38
10-Jan-2020	2,833	\$ 103,44
09-Jan-2020	2,721	\$ 103,81
08-Jan-2020	2,905	\$ 103,21
07-Jan-2020	2,856	\$ 103,38
06-Jan-2020	2,886	\$ 103,28
03-Jan-2020	2,831	\$ 103,46
02-Jan-2020	2,845	\$ 103,42
01-Jan-2020	2,985	\$ 102,97
31-Dec-2019	2,993	\$ 102,94
30-Dec-2019	2,978	\$ 102,99
27-Dec-2019	2,871	\$ 103,35
26-Dec-2019	2,789	\$ 103,62
25-Dec-2019	2,794	\$ 103,60
24-Dec-2019	2,782	\$ 103,64
23-Dec-2019	2,917	\$ 103,21
20-Dec-2019	2,862	\$ 103,40
19-Dec-2019	2,863	\$ 103,40
18-Dec-2019	2,878	\$ 103,35
17-Dec-2019	2,923	\$ 103,21
16-Dec-2019	2,885	\$ 103,34

13-Dec-2019	2,817	\$ 103,56
12-Dec-2019	2,972	\$ 103,05
11-Dec-2019	2,838	\$ 103,51
10-Dec-2019	2,906	\$ 103,28
09-Dec-2019	2,928	\$ 103,21
06-Dec-2019	2,868	\$ 103,41
05-Dec-2019	2,883	\$ 103,37
04-Dec-2019	2,903	\$ 103,31
03-Dec-2019	2,881	\$ 103,38
02-Dec-2019	2,856	\$ 103,47
29-Nov-2019	2,955	\$ 103,14
28-Nov-2019		
27-Nov-2019	2,956	\$ 103,14
26-Nov-2019		
25-Nov-2019	2,959	\$ 103,14
22-Nov-2019		
21-Nov-2019		
20-Nov-2019		
19-Nov-2019		
18-Nov-2019	2,911	\$ 103,32
15-Nov-2019	2,911	\$ 103,32
14-Nov-2019	2,950	\$ 103,19
13-Nov-2019	2,952	\$ 103,19
12-Nov-2019	2,880	\$ 103,44
11-Nov-2019	2,954	\$ 103,19
08-Nov-2019	2,848	\$ 103,55
07-Nov-2019	2,884	\$ 103,43
06-Nov-2019	2,928	\$ 103,29
05-Nov-2019	2,920	\$ 103,32
04-Nov-2019	2,854	\$ 103,55
01-Nov-2019	2,857	\$ 103,54
31-Oct-2019	2,887	\$ 103,44
30-Oct-2019	2,820	\$ 103,68
29-Oct-2019	2,890	\$ 103,44
28-Oct-2019	2,852	\$ 103,57
25-Oct-2019	2,998	\$ 103,07
24-Oct-2019	2,999	\$ 103,07
23-Oct-2019	2,995	\$ 103,09
22-Oct-2019	3,039	\$ 102,94
21-Oct-2019	3,040	\$ 102,94
18-Oct-2019	3,040	\$ 102,94
17-Oct-2019	3,041	\$ 102,94
16-Oct-2019	3,043	\$ 102,94
15-Oct-2019	3,043	\$ 102,94
14-Oct-2019	3,006	\$ 103,07
11-Oct-2019	3,006	\$ 103,07
10-Oct-2019	3,007	\$ 103,07
09-Oct-2019	3,010	\$ 103,07
08-Oct-2019	2,979	\$ 103,18

07-Oct-2019	2,945	\$ 103,30
04-Oct-2019	3,017	\$ 103,05
03-Oct-2019		
02-Oct-2019	3,020	\$ 103,05
01-Oct-2019	3,086	\$ 102,82
30-Sep-2019	3,086	\$ 102,82
27-Sep-2019	3,053	\$ 102,94
26-Sep-2019	3,125	\$ 102,69
25-Sep-2019	3,024	\$ 103,05
24-Sep-2019	3,019	\$ 103,07
23-Sep-2019	2,988	\$ 103,18
20-Sep-2019	3,020	\$ 103,07
19-Sep-2019	2,990	\$ 103,18
18-Sep-2019	3,023	\$ 103,07
17-Sep-2019	3,023	\$ 103,07
16-Sep-2019	3,024	\$ 103,07
13-Sep-2019	3,024	\$ 103,07
12-Sep-2019	3,025	\$ 103,07
11-Sep-2019	3,027	\$ 103,07
10-Sep-2019	3,027	\$ 103,07
09-Sep-2019	3,022	\$ 103,09
06-Sep-2019	3,029	\$ 103,07
05-Sep-2019	3,029	\$ 103,07
04-Sep-2019	3,031	\$ 103,07
03-Sep-2019	2,928	\$ 103,44
02-Sep-2019	3,069	\$ 102,94
30-Aug-2019	2,962	\$ 103,32
29-Aug-2019	2,971	\$ 103,29
28-Aug-2019	3,071	\$ 102,94
27-Aug-2019	2,971	\$ 103,30
26-Aug-2019	3,072	\$ 102,94
23-Aug-2019	2,973	\$ 103,30
22-Aug-2019	3,073	\$ 102,94
21-Aug-2019	3,008	\$ 103,18
20-Aug-2019	3,045	\$ 103,05
19-Aug-2019	3,046	\$ 103,05
16-Aug-2019	3,046	\$ 103,05
15-Aug-2019	3,147	\$ 102,69
14-Aug-2019	3,190	\$ 102,54
13-Aug-2019	3,190	\$ 102,54
12-Aug-2019	3,160	\$ 102,65
09-Aug-2019	3,219	\$ 102,44
08-Aug-2019	3,220	\$ 102,44
07-Aug-2019	3,149	\$ 102,70
06-Aug-2019	3,221	\$ 102,44
05-Aug-2019	3,191	\$ 102,55
02-Aug-2019	3,164	\$ 102,65
01-Aug-2019	3,223	\$ 102,44
31-Jul-2019	3,313	\$ 102,12

30-Jul-2019	3,313	\$ 102,12
29-Jul-2019	3,258	\$ 102,32
26-Jul-2019	3,294	\$ 102,19
25-Jul-2019	3,295	\$ 102,19
24-Jul-2019	3,329	\$ 102,07
23-Jul-2019	3,280	\$ 102,25
22-Jul-2019	3,231	\$ 102,43
19-Jul-2019	3,198	\$ 102,55
18-Jul-2019	3,232	\$ 102,43
17-Jul-2019	3,299	\$ 102,19

## Conventional Portfolio Construction

<b>ARAB PETROLEUM INVESTMENTS CORP</b>		
<b>Saudi Arabia</b>		
ARPEI 4.1250 18-Sep-2023 MTN		
<b>Avg Value</b>	2,43	105,87
<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	1,371	108,48 €
16-Jul-2020	1,361	108,52 €
15-Jul-2020	1,399	108,42 €
14-Jul-2020	1,387	108,47 €
13-Jul-2020	1,371	108,53 €
10-Jul-2020	1,410	108,41 €
09-Jul-2020	1,379	108,51 €
08-Jul-2020	1,388	108,51 €
07-Jul-2020	1,384	108,53 €
06-Jul-2020	1,380	108,55 €
03-Jul-2020	1,370	108,59 €
02-Jul-2020	1,370	108,59 €
01-Jul-2020	1,447	108,34 €
30-Jun-2020	1,488	108,24 €
29-Jun-2020	1,461	108,33 €
26-Jun-2020	1,480	108,28 €
25-Jun-2020	1,680	107,63 €
24-Jun-2020	1,674	107,67 €
23-Jun-2020	1,573	108,01 €
22-Jun-2020	1,751	107,43 €
19-Jun-2020	1,712	107,56 €
18-Jun-2020	1,738	107,49 €
17-Jun-2020	1,851	107,13 €
16-Jun-2020	1,843	107,16 €
15-Jun-2020	1,875	107,07 €
12-Jun-2020	1,863	107,11 €
11-Jun-2020	1,841	107,19 €



10-Jun-2020	1,792	107,37 €
09-Jun-2020	1,849	107,19 €
08-Jun-2020	1,865	107,14 €
05-Jun-2020	1,785	107,41 €
04-Jun-2020	1,873	107,13 €
03-Jun-2020	1,879	107,12 €
02-Jun-2020	1,926	106,97 €
01-Jun-2020	2,066	106,52 €
29-May-2020	2,063	106,53 €
28-May-2020	2,068	106,52 €
27-May-2020	2,080	106,49 €
26-May-2020	2,178	106,17 €
25-May-2020	2,126	106,35 €
22-May-2020	2,131	106,33 €
21-May-2020	2,127	106,35 €
20-May-2020	2,199	106,14 €
19-May-2020	2,193	106,16 €
18-May-2020	2,247	105,99 €
15-May-2020	2,369	105,59 €
14-May-2020	2,429	105,40 €
13-May-2020	2,446	105,35 €
12-May-2020	2,447	105,35 €
11-May-2020	2,512	105,15 €
08-May-2020	2,662	104,66 €
07-May-2020	2,477	105,27 €
06-May-2020	2,581	104,94 €
05-May-2020	2,608	104,85 €
04-May-2020	2,596	104,90 €
01-May-2020	2,619	104,83 €
30-Apr-2020	2,618	104,83 €
29-Apr-2020	2,728	104,47 €
28-Apr-2020	2,751	104,41 €
27-Apr-2020	2,854	104,07 €
24-Apr-2020	2,791	104,28 €
23-Apr-2020	2,832	104,15 €
22-Apr-2020	2,884	103,99 €
21-Apr-2020	2,969	103,71 €
20-Apr-2020	2,896	103,96 €
17-Apr-2020	3,013	103,57 €
16-Apr-2020	3,176	103,04 €
15-Apr-2020	3,133	103,19 €
14-Apr-2020	3,136	103,18 €
13-Apr-2020	3,504	101,99 €
10-Apr-2020	3,467	102,10 €
09-Apr-2020	3,476	102,08 €
08-Apr-2020	3,491	102,03 €
07-Apr-2020	3,540	101,88 €
06-Apr-2020	3,355	102,48 €
03-Apr-2020	3,519	101,95 €

