Islamic Banking

The Impact of Islamic Banking in Economic Development: Comparative Analysis of Iran and Saudi Arabia

Second Edition

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IMPACT OF ISLAMIC BANKING ON ECONOMIC DEVELOPMENT - COMPARATIVE ANALYSIS OF IRAN AND SAUDI ARABIA

<u>Second Edition</u>

Fundación Alberto Adriani

Thanks
Mainly my wife Suad and my children
Thanks for the support supreme and patience for all these years.

Contenido

Summary

From the very beginnings of Islamic banking (**Third Generation Finances**), which we associate with the second half of the 20th century, this component of the Islamic financial system is constantly in the expansion. We are talking about the concept that rests on the **prohibition of interest** as a way of acquiring material wealth. The focus of this work was to investigate the extent of the influence of Islamic banks on the economic development of countries, in particular, Iran and Saudi Arabia, as the two largest players of the entire Islamic financial system, on some of the basic indicators of the country's development, such as GDP (Gross Domestic Product), unemployment rate and living standard. Characteristic for the countries that are taken as samples is the fact that banking in Iran takes place **exclusively in Islamic banking** conditions, with several private banks that appear as exceptions to this rule, but their number is negligible. On the other hand, there is a **dual banking system** in Saudi Arabia. Another very important component of this work is the presentation of the differences between the two major Islamic groups of Muslims, that is, between **Sunni** and **Shia** Muslims and the possible impact on the functioning of Islamic banks in one, as well as in the other Muslim group. Throughout the work their basic characteristics will be presented, as well as what distinguishes them and to what extent their mutual differences affect the operations of banks in one and in the other country.

The research part of the work will **show the degree of possible positive or negative impact of Islamic banks** (**Third Generation Finances)** in Iran and Saudi Arabia on GDP growth rate, unemployment and living standards. Comparative analysis of Iran and Saudi Arabia will be used for comparison, with the following hypotheses:

Zero hypotheses (H0): Islamic banking (Saving and Total Investment) has no impact on GDP of Iran.

Alternative hypothesis (Ha): Islamic banking (Saving and Total Investment) has an impact on GDP of Iran.

Zero hypotheses H0: Islamic banking (Saving and Total Investment) has no impact on the GDP of Saudi Arabia.

Alternative hypothesis (Ha): Islamic banking (Saving and Total Investment) has an impact on the GDP of Saudi Arabia.

Zero hypotheses H0: There is no difference between Iran and Saudi Arabia in the degree of influence of Islamic banking (Saving and Total Investment) on economic development.

Alternative hypothesis (Ha): There are differences between Iran and Saudi Arabia in the extent of the impact of Islamic banking (Saving and Total Investment) on economic development.

Introduction

Islamic banking (islamic banking in English; Arabic مصرفية إسلامية, DMG maṣrifīya islāmīya) is a subarea of Islamic finance and conducts Islamic banking business.
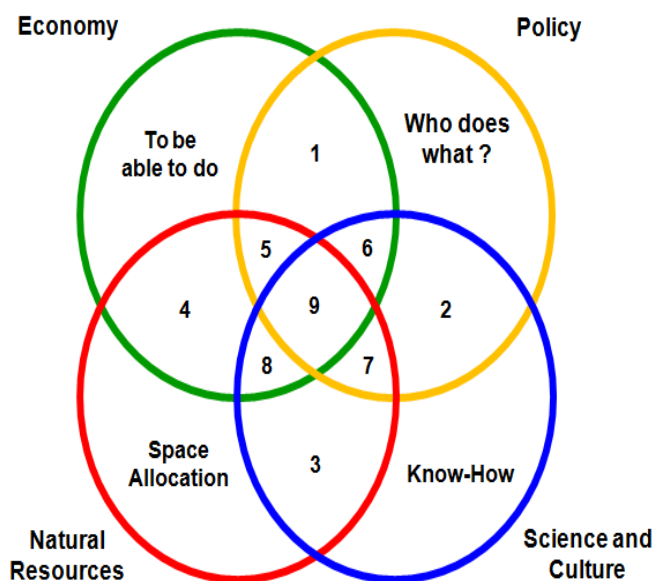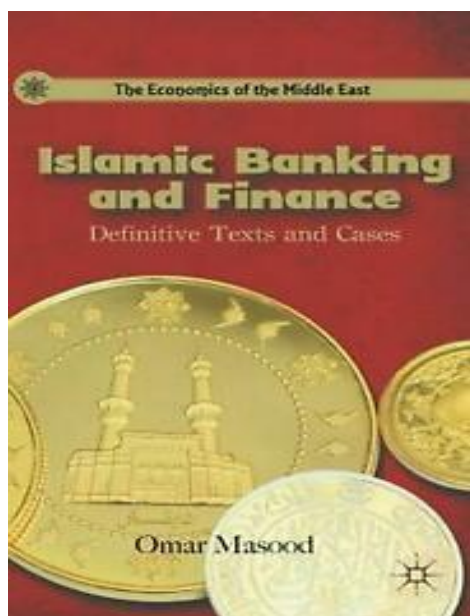
The international banking system is made up of credit institutions, securities services companies, investment banks, financial services institutions and all other types of banking-related companies established under private law, whose operational purpose includes totally or predominantly services financial The attribute "Islamic" indicates the religious-related peculiarities of this service sector. Therefore, bank transactions must be in accordance with the religious rules of Islam, the legal sources of Fiqh, Sunna and Sharia. The classical western banking business, such as credit business, deposit business, investment business, or other interest-bearing business, cannot be used in its usual way in Islamic banking.