02-Apr-2020	3,830	100,94 €
01-Apr-2020	4,130	99,98 €
31-Mar-2020	3,965	100,51 €
30-Mar-2020	3,345	102,53 €
27-Mar-2020	3,853	100,87 €
26-Mar-2020	3,401	102,35 €
25-Mar-2020	3,611	101,67 €
24-Mar-2020	2,343	105,92 €
23-Mar-2020	2,341	105,93 €
20-Mar-2020	4,071	100,17 €
19-Mar-2020		
18-Mar-2020	2,529	105,31 €
17-Mar-2020	2,536	105,29 €
16-Mar-2020	2,245	106,29 €
13-Mar-2020	2,282	106,17 €
12-Mar-2020	1,929	107,41 €
11-Mar-2020	2,074	106,92 €
10-Mar-2020	2,052	107,00 €
09-Mar-2020	2,024	107,10 €
06-Mar-2020	1,841	107,75 €
05-Mar-2020	1,794	107,93 €
04-Mar-2020	1,896	107,58 €
03-Mar-2020	2,010	107,19 €
02-Mar-2020	2,140	106,73 €
28-Feb-2020	2,177	106,61 €
27-Feb-2020	2,016	107,18 €
26-Feb-2020	2,067	107,02 €
25-Feb-2020	2,174	106,65 €
24-Feb-2020	2,021	107,19 €
21-Feb-2020	2,118	106,86 €
20-Feb-2020	2,131	106,81 €
19-Feb-2020	2,288	106,27 €
18-Feb-2020	2,206	106,57 €
17-Feb-2020	2,198	106,60 €
14-Feb-2020	2,195	106,61 €
13-Feb-2020	2,207	106,57 €
12-Feb-2020	2,093	107,00 €
11-Feb-2020	2,137	106,85 €
10-Feb-2020	2,233	106,51 €
07-Feb-2020	2,194	106,65 €
06-Feb-2020	2,197	106,65 €
05-Feb-2020	2,176	106,74 €
04-Feb-2020	2,189	106,70 €
03-Feb-2020	2,239	106,52 €
31-Jan-2020	2,114	106,98 €
30-Jan-2020	2,188	106,71 €
29-Jan-2020	2,218	106,62 €
28-Jan-2020	2,275	106,41 €
27-Jan-2020	2,248	106,52 €

24-Jan-2020	2,239	106,55 €
23-Jan-2020	2,281	106,41 €
22-Jan-2020	2,215	106,66 €
21-Jan-2020	2,217	106,66 €
20-Jan-2020	2,288	106,41 €
17-Jan-2020	2,292	106,39 €
16-Jan-2020	2,255	106,53 €
15-Jan-2020	2,329	106,28 €
14-Jan-2020	2,314	106,34 €
13-Jan-2020	2,379	106,11 €
10-Jan-2020	2,382	106,10 €
09-Jan-2020	2,315	106,35 €
08-Jan-2020	2,467	105,81 €
07-Jan-2020	2,413	106,01 €
06-Jan-2020	2,367	106,18 €
03-Jan-2020	2,353	106,24 €
02-Jan-2020	2,311	106,40 €
01-Jan-2020	2,336	106,32 €
31-Dec-2019	2,349	106,27 €
30-Dec-2019	2,336	106,32 €
27-Dec-2019	2,299	106,47 €
26-Dec-2019	2,312	106,42 €
25-Dec-2019	2,322	106,38 €
24-Dec-2019	2,308	106,43 €
23-Dec-2019	2,343	106,32 €
20-Dec-2019	2,330	106,38 €
19-Dec-2019	2,348	106,32 €
18-Dec-2019	2,327	106,41 €
17-Dec-2019	2,341	106,36 €
16-Dec-2019	2,294	106,54 €
13-Dec-2019	2,377	106,24 €
12-Dec-2019	2,438	106,02 €
11-Dec-2019	2,421	106,09 €
10-Dec-2019	2,482	105,87 €
09-Dec-2019	2,444	106,02 €
06-Dec-2019	2,424	106,09 €
05-Dec-2019	2,449	106,01 €
04-Dec-2019	2,454	106,00 €
03-Dec-2019	2,549	105,65 €
02-Dec-2019	2,448	106,03 €
29-Nov-2019	2,486	105,89 €
28-Nov-2019	2,489	105,89 €
27-Nov-2019	2,481	105,92 €
26-Nov-2019	2,506	105,84 €
25-Nov-2019	2,521	105,79 €
22-Nov-2019	2,557	105,66 €
21-Nov-2019	2,413	106,20 €
20-Nov-2019	2,570	105,63 €
19-Nov-2019	2,580	105,59 €

18-Nov-2019	2,586	105,57 €
15-Nov-2019	2,540	105,75 €
14-Nov-2019	2,545	105,73 €
13-Nov-2019	2,519	105,84 €
12-Nov-2019	2,538	105,77 €
11-Nov-2019	2,652	105,35 €
08-Nov-2019	2,617	105,48 €
07-Nov-2019	2,588	105,60 €
06-Nov-2019	2,539	105,79 €
05-Nov-2019	2,637	105,43 €
04-Nov-2019	2,523	105,87 €
01-Nov-2019	2,448	106,15 €
31-Oct-2019	2,420	106,26 €
30-Oct-2019	2,506	105,95 €
29-Oct-2019	2,556	105,76 €
28-Oct-2019	2,475	106,07 €
25-Oct-2019	2,494	106,00 €
24-Oct-2019	2,515	105,93 €
23-Oct-2019	2,511	105,96 €
22-Oct-2019	2,471	106,11 €
21-Oct-2019	2,504	105,99 €
18-Oct-2019	2,508	105,98 €
17-Oct-2019	2,514	105,96 €
16-Oct-2019	2,507	106,00 €
15-Oct-2019	2,489	106,07 €
14-Oct-2019	2,483	106,10 €
11-Oct-2019	2,546	105,86 €
10-Oct-2019	2,600	105,65 €
09-Oct-2019	2,579	105,75 €
08-Oct-2019	2,527	105,95 €
07-Oct-2019	2,507	106,04 €
04-Oct-2019	2,589	105,72 €
03-Oct-2019	2,631	105,57 €
02-Oct-2019	2,562	105,84 €
01-Oct-2019	2,629	105,59 €
30-Sep-2019	2,566	105,84 €
27-Sep-2019	2,635	105,57 €
26-Sep-2019	2,595	105,73 €
25-Sep-2019	2,619	105,65 €
24-Sep-2019	2,547	105,93 €
23-Sep-2019	2,579	105,81 €
20-Sep-2019	2,572	105,84 €
19-Sep-2019	2,643	105,57 €
18-Sep-2019	2,608	105,72 €
17-Sep-2019	2,623	105,66 €
16-Sep-2019	2,637	105,61 €
13-Sep-2019	2,647	105,58 €
12-Sep-2019	2,628	105,66 €
11-Sep-2019	2,588	105,82 €

10-Sep-2019	2,643	105,61 €
09-Sep-2019	2,530	106,06 €
06-Sep-2019	2,511	106,14 €
05-Sep-2019	2,593	105,82 €
04-Sep-2019	2,473	106,30 €
03-Sep-2019	2,563	105,95 €
02-Sep-2019	2,550	106,01 €
30-Aug-2019	2,533	106,07 €
29-Aug-2019	2,559	105,98 €
28-Aug-2019	2,644	105,65 €
27-Aug-2019	2,631	105,71 €
26-Aug-2019	2,589	105,88 €
23-Aug-2019	2,584	105,90 €
22-Aug-2019	2,688	105,49 €
21-Aug-2019	2,673	105,56 €
20-Aug-2019	2,660	105,62 €
19-Aug-2019	2,679	105,55 €
16-Aug-2019	2,633	105,73 €
15-Aug-2019	2,636	105,72 €
14-Aug-2019	2,732	105,35 €
13-Aug-2019	2,714	105,43 €
12-Aug-2019	2,736	105,34 €
09-Aug-2019	2,811	105,05 €
08-Aug-2019	2,865	104,84 €
07-Aug-2019	2,862	104,86 €
06-Aug-2019	2,786	105,16 €
05-Aug-2019	2,828	105,00 €
02-Aug-2019	2,870	104,84 €
01-Aug-2019	2,803	105,11 €
31-Jul-2019	2,892	104,76 €
30-Jul-2019	2,904	104,72 €
29-Jul-2019	2,904	104,72 €
26-Jul-2019	2,854	104,92 €
25-Jul-2019	2,870	104,86 €
24-Jul-2019	2,906	104,72 €
23-Jul-2019	2,918	104,68 €
22-Jul-2019	2,895	104,77 €
19-Jul-2019	2,916	104,69 €
18-Jul-2019	2,848	104,97 €
17-Jul-2019	2,871	104,89 €

<b>ABU DHABI NATIONAL ENERGY COMPANY PJSC</b>		
<b>UAE</b>		
TAQA 3.6250 12-Jan-2023		
	2,55	103,01
<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	1,258	\$ 105,75

16-Jul-2020	1,261	\$ 105,75
15-Jul-2020	1,318	\$ 105,62
14-Jul-2020	1,320	\$ 105,63
13-Jul-2020	1,273	\$ 105,75
10-Jul-2020	1,276	\$ 105,75
09-Jul-2020	1,278	\$ 105,75
08-Jul-2020	1,236	\$ 105,88
07-Jul-2020	1,337	\$ 105,63
06-Jul-2020	1,340	\$ 105,62
03-Jul-2020	1,293	\$ 105,75
02-Jul-2020	1,440	\$ 105,38
01-Jul-2020	1,541	\$ 105,13
30-Jun-2020	1,599	\$ 105,00
29-Jun-2020	1,552	\$ 105,12
26-Jun-2020	1,554	\$ 105,13
25-Jun-2020	1,605	\$ 105,00
24-Jun-2020	1,611	\$ 105,00
23-Jun-2020	1,613	\$ 105,00
22-Jun-2020	1,615	\$ 105,00
19-Jun-2020	1,666	\$ 104,88
18-Jun-2020	1,717	\$ 104,75
17-Jun-2020	1,674	\$ 104,88
16-Jun-2020	1,773	\$ 104,63
15-Jun-2020	1,678	\$ 104,88
12-Jun-2020	1,777	\$ 104,63
11-Jun-2020	1,876	\$ 104,38
10-Jun-2020	1,833	\$ 104,50
09-Jun-2020	1,932	\$ 104,25
08-Jun-2020	1,934	\$ 104,25
05-Jun-2020	1,935	\$ 104,25
04-Jun-2020	1,937	\$ 104,25
03-Jun-2020	1,990	\$ 104,13
02-Jun-2020	1,944	\$ 104,25
01-Jun-2020	2,042	\$ 104,00
29-May-2020	1,947	\$ 104,25
28-May-2020	1,853	\$ 104,50
27-May-2020	1,904	\$ 104,38
26-May-2020	1,906	\$ 104,38
25-May-2020	2,147	\$ 103,75
22-May-2020	2,051	\$ 104,00
21-May-2020	2,005	\$ 104,13
20-May-2020	2,059	\$ 104,00
19-May-2020	2,156	\$ 103,75
18-May-2020	2,205	\$ 103,63
15-May-2020	2,159	\$ 103,75
14-May-2020	2,256	\$ 103,50
13-May-2020	2,165	\$ 103,75
12-May-2020	2,166	\$ 103,75
11-May-2020	2,120	\$ 103,88

08-May-2020	2,264	\$ 103,50
07-May-2020	2,266	\$ 103,50
06-May-2020	2,270	\$ 103,50
05-May-2020	2,318	\$ 103,38
04-May-2020	2,367	\$ 103,25
01-May-2020	2,321	\$ 103,37
30-Apr-2020	2,368	\$ 103,25
29-Apr-2020	2,559	\$ 102,75
28-Apr-2020	2,516	\$ 102,88
27-Apr-2020	2,707	\$ 102,37
24-Apr-2020	2,613	\$ 102,62
23-Apr-2020	2,708	\$ 102,38
22-Apr-2020	2,711	\$ 102,38
21-Apr-2020	2,949	\$ 101,75
20-Apr-2020	2,950	\$ 101,75
17-Apr-2020	2,903	\$ 101,88
16-Apr-2020	2,999	\$ 101,63
15-Apr-2020	3,048	\$ 101,50
14-Apr-2020	3,049	\$ 101,50
13-Apr-2020	3,817	\$ 99,50
10-Apr-2020	3,575	\$ 100,13
09-Apr-2020	3,575	\$ 100,13
08-Apr-2020	3,768	\$ 99,63
07-Apr-2020	3,768	\$ 99,62
06-Apr-2020	3,768	\$ 99,62
03-Apr-2020	3,912	\$ 99,25
02-Apr-2020	3,816	\$ 99,50
01-Apr-2020	3,911	\$ 99,25
31-Mar-2020	3,911	\$ 99,25
30-Mar-2020	4,200	\$ 98,50
27-Mar-2020	3,767	\$ 99,62
26-Mar-2020	4,103	\$ 98,75
25-Mar-2020	3,862	\$ 99,37
24-Mar-2020	4,005	\$ 99,00
23-Mar-2020	4,732	\$ 97,13
20-Mar-2020	4,197	\$ 98,50
19-Mar-2020	4,584	\$ 97,50
18-Mar-2020	5,170	\$ 96,00
17-Mar-2020	2,807	\$ 102,20
16-Mar-2020	2,893	\$ 101,96
13-Mar-2020	2,241	\$ 103,76
12-Mar-2020	2,463	\$ 103,15
11-Mar-2020	2,232	\$ 103,80
10-Mar-2020	2,120	\$ 104,12
09-Mar-2020	1,971	\$ 104,54
06-Mar-2020	1,979	\$ 104,52
05-Mar-2020	1,913	\$ 104,71
04-Mar-2020	2,256	\$ 103,76
03-Mar-2020	2,133	\$ 104,11

02-Mar-2020	2,246	\$ 103,79
28-Feb-2020	2,142	\$ 104,09
27-Feb-2020	2,150	\$ 104,07
26-Feb-2020	2,072	\$ 104,31
25-Feb-2020	2,097	\$ 104,24
24-Feb-2020	2,076	\$ 104,30
21-Feb-2020	2,062	\$ 104,35
20-Feb-2020	2,075	\$ 104,32
19-Feb-2020	2,098	\$ 104,26
18-Feb-2020	2,108	\$ 104,24
17-Feb-2020	2,151	\$ 104,12
14-Feb-2020	2,161	\$ 104,09
13-Feb-2020	2,160	\$ 104,10
12-Feb-2020	2,394	\$ 103,44
11-Feb-2020	2,502	\$ 103,14
10-Feb-2020	2,461	\$ 103,26
07-Feb-2020	2,484	\$ 103,19
06-Feb-2020	2,541	\$ 103,03
05-Feb-2020	2,541	\$ 103,04
04-Feb-2020	2,502	\$ 103,16
03-Feb-2020	2,431	\$ 103,36
31-Jan-2020	2,498	\$ 103,17
30-Jan-2020	2,537	\$ 103,06
29-Jan-2020	2,534	\$ 103,08
28-Jan-2020	2,571	\$ 102,98
27-Jan-2020	2,576	\$ 102,96
24-Jan-2020	2,620	\$ 102,84
23-Jan-2020	2,435	\$ 103,38
22-Jan-2020	2,577	\$ 102,97
21-Jan-2020	2,617	\$ 102,86
20-Jan-2020	2,601	\$ 102,91
17-Jan-2020	2,564	\$ 103,02
16-Jan-2020	2,615	\$ 102,87
15-Jan-2020	2,609	\$ 102,90
14-Jan-2020	2,572	\$ 103,01
13-Jan-2020	2,621	\$ 102,87
10-Jan-2020	2,575	\$ 103,01
09-Jan-2020	2,591	\$ 102,96
08-Jan-2020	2,635	\$ 102,84
07-Jan-2020	2,656	\$ 102,78
06-Jan-2020	2,666	\$ 102,76
03-Jan-2020	2,671	\$ 102,75
02-Jan-2020	2,666	\$ 102,76
01-Jan-2020	2,714	\$ 102,63
31-Dec-2019	2,723	\$ 102,60
30-Dec-2019	2,708	\$ 102,65
27-Dec-2019	2,751	\$ 102,53
26-Dec-2019	2,659	\$ 102,80
25-Dec-2019	2,664	\$ 102,78



24-Dec-2019	2,652	\$ 102,82
23-Dec-2019	2,737	\$ 102,57
20-Dec-2019	2,675	\$ 102,76
19-Dec-2019	2,823	\$ 102,33
18-Dec-2019	2,808	\$ 102,38
17-Dec-2019	2,711	\$ 102,67
16-Dec-2019	2,733	\$ 102,61
13-Dec-2019	2,725	\$ 102,63
12-Dec-2019	2,699	\$ 102,71
11-Dec-2019	2,780	\$ 102,48
10-Dec-2019	2,733	\$ 102,62
09-Dec-2019	2,771	\$ 102,51
06-Dec-2019	2,736	\$ 102,61
05-Dec-2019	2,743	\$ 102,60
04-Dec-2019	2,731	\$ 102,64
03-Dec-2019	2,781	\$ 102,49
02-Dec-2019	2,776	\$ 102,51
29-Nov-2019	2,724	\$ 102,67
28-Nov-2019	2,744	\$ 102,61
27-Nov-2019	2,744	\$ 102,61
26-Nov-2019	2,774	\$ 102,52
25-Nov-2019	2,768	\$ 102,55
22-Nov-2019	2,902	\$ 102,15
21-Nov-2019	2,801	\$ 102,45
20-Nov-2019	2,784	\$ 102,51
19-Nov-2019	2,744	\$ 102,63
18-Nov-2019	2,764	\$ 102,57
15-Nov-2019	2,762	\$ 102,58
14-Nov-2019	2,777	\$ 102,54
13-Nov-2019	2,771	\$ 102,56
12-Nov-2019	2,754	\$ 102,62
11-Nov-2019	2,764	\$ 102,59
08-Nov-2019	2,802	\$ 102,47
07-Nov-2019	2,699	\$ 102,79
06-Nov-2019	2,729	\$ 102,71
05-Nov-2019	2,802	\$ 102,49
04-Nov-2019	2,665	\$ 102,91
01-Nov-2019	2,664	\$ 102,91
31-Oct-2019	2,718	\$ 102,75
30-Oct-2019	2,659	\$ 102,94
29-Oct-2019	2,759	\$ 102,63
28-Oct-2019	2,757	\$ 102,64
25-Oct-2019	2,686	\$ 102,86
24-Oct-2019	2,695	\$ 102,84
23-Oct-2019	2,732	\$ 102,73
22-Oct-2019	2,671	\$ 102,92
21-Oct-2019	2,772	\$ 102,61
18-Oct-2019	2,688	\$ 102,87
17-Oct-2019	2,734	\$ 102,73

16-Oct-2019	2,807	\$ 102,51
15-Oct-2019	2,690	\$ 102,88
14-Oct-2019	2,713	\$ 102,81
11-Oct-2019	2,737	\$ 102,73
10-Oct-2019	2,669	\$ 102,95
09-Oct-2019	2,659	\$ 102,99
08-Oct-2019	2,637	\$ 103,06
07-Oct-2019	2,637	\$ 103,06
04-Oct-2019	2,619	\$ 103,12
03-Oct-2019	2,591	\$ 103,21
02-Oct-2019	2,710	\$ 102,84
01-Oct-2019	2,692	\$ 102,90
30-Sep-2019	2,702	\$ 102,88
27-Sep-2019	2,587	\$ 103,24
26-Sep-2019	2,785	\$ 102,62
25-Sep-2019	2,762	\$ 102,70
24-Sep-2019	2,707	\$ 102,87
23-Sep-2019	2,732	\$ 102,80
20-Sep-2019	2,630	\$ 103,12
19-Sep-2019	2,670	\$ 103,00
18-Sep-2019	2,728	\$ 102,82
17-Sep-2019	2,701	\$ 102,91
16-Sep-2019	2,597	\$ 103,24
13-Sep-2019	2,707	\$ 102,89
12-Sep-2019	2,598	\$ 103,25
11-Sep-2019	2,608	\$ 103,22
10-Sep-2019	2,693	\$ 102,95
09-Sep-2019	2,630	\$ 103,16
06-Sep-2019	2,613	\$ 103,21
05-Sep-2019	2,493	\$ 103,61
04-Sep-2019	2,571	\$ 103,36
03-Sep-2019	2,603	\$ 103,26
02-Sep-2019	2,610	\$ 103,24
30-Aug-2019	2,573	\$ 103,36
29-Aug-2019	2,549	\$ 103,44
28-Aug-2019	2,574	\$ 103,37
27-Aug-2019	2,561	\$ 103,41
26-Aug-2019	2,609	\$ 103,26
23-Aug-2019	2,604	\$ 103,28
22-Aug-2019	2,651	\$ 103,13
21-Aug-2019	2,623	\$ 103,22
20-Aug-2019	2,620	\$ 103,24
19-Aug-2019	2,669	\$ 103,08
16-Aug-2019	2,613	\$ 103,27
15-Aug-2019	2,586	\$ 103,36
14-Aug-2019	2,692	\$ 103,02
13-Aug-2019	2,754	\$ 102,81
12-Aug-2019	2,706	\$ 102,97
09-Aug-2019	2,721	\$ 102,93

08-Aug-2019	2,825	\$ 102,59
07-Aug-2019	2,802	\$ 102,67
06-Aug-2019	2,756	\$ 102,82
05-Aug-2019	2,768	\$ 102,79
02-Aug-2019	2,790	\$ 102,71
01-Aug-2019	2,863	\$ 102,48
31-Jul-2019	2,742	\$ 102,88
30-Jul-2019	2,772	\$ 102,79
29-Jul-2019	2,794	\$ 102,71
26-Jul-2019	2,734	\$ 102,91
25-Jul-2019	2,760	\$ 102,83
24-Jul-2019	2,796	\$ 102,72
23-Jul-2019	2,798	\$ 102,71
22-Jul-2019	2,805	\$ 102,69
19-Jul-2019	2,796	\$ 102,72
18-Jul-2019	2,778	\$ 102,79
17-Jul-2019	2,771	\$ 102,82

<b>AXIS BANK LTD (DUBAI BRANCH)</b>
<b>UAE</b>

AXBK 3.0000 08-Aug-2022 MTN
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3,23	99,51
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<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	3,318	\$ 99,38
16-Jul-2020	3,317	\$ 99,38
15-Jul-2020	3,304	\$ 99,40
14-Jul-2020	3,314	\$ 99,38
13-Jul-2020	3,307	\$ 99,39
10-Jul-2020	3,330	\$ 99,34
09-Jul-2020	3,307	\$ 99,39
08-Jul-2020	3,314	\$ 99,37
07-Jul-2020	3,318	\$ 99,36
06-Jul-2020	3,182	\$ 99,63
03-Jul-2020	3,232	\$ 99,53
02-Jul-2020	3,236	\$ 99,53
01-Jul-2020	3,199	\$ 99,60
30-Jun-2020	3,249	\$ 99,50
29-Jun-2020	3,238	\$ 99,52
26-Jun-2020	3,166	\$ 99,66
25-Jun-2020	3,190	\$ 99,61
24-Jun-2020	3,181	\$ 99,63
23-Jun-2020	3,178	\$ 99,64
22-Jun-2020	3,191	\$ 99,61
19-Jun-2020	3,175	\$ 99,64
18-Jun-2020	3,184	\$ 99,62
17-Jun-2020	3,169	\$ 99,65
16-Jun-2020	3,173	\$ 99,64

15-Jun-2020	3,189	\$	99,61
12-Jun-2020	3,241	\$	99,50
11-Jun-2020	3,210	\$	99,57
10-Jun-2020	3,336	\$	99,30
09-Jun-2020	3,344	\$	99,29
08-Jun-2020	3,491	\$	98,98
05-Jun-2020	3,595	\$	98,77
04-Jun-2020	3,619	\$	98,72
03-Jun-2020	3,615	\$	98,72
02-Jun-2020	3,546	\$	98,86
01-Jun-2020	3,585	\$	98,78
29-May-2020	3,600	\$	98,75
28-May-2020	3,593	\$	98,76
27-May-2020	3,592	\$	98,76
26-May-2020	3,646	\$	98,65
25-May-2020	3,716	\$	98,50
22-May-2020	3,721	\$	98,49
21-May-2020	3,712	\$	98,51
20-May-2020	4,309	\$	97,26
19-May-2020	4,056	\$	97,78
18-May-2020	4,151	\$	97,58
15-May-2020	4,307	\$	97,26
14-May-2020	4,351	\$	97,16
13-May-2020	4,364	\$	97,13
12-May-2020	4,347	\$	97,16
11-May-2020	4,262	\$	97,33
08-May-2020	4,469	\$	96,90
07-May-2020	4,080	\$	97,71
06-May-2020	4,457	\$	96,91
05-May-2020	4,477	\$	96,86
04-May-2020	4,472	\$	96,87
01-May-2020	4,289	\$	97,25
30-Apr-2020	4,366	\$	97,09
29-Apr-2020	4,349	\$	97,12
28-Apr-2020	4,456	\$	96,88
27-Apr-2020	4,457	\$	96,88
24-Apr-2020	4,398	\$	97,00
23-Apr-2020	4,394	\$	97,00
22-Apr-2020	4,392	\$	97,00
21-Apr-2020	4,288	\$	97,21
20-Apr-2020	4,274	\$	97,24
17-Apr-2020	4,268	\$	97,25
16-Apr-2020	4,277	\$	97,23
15-Apr-2020	4,844	\$	96,01
14-Apr-2020	4,377	\$	97,00
13-Apr-2020	4,622	\$	96,47
10-Apr-2020	4,967	\$	95,75
09-Apr-2020	4,973	\$	95,73
08-Apr-2020	5,003	\$	95,67

07-Apr-2020	5,109	\$ 95,42
06-Apr-2020	4,607	\$ 96,48
03-Apr-2020	4,593	\$ 96,51
02-Apr-2020	4,597	\$ 96,49
01-Apr-2020	4,650	\$ 96,37
31-Mar-2020	4,601	\$ 96,47
30-Mar-2020	4,095	\$ 97,56
27-Mar-2020	4,708	\$ 96,23
26-Mar-2020	4,766	\$ 96,10
25-Mar-2020	4,798	\$ 96,02
24-Mar-2020	2,581	\$ 100,96
23-Mar-2020	3,003	\$ 99,99
20-Mar-2020	3,021	\$ 99,95
19-Mar-2020	3,177	\$ 99,60
18-Mar-2020	3,264	\$ 99,40
17-Mar-2020	2,819	\$ 100,41
16-Mar-2020		
13-Mar-2020		
12-Mar-2020		
11-Mar-2020		
10-Mar-2020		
09-Mar-2020		
06-Mar-2020	2,037	\$ 102,25
05-Mar-2020	1,981	\$ 102,39
04-Mar-2020	2,026	\$ 102,29
03-Mar-2020	2,264	\$ 101,73
02-Mar-2020		
28-Feb-2020	2,430	\$ 101,34
27-Feb-2020	2,412	\$ 101,38
26-Feb-2020	2,372	\$ 101,48
25-Feb-2020	2,495	\$ 101,19
24-Feb-2020	2,516	\$ 101,14
21-Feb-2020	2,606	\$ 100,93
20-Feb-2020	2,560	\$ 101,04
19-Feb-2020	2,700	\$ 100,71
18-Feb-2020	2,646	\$ 100,84
17-Feb-2020	2,677	\$ 100,77
14-Feb-2020	2,674	\$ 100,77
13-Feb-2020	2,690	\$ 100,74
12-Feb-2020	2,711	\$ 100,69
11-Feb-2020	2,689	\$ 100,74
10-Feb-2020	2,592	\$ 100,98
07-Feb-2020	2,616	\$ 100,92
06-Feb-2020	2,706	\$ 100,70
05-Feb-2020	2,701	\$ 100,72
04-Feb-2020	2,636	\$ 100,88
03-Feb-2020	2,578	\$ 101,02
31-Jan-2020	2,619	\$ 100,92
30-Jan-2020	2,624	\$ 100,91

29-Jan-2020	2,654	\$ 100,84
28-Jan-2020	2,713	\$ 100,70
27-Jan-2020	2,691	\$ 100,75
24-Jan-2020	2,685	\$ 100,77
23-Jan-2020	2,719	\$ 100,68
22-Jan-2020	2,737	\$ 100,64
21-Jan-2020	2,742	\$ 100,63
20-Jan-2020	2,779	\$ 100,54
17-Jan-2020	2,781	\$ 100,53
16-Jan-2020	2,819	\$ 100,44
15-Jan-2020	2,792	\$ 100,51
14-Jan-2020	2,786	\$ 100,52
13-Jan-2020	2,806	\$ 100,48
10-Jan-2020	2,786	\$ 100,53
09-Jan-2020	2,791	\$ 100,51
08-Jan-2020	2,788	\$ 100,52
07-Jan-2020	2,789	\$ 100,52
06-Jan-2020	2,816	\$ 100,46
03-Jan-2020	2,769	\$ 100,57
02-Jan-2020	2,813	\$ 100,46
01-Jan-2020	2,811	\$ 100,47
31-Dec-2019	2,823	\$ 100,44
30-Dec-2019	2,817	\$ 100,45
27-Dec-2019	2,880	\$ 100,30
26-Dec-2019	2,909	\$ 100,22
25-Dec-2019	2,921	\$ 100,19
24-Dec-2019	2,906	\$ 100,23
23-Dec-2019	2,908	\$ 100,23
20-Dec-2019	2,882	\$ 100,29
19-Dec-2019	2,886	\$ 100,28
18-Dec-2019	2,941	\$ 100,15
17-Dec-2019	2,952	\$ 100,12
16-Dec-2019	2,944	\$ 100,14
13-Dec-2019	2,912	\$ 100,22
12-Dec-2019	3,012	\$ 99,97
11-Dec-2019	2,968	\$ 100,08
10-Dec-2019	3,035	\$ 99,91
09-Dec-2019	2,990	\$ 100,02
06-Dec-2019	2,991	\$ 100,02
05-Dec-2019	2,946	\$ 100,13
04-Dec-2019	2,924	\$ 100,19
03-Dec-2019	2,928	\$ 100,18
02-Dec-2019	2,927	\$ 100,18
29-Nov-2019	2,981	\$ 100,05
28-Nov-2019	3,055	\$ 99,86
27-Nov-2019	3,014	\$ 99,96
26-Nov-2019	2,962	\$ 100,10
25-Nov-2019	2,998	\$ 100,00
22-Nov-2019	2,959	\$ 100,10

21-Nov-2019	2,963	\$ 100,09
20-Nov-2019	2,901	\$ 100,25
19-Nov-2019	2,938	\$ 100,16
18-Nov-2019	2,972	\$ 100,07
15-Nov-2019	2,957	\$ 100,11
14-Nov-2019	2,920	\$ 100,21
13-Nov-2019	3,002	\$ 99,99
12-Nov-2019	3,039	\$ 99,90
11-Nov-2019	3,055	\$ 99,85
08-Nov-2019	3,035	\$ 99,91
07-Nov-2019	3,060	\$ 99,84
06-Nov-2019	2,954	\$ 100,12
05-Nov-2019	2,972	\$ 100,07
04-Nov-2019	3,013	\$ 99,96
01-Nov-2019	2,956	\$ 100,11
31-Oct-2019	2,903	\$ 100,25
30-Oct-2019	3,018	\$ 99,95
29-Oct-2019	3,049	\$ 99,87
28-Oct-2019	3,084	\$ 99,78
25-Oct-2019	3,022	\$ 99,94
24-Oct-2019	3,020	\$ 99,94
23-Oct-2019	3,021	\$ 99,94
22-Oct-2019	3,005	\$ 99,98
21-Oct-2019	3,034	\$ 99,91
18-Oct-2019	2,948	\$ 100,14
17-Oct-2019	2,982	\$ 100,05
16-Oct-2019	3,005	\$ 99,98
15-Oct-2019	3,010	\$ 99,97
14-Oct-2019	2,988	\$ 100,03
11-Oct-2019	3,007	\$ 99,98
10-Oct-2019	2,856	\$ 100,38
09-Oct-2019	2,848	\$ 100,41
08-Oct-2019	2,855	\$ 100,39
07-Oct-2019	2,841	\$ 100,43
04-Oct-2019	2,828	\$ 100,46
03-Oct-2019	2,898	\$ 100,27
02-Oct-2019	2,907	\$ 100,25
01-Oct-2019	2,914	\$ 100,23
30-Sep-2019	2,983	\$ 100,04
27-Sep-2019	2,999	\$ 100,00
26-Sep-2019	3,040	\$ 99,89
25-Sep-2019	3,124	\$ 99,66
24-Sep-2019	3,047	\$ 99,87
23-Sep-2019	3,029	\$ 99,92
20-Sep-2019	3,059	\$ 99,84
19-Sep-2019	3,169	\$ 99,54
18-Sep-2019	3,185	\$ 99,49
17-Sep-2019	3,153	\$ 99,58
16-Sep-2019	3,211	\$ 99,42

13-Sep-2019	3,236	\$ 99,35
12-Sep-2019	3,156	\$ 99,57
11-Sep-2019	3,095	\$ 99,74
10-Sep-2019	3,137	\$ 99,62
09-Sep-2019	3,053	\$ 99,85
06-Sep-2019	2,974	\$ 100,07
05-Sep-2019	3,017	\$ 99,95
04-Sep-2019	2,884	\$ 100,32
03-Sep-2019	2,862	\$ 100,38
02-Sep-2019	2,974	\$ 100,07
30-Aug-2019	2,985	\$ 100,04
29-Aug-2019	2,949	\$ 100,14
28-Aug-2019	2,956	\$ 100,12
27-Aug-2019	2,945	\$ 100,15
26-Aug-2019	2,959	\$ 100,11
23-Aug-2019	2,993	\$ 100,02
22-Aug-2019	3,035	\$ 99,90
21-Aug-2019	3,020	\$ 99,94
20-Aug-2019	2,954	\$ 100,13
19-Aug-2019	2,971	\$ 100,08
16-Aug-2019	2,928	\$ 100,20
15-Aug-2019	2,923	\$ 100,22
14-Aug-2019	3,033	\$ 99,91
13-Aug-2019	3,126	\$ 99,64
12-Aug-2019	3,018	\$ 99,95
09-Aug-2019	3,096	\$ 99,73
08-Aug-2019	3,068	\$ 99,81
07-Aug-2019	3,040	\$ 99,89
06-Aug-2019	3,061	\$ 99,83
05-Aug-2019	3,017	\$ 99,95
02-Aug-2019	3,101	\$ 99,71
01-Aug-2019	3,194	\$ 99,45
31-Jul-2019	3,294	\$ 99,16
30-Jul-2019	3,273	\$ 99,22
29-Jul-2019	3,278	\$ 99,21
26-Jul-2019	3,302	\$ 99,14
25-Jul-2019	3,277	\$ 99,21
24-Jul-2019	3,228	\$ 99,35
23-Jul-2019	3,234	\$ 99,33
22-Jul-2019	3,212	\$ 99,39
19-Jul-2019	3,232	\$ 99,33
18-Jul-2019	3,181	\$ 99,48
17-Jul-2019	3,255	\$ 99,26

<b>INDONESIA ASAHAN ALUMINIUM (PERSERO) PT</b>	
<b>Indonesia</b>	
INALM 5.7100 15-Nov-2023	
3,39	108,39



<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	2,733	\$ 109,38
16-Jul-2020	2,585	\$ 109,88
15-Jul-2020	2,817	\$ 109,13
14-Jul-2020	2,781	\$ 109,25
13-Jul-2020	2,859	\$ 109,00
10-Jul-2020	2,861	\$ 109,00
09-Jul-2020	2,863	\$ 109,00
08-Jul-2020	2,869	\$ 109,00
07-Jul-2020	2,909	\$ 108,88
06-Jul-2020	3,061	\$ 108,38
03-Jul-2020	3,063	\$ 108,38
02-Jul-2020	3,101	\$ 108,25
01-Jul-2020	2,990	\$ 108,63
30-Jun-2020	3,111	\$ 108,25
29-Jun-2020	3,000	\$ 108,63
26-Jun-2020	3,115	\$ 108,25
25-Jun-2020	3,042	\$ 108,50
24-Jun-2020	3,122	\$ 108,25
23-Jun-2020	3,162	\$ 108,13
22-Jun-2020	3,126	\$ 108,25
19-Jun-2020	3,353	\$ 107,50
18-Jun-2020	3,242	\$ 107,88
17-Jun-2020	3,285	\$ 107,75
16-Jun-2020	3,362	\$ 107,50
15-Jun-2020	3,476	\$ 107,13
12-Jun-2020	3,402	\$ 107,38
11-Jun-2020	3,367	\$ 107,50
10-Jun-2020	3,297	\$ 107,75
09-Jun-2020	3,374	\$ 107,50
08-Jun-2020	3,450	\$ 107,25
05-Jun-2020	2,934	\$ 109,00
04-Jun-2020	3,491	\$ 107,13
03-Jun-2020	3,683	\$ 106,50
02-Jun-2020	3,609	\$ 106,75
01-Jun-2020	3,798	\$ 106,13
29-May-2020	3,837	\$ 106,00
28-May-2020	3,914	\$ 105,75
27-May-2020	3,992	\$ 105,50
26-May-2020	3,993	\$ 105,50
25-May-2020	4,032	\$ 105,38
22-May-2020	4,032	\$ 105,38
21-May-2020	4,072	\$ 105,25
20-May-2020	4,228	\$ 104,75
19-May-2020	4,457	\$ 104,00
18-May-2020	4,535	\$ 103,75
15-May-2020	4,497	\$ 103,88
14-May-2020	4,575	\$ 103,63
13-May-2020	4,577	\$ 103,63

12-May-2020	4,578	\$ 103,63
11-May-2020	4,617	\$ 103,50
08-May-2020	4,618	\$ 103,50
07-May-2020	4,772	\$ 103,00
06-May-2020	4,773	\$ 103,00
05-May-2020	4,889	\$ 102,63
04-May-2020	4,851	\$ 102,75
01-May-2020	4,852	\$ 102,75
30-Apr-2020	4,890	\$ 102,63
29-Apr-2020	5,006	\$ 102,25
28-Apr-2020	5,008	\$ 102,25
27-Apr-2020	5,008	\$ 102,25
24-Apr-2020	4,894	\$ 102,63
23-Apr-2020	4,933	\$ 102,50
22-Apr-2020	4,934	\$ 102,50
21-Apr-2020	4,821	\$ 102,88
20-Apr-2020	4,745	\$ 103,13
17-Apr-2020	5,012	\$ 102,25
16-Apr-2020	5,204	\$ 101,63
15-Apr-2020	5,167	\$ 101,75
14-Apr-2020	5,398	\$ 101,00
13-Apr-2020	5,398	\$ 101,00
10-Apr-2020	5,475	\$ 100,75
09-Apr-2020	5,475	\$ 100,75
08-Apr-2020	5,475	\$ 100,75
07-Apr-2020	5,553	\$ 100,50
06-Apr-2020	5,630	\$ 100,25
03-Apr-2020	5,630	\$ 100,25
02-Apr-2020	5,630	\$ 100,25
01-Apr-2020	5,400	\$ 101,00
31-Mar-2020	4,945	\$ 102,50
30-Mar-2020	4,946	\$ 102,50
27-Mar-2020	5,021	\$ 102,25
26-Mar-2020	4,984	\$ 102,38
25-Mar-2020	5,023	\$ 102,25
24-Mar-2020	5,098	\$ 102,00
23-Mar-2020	5,325	\$ 101,25
20-Mar-2020	5,174	\$ 101,75
19-Mar-2020	5,440	\$ 100,88
18-Mar-2020	5,138	\$ 101,88
17-Mar-2020	5,026	\$ 102,25
16-Mar-2020	4,952	\$ 102,50
13-Mar-2020	3,333	\$ 108,13
12-Mar-2020	3,057	\$ 109,13
11-Mar-2020	3,131	\$ 108,88
10-Mar-2020	2,825	\$ 110,00
09-Mar-2020	2,623	\$ 110,75
06-Mar-2020	2,558	\$ 111,00
05-Mar-2020	2,560	\$ 111,00

04-Mar-2020	2,701	\$ 110,50
03-Mar-2020	2,569	\$ 111,00
02-Mar-2020	2,671	\$ 110,63
28-Feb-2020	2,741	\$ 110,38
27-Feb-2020	2,810	\$ 110,13
26-Feb-2020	2,684	\$ 110,63
25-Feb-2020	2,552	\$ 111,13
24-Feb-2020	2,621	\$ 110,88
21-Feb-2020	2,590	\$ 111,00
20-Feb-2020	2,658	\$ 110,75
19-Feb-2020	2,598	\$ 111,00
18-Feb-2020	2,667	\$ 110,75
17-Feb-2020	2,668	\$ 110,75
14-Feb-2020	2,702	\$ 110,63
13-Feb-2020	2,704	\$ 110,63
12-Feb-2020	2,645	\$ 110,88
11-Feb-2020	2,714	\$ 110,63
10-Feb-2020	2,716	\$ 110,63
07-Feb-2020	2,751	\$ 110,50
06-Feb-2020	2,753	\$ 110,50
05-Feb-2020	2,858	\$ 110,13
04-Feb-2020	2,761	\$ 110,50
03-Feb-2020	2,763	\$ 110,50
31-Jan-2020	2,764	\$ 110,50
30-Jan-2020	2,799	\$ 110,38
29-Jan-2020	2,772	\$ 110,50
28-Jan-2020	2,871	\$ 110,13
27-Jan-2020	3,006	\$ 109,63
24-Jan-2020	2,941	\$ 109,88
23-Jan-2020	2,778	\$ 110,50
22-Jan-2020	2,915	\$ 110,00
21-Jan-2020	2,818	\$ 110,38
20-Jan-2020	2,820	\$ 110,38
17-Jan-2020	2,742	\$ 110,68
16-Jan-2020	2,789	\$ 110,50
15-Jan-2020	2,928	\$ 110,00
14-Jan-2020	2,897	\$ 110,13
13-Jan-2020	2,899	\$ 110,13
10-Jan-2020	2,803	\$ 110,50
09-Jan-2020	2,805	\$ 110,50
08-Jan-2020	2,745	\$ 110,75
07-Jan-2020	2,812	\$ 110,50
06-Jan-2020	2,814	\$ 110,50
03-Jan-2020	2,816	\$ 110,50
02-Jan-2020	2,818	\$ 110,50
01-Jan-2020	2,823	\$ 110,50
31-Dec-2019	2,823	\$ 110,50
30-Dec-2019	2,825	\$ 110,50
27-Dec-2019	2,829	\$ 110,50

26-Dec-2019	2,829	\$ 110,50
25-Dec-2019	2,829	\$ 110,50
24-Dec-2019	2,829	\$ 110,50
23-Dec-2019	2,835	\$ 110,50
20-Dec-2019	2,872	\$ 110,38
19-Dec-2019	2,874	\$ 110,38
18-Dec-2019	2,879	\$ 110,38
17-Dec-2019	3,010	\$ 109,88
16-Dec-2019	3,012	\$ 109,88
13-Dec-2019	2,885	\$ 110,38
12-Dec-2019	2,919	\$ 110,25
11-Dec-2019	2,796	\$ 110,75
10-Dec-2019	2,926	\$ 110,25
09-Dec-2019	2,928	\$ 110,25
06-Dec-2019	2,866	\$ 110,50
05-Dec-2019	2,867	\$ 110,50
04-Dec-2019	2,937	\$ 110,25
03-Dec-2019	3,002	\$ 110,00
02-Dec-2019	2,940	\$ 110,25
29-Nov-2019	2,974	\$ 110,13
28-Nov-2019	3,007	\$ 110,00
27-Nov-2019	2,880	\$ 110,50
26-Nov-2019	3,044	\$ 109,88
25-Nov-2019	3,016	\$ 110,00
22-Nov-2019	2,954	\$ 110,25
21-Nov-2019	3,051	\$ 109,88
20-Nov-2019	3,088	\$ 109,75
19-Nov-2019	3,185	\$ 109,38
18-Nov-2019	3,187	\$ 109,38
15-Nov-2019	3,061	\$ 109,88
14-Nov-2019	3,158	\$ 109,50
13-Nov-2019	3,163	\$ 109,50
12-Nov-2019	3,164	\$ 109,50
11-Nov-2019	3,134	\$ 109,63
08-Nov-2019	3,166	\$ 109,50
07-Nov-2019	3,136	\$ 109,63
06-Nov-2019	3,047	\$ 110,00
05-Nov-2019	3,112	\$ 109,75
04-Nov-2019	3,114	\$ 109,75
01-Nov-2019	3,021	\$ 110,13
31-Oct-2019	3,180	\$ 109,50
30-Oct-2019	3,090	\$ 109,88
29-Oct-2019	3,060	\$ 110,00
28-Oct-2019	3,060	\$ 110,00
25-Oct-2019	3,031	\$ 110,13
24-Oct-2019	3,063	\$ 110,00
23-Oct-2019	3,068	\$ 110,00
22-Oct-2019	3,101	\$ 109,88
21-Oct-2019	3,134	\$ 109,75

18-Oct-2019	3,104	\$ 109,88
17-Oct-2019	3,106	\$ 109,88
16-Oct-2019	3,048	\$ 110,13
15-Oct-2019	3,050	\$ 110,13
14-Oct-2019	3,051	\$ 110,13
11-Oct-2019	3,082	\$ 110,00
10-Oct-2019	3,022	\$ 110,25
09-Oct-2019	3,029	\$ 110,25
08-Oct-2019	3,061	\$ 110,13
07-Oct-2019	3,155	\$ 109,75
04-Oct-2019	3,003	\$ 110,38
03-Oct-2019	3,066	\$ 110,13
02-Oct-2019	3,132	\$ 109,88
01-Oct-2019	3,103	\$ 110,00
30-Sep-2019	3,104	\$ 110,00
27-Sep-2019	3,075	\$ 110,13
26-Sep-2019	3,046	\$ 110,25
25-Sep-2019	3,051	\$ 110,25
24-Sep-2019	3,052	\$ 110,25
23-Sep-2019	3,115	\$ 110,00
20-Sep-2019	3,025	\$ 110,38
19-Sep-2019	3,026	\$ 110,38
18-Sep-2019	3,062	\$ 110,25
17-Sep-2019	3,063	\$ 110,25
16-Sep-2019	3,034	\$ 110,38
13-Sep-2019	2,945	\$ 110,75
12-Sep-2019	3,068	\$ 110,25
11-Sep-2019	3,042	\$ 110,38
10-Sep-2019	3,104	\$ 110,13
09-Sep-2019	2,955	\$ 110,75
06-Sep-2019	2,986	\$ 110,63
05-Sep-2019	2,928	\$ 110,88
04-Sep-2019	3,053	\$ 110,38
03-Sep-2019	3,055	\$ 110,38
02-Sep-2019	2,906	\$ 111,00
30-Aug-2019	2,906	\$ 111,00
29-Aug-2019	3,058	\$ 110,38
28-Aug-2019	2,972	\$ 110,75
27-Aug-2019	3,004	\$ 110,63
26-Aug-2019	3,065	\$ 110,38
23-Aug-2019	3,037	\$ 110,50
22-Aug-2019	3,128	\$ 110,13
21-Aug-2019	3,043	\$ 110,50
20-Aug-2019	3,015	\$ 110,63
19-Aug-2019	3,016	\$ 110,63
16-Aug-2019	3,018	\$ 110,63
15-Aug-2019	3,049	\$ 110,50
14-Aug-2019	3,054	\$ 110,50
13-Aug-2019	3,085	\$ 110,38

12-Aug-2019	3,176	\$ 110,00
09-Aug-2019	3,088	\$ 110,38
08-Aug-2019	3,090	\$ 110,38
07-Aug-2019	3,094	\$ 110,38
06-Aug-2019	3,155	\$ 110,13
05-Aug-2019	3,186	\$ 110,00
02-Aug-2019	3,128	\$ 110,25
01-Aug-2019	3,219	\$ 109,88
31-Jul-2019	3,223	\$ 109,88
30-Jul-2019	3,136	\$ 110,25
29-Jul-2019	3,226	\$ 109,88
26-Jul-2019	3,256	\$ 109,75
25-Jul-2019	3,109	\$ 110,38
24-Jul-2019	3,143	\$ 110,25
23-Jul-2019	3,115	\$ 110,38
22-Jul-2019	3,146	\$ 110,25
19-Jul-2019	3,118	\$ 110,38
18-Jul-2019	3,120	\$ 110,38
17-Jul-2019	3,153	\$ 110,25

<b>EMIRAT OF ABU DHABI UAE</b>		
ABUDB 2.5000 11-Oct-2022 MTN		
1,91		101,48
<b>Date</b>	<b>Bid Yield</b>	<b>Bid Price</b>
17-Jul-2020	0,855	\$ 103,61
16-Jul-2020	0,795	\$ 103,75
15-Jul-2020	0,840	\$ 103,66
14-Jul-2020	0,871	\$ 103,60
13-Jul-2020	0,896	\$ 103,55
10-Jul-2020	0,954	\$ 103,42
09-Jul-2020	0,936	\$ 103,46
08-Jul-2020	0,934	\$ 103,48
07-Jul-2020	0,918	\$ 103,52
06-Jul-2020	0,864	\$ 103,65
03-Jul-2020	0,868	\$ 103,65
02-Jul-2020	0,898	\$ 103,58
01-Jul-2020	1,002	\$ 103,34
30-Jun-2020	1,048	\$ 103,26
29-Jun-2020	1,024	\$ 103,31
26-Jun-2020	1,042	\$ 103,28
25-Jun-2020	1,064	\$ 103,23
24-Jun-2020	1,062	\$ 103,25
23-Jun-2020	1,120	\$ 103,12

22-Jun-2020	1,129	\$ 103,10
19-Jun-2020	1,105	\$ 103,16
18-Jun-2020	1,183	\$ 102,98
17-Jun-2020	1,181	\$ 103,00
16-Jun-2020	1,169	\$ 103,03
15-Jun-2020	1,312	\$ 102,70
12-Jun-2020	1,241	\$ 102,87
11-Jun-2020	1,260	\$ 102,83
10-Jun-2020	1,205	\$ 102,97
09-Jun-2020	1,271	\$ 102,82
08-Jun-2020	1,370	\$ 102,59
05-Jun-2020	1,393	\$ 102,54
04-Jun-2020	1,357	\$ 102,62
03-Jun-2020	1,427	\$ 102,47
02-Jun-2020	1,433	\$ 102,46
01-Jun-2020	1,410	\$ 102,52
29-May-2020	1,404	\$ 102,53
28-May-2020	1,421	\$ 102,50
27-May-2020	1,409	\$ 102,53
26-May-2020	1,418	\$ 102,51
25-May-2020	1,470	\$ 102,39
22-May-2020	1,487	\$ 102,35
21-May-2020	1,431	\$ 102,49
20-May-2020	1,443	\$ 102,47
19-May-2020	1,512	\$ 102,31
18-May-2020	1,570	\$ 102,17
15-May-2020	1,618	\$ 102,06
14-May-2020	1,590	\$ 102,13
13-May-2020	1,589	\$ 102,14
12-May-2020	1,564	\$ 102,20
11-May-2020	1,621	\$ 102,07
08-May-2020	1,672	\$ 101,95
07-May-2020	1,592	\$ 102,14
06-May-2020	1,630	\$ 102,06
05-May-2020	1,665	\$ 101,98
04-May-2020	1,714	\$ 101,86
01-May-2020	1,673	\$ 101,96
30-Apr-2020	1,687	\$ 101,93
29-Apr-2020	1,839	\$ 101,57
28-Apr-2020	1,915	\$ 101,39
27-Apr-2020	1,927	\$ 101,36
24-Apr-2020	1,982	\$ 101,23
23-Apr-2020	1,969	\$ 101,27
22-Apr-2020	2,094	\$ 100,97
21-Apr-2020	2,151	\$ 100,83
20-Apr-2020	2,030	\$ 101,13
17-Apr-2020	2,068	\$ 101,04
16-Apr-2020	2,052	\$ 101,08
15-Apr-2020	2,028	\$ 101,14

14-Apr-2020	2,090	\$ 100,99
13-Apr-2020	2,215	\$ 100,69
10-Apr-2020	2,211	\$ 100,70
09-Apr-2020	2,208	\$ 100,70
08-Apr-2020	2,293	\$ 100,50
07-Apr-2020	2,128	\$ 100,90
06-Apr-2020	2,148	\$ 100,85
03-Apr-2020	2,366	\$ 100,32
02-Apr-2020	2,295	\$ 100,50
01-Apr-2020	2,402	\$ 100,24
31-Mar-2020	2,414	\$ 100,21
30-Mar-2020	2,486	\$ 100,03
27-Mar-2020	2,320	\$ 100,44
26-Mar-2020	2,575	\$ 99,82
25-Mar-2020	2,802	\$ 99,26
24-Mar-2020	3,020	\$ 98,74
23-Mar-2020	3,346	\$ 97,95
20-Mar-2020	2,921	\$ 98,97
19-Mar-2020	3,170	\$ 98,37
18-Mar-2020	2,904	\$ 99,01
17-Mar-2020	2,447	\$ 100,13
16-Mar-2020		
13-Mar-2020	2,071	\$ 101,07
12-Mar-2020	2,043	\$ 101,14
11-Mar-2020	1,556	\$ 102,38
10-Mar-2020	1,550	\$ 102,39
09-Mar-2020	1,898	\$ 101,51
06-Mar-2020	1,489	\$ 102,55
05-Mar-2020	1,473	\$ 102,60
04-Mar-2020	1,756	\$ 101,88
03-Mar-2020	1,753	\$ 101,89
02-Mar-2020	1,926	\$ 101,45
28-Feb-2020	1,782	\$ 101,82
27-Feb-2020	1,780	\$ 101,83
26-Feb-2020	1,702	\$ 102,03
25-Feb-2020	1,727	\$ 101,97
24-Feb-2020	1,696	\$ 102,05
21-Feb-2020	1,832	\$ 101,71
20-Feb-2020	1,785	\$ 101,83
19-Feb-2020	1,808	\$ 101,77
18-Feb-2020	1,818	\$ 101,75
17-Feb-2020	1,821	\$ 101,74
14-Feb-2020	1,831	\$ 101,72
13-Feb-2020	1,824	\$ 101,74
12-Feb-2020	1,884	\$ 101,59
11-Feb-2020	1,882	\$ 101,60
10-Feb-2020	1,871	\$ 101,63
07-Feb-2020	1,854	\$ 101,67
06-Feb-2020	1,871	\$ 101,63



05-Feb-2020	1,881	\$ 101,61
04-Feb-2020	1,922	\$ 101,50
03-Feb-2020	1,881	\$ 101,61
31-Jan-2020	1,908	\$ 101,54
30-Jan-2020	1,947	\$ 101,44
29-Jan-2020	1,944	\$ 101,45
28-Jan-2020	1,981	\$ 101,36
27-Jan-2020	2,036	\$ 101,21
24-Jan-2020	2,030	\$ 101,23
23-Jan-2020	2,025	\$ 101,24
22-Jan-2020	2,037	\$ 101,21
21-Jan-2020	2,027	\$ 101,24
20-Jan-2020	2,011	\$ 101,29
17-Jan-2020	2,024	\$ 101,25
16-Jan-2020	2,025	\$ 101,25
15-Jan-2020	2,019	\$ 101,27
14-Jan-2020	2,022	\$ 101,26
13-Jan-2020	2,031	\$ 101,24
10-Jan-2020	2,015	\$ 101,29
09-Jan-2020	2,041	\$ 101,22
08-Jan-2020	2,125	\$ 101,00
07-Jan-2020	2,066	\$ 101,16
06-Jan-2020	2,076	\$ 101,13
03-Jan-2020	2,031	\$ 101,25
02-Jan-2020	2,026	\$ 101,27
01-Jan-2020	2,034	\$ 101,25
31-Dec-2019	2,043	\$ 101,22
30-Dec-2019	2,028	\$ 101,27
27-Dec-2019	2,021	\$ 101,29
26-Dec-2019	2,019	\$ 101,29
25-Dec-2019	2,024	\$ 101,28
24-Dec-2019	2,012	\$ 101,31
23-Dec-2019	2,057	\$ 101,19
20-Dec-2019	2,025	\$ 101,28
19-Dec-2019	2,053	\$ 101,21
18-Dec-2019	2,038	\$ 101,25
17-Dec-2019	2,071	\$ 101,16
16-Dec-2019	2,043	\$ 101,24
13-Dec-2019	2,085	\$ 101,13
12-Dec-2019	2,099	\$ 101,09
11-Dec-2019	2,090	\$ 101,12
10-Dec-2019	2,083	\$ 101,14
09-Dec-2019	2,091	\$ 101,12
06-Dec-2019	2,086	\$ 101,13
05-Dec-2019	2,103	\$ 101,09
04-Dec-2019	2,081	\$ 101,15
03-Dec-2019	2,091	\$ 101,12
02-Dec-2019	2,136	\$ 101,00
29-Nov-2019	2,124	\$ 101,04

28-Nov-2019	2,144	\$ 100,98
27-Nov-2019	2,094	\$ 101,12
26-Nov-2019	2,084	\$ 101,15
25-Nov-2019	2,078	\$ 101,17
22-Nov-2019	2,132	\$ 101,02
21-Nov-2019	2,111	\$ 101,08
20-Nov-2019	2,094	\$ 101,13
19-Nov-2019	2,144	\$ 100,99
18-Nov-2019	2,154	\$ 100,96
15-Nov-2019	2,152	\$ 100,97
14-Nov-2019	2,127	\$ 101,04
13-Nov-2019	2,161	\$ 100,95
12-Nov-2019	2,194	\$ 100,86
11-Nov-2019	2,154	\$ 100,97
08-Nov-2019	2,152	\$ 100,98
07-Nov-2019	2,129	\$ 101,04
06-Nov-2019	2,159	\$ 100,96
05-Nov-2019	2,142	\$ 101,01
04-Nov-2019	2,135	\$ 101,03
01-Nov-2019	2,134	\$ 101,03
31-Oct-2019	2,148	\$ 101,00
30-Oct-2019	2,089	\$ 101,17
29-Oct-2019	2,149	\$ 101,00
28-Oct-2019	2,143	\$ 101,01
25-Oct-2019	2,146	\$ 101,01
24-Oct-2019	2,155	\$ 100,98
23-Oct-2019	2,162	\$ 100,96
22-Oct-2019	2,131	\$ 101,05
21-Oct-2019	2,152	\$ 100,99
18-Oct-2019	2,108	\$ 101,12
17-Oct-2019	2,114	\$ 101,11
16-Oct-2019	2,157	\$ 100,98
15-Oct-2019	2,110	\$ 101,12
14-Oct-2019	2,133	\$ 101,06
11-Oct-2019	2,157	\$ 100,99
10-Oct-2019	2,129	\$ 101,07
09-Oct-2019	2,119	\$ 101,10
08-Oct-2019	2,087	\$ 101,20
07-Oct-2019	2,127	\$ 101,08
04-Oct-2019	2,119	\$ 101,10
03-Oct-2019	2,168	\$ 100,96
02-Oct-2019	2,166	\$ 100,97
01-Oct-2019	2,143	\$ 101,04
30-Sep-2019	2,157	\$ 101,00
27-Sep-2019	2,207	\$ 100,85
26-Sep-2019	2,165	\$ 100,98
25-Sep-2019	2,172	\$ 100,96
24-Sep-2019	2,157	\$ 101,00
23-Sep-2019	2,142	\$ 101,05

20-Sep-2019	2,080	\$ 101,23
19-Sep-2019	2,120	\$ 101,12
18-Sep-2019	2,178	\$ 100,95
17-Sep-2019	2,073	\$ 101,26
16-Sep-2019	2,117	\$ 101,13
13-Sep-2019	2,067	\$ 101,28
12-Sep-2019	1,948	\$ 101,64
11-Sep-2019	1,958	\$ 101,61
10-Sep-2019	1,963	\$ 101,60
09-Sep-2019	1,900	\$ 101,79
06-Sep-2019	1,933	\$ 101,69
05-Sep-2019	1,913	\$ 101,75
04-Sep-2019	1,923	\$ 101,73
03-Sep-2019	1,953	\$ 101,64
02-Sep-2019	1,992	\$ 101,52
30-Aug-2019	1,963	\$ 101,61
29-Aug-2019	1,979	\$ 101,56
28-Aug-2019	1,994	\$ 101,52
27-Aug-2019	2,031	\$ 101,41
26-Aug-2019	2,079	\$ 101,26
23-Aug-2019	1,994	\$ 101,52
22-Aug-2019	2,041	\$ 101,38
21-Aug-2019	2,053	\$ 101,35
20-Aug-2019	2,050	\$ 101,36
19-Aug-2019	2,099	\$ 101,21
16-Aug-2019	2,043	\$ 101,38
15-Aug-2019	2,016	\$ 101,47
14-Aug-2019	2,082	\$ 101,27
13-Aug-2019	2,114	\$ 101,17
12-Aug-2019	2,056	\$ 101,35
09-Aug-2019	2,111	\$ 101,18
08-Aug-2019	2,095	\$ 101,23
07-Aug-2019	2,152	\$ 101,06
06-Aug-2019	2,186	\$ 100,96
05-Aug-2019	2,168	\$ 101,01
02-Aug-2019	2,190	\$ 100,95
01-Aug-2019	2,343	\$ 100,48
31-Jul-2019	2,292	\$ 100,63
30-Jul-2019	2,294	\$ 100,63
29-Jul-2019	2,314	\$ 100,57
26-Jul-2019	2,284	\$ 100,66
25-Jul-2019	2,310	\$ 100,58
24-Jul-2019	2,306	\$ 100,59
23-Jul-2019	2,345	\$ 100,47
22-Jul-2019	2,355	\$ 100,44
19-Jul-2019	2,306	\$ 100,60
18-Jul-2019	2,318	\$ 100,56
17-Jul-2019	2,323	\$ 100,55