International credit transactions, international payment transactions and interbank trade are characterized by the free movement of capital, the freedom to provide services and the freedom to contract. These principles contradict all financial contracts that are subject to the Islamic rules of the general prohibition of interest (Ribā in Arabic), the prohibition of speculation (Gharar) and the prohibition of gambling (Maysir, Qimār). However, freedom of contract allows Western banks to enter into business relationships with business partners who act in accordance with Islam. The general prohibition on interest prohibits Islamic credit institutions from engaging in interest-bearing banking

transactions, which, however, form the basis of the normal loan or deposit business of non-Islamic banks. In order to continue conducting these interest-bearing transactions with Islamic business partners, market participants have developed new financial contracts based on in-kind loan agreements, which are Sharia-compliant and based on legal opinions (fatwa). Sharia-compliant action means structuring financing, insurance, consumption, and investment strictly in accordance with Islamic rules of faith. [Katrin Geilfuß, Islamic Banking in Deutschland, 2009, S. 6] For Islamic financial institutions, the Qur'an and Sunna establish the conditions of the religious and legal framework and also form the social and ethical basis of the entire Islamic financial system. [Sven Gußmann, Islamic Finance]

The so-called Hawala financial system is not part of the Islamic banking system.

Speaking about the Islamic banking system, which since its inception is constantly expanding, it is necessary to make a general overview of the Islamic financial system itself, which resulted in banking activities. The Islamic financial system is relatively young. Its origin is associated with the period of the decolonization of the majority Muslim countries in the mid-20th century.

The Islamic financial system is considered to be one of the sectors with the highest growth rate, especially since the period of the major economic crisis, when alternative methods of investing are increasingly used. It is precisely from this system that the Islamic banking system is created, western cultures are initially mysterious and unacceptable, while today many non-Muslim countries are introducing into their conventional banks partially the business under the laws of the Sharia-Religious Law of Islam الشريعة Islamic banking is defined as a non-cash banking system. The reason for this is that Sharia is an absolute ban on the existence of **interest** and **money-based money**, with certain exceptions, which will be explained in the further work.

The records of GOD's, القرآن الكريم**Quran** (**Islam** as a religion, or the sacred books of envoy Muhammad (Peace be upon him) and **Hadisi** الحديث are the crucial guidelines and main sources of the functioning of the Islamic banking system. Therefore, this system is based primarily on economic, ethical and religious thought, and that is what keeps it on the path of righteousness.

What is particularly emphasized is the maintenance of social and spiritual equality among people, regardless of the material situation. This is reflected in one of the biggest contributions of Islamic banks, that is, creating a sense of equality among people, maintaining spiritual peace, regardless of possible financial difficulties.

Nowadays we are aware of the fact that the **World Economic Crisis** has brought about problems, both at the macroeconomic level, at the micro level, or at the individual level. In times of crisis, there is an overload of people, all in order to secure basic existential needs. This leaves significant repercussions on the inner human peace and its state of mind.

The very religion and rules that it requires of financial systems, tries to prevent precisely these problems that today's man faces. This is ach primarily by banning interest. **Interest** الربا is in the Islamic banking sector the basic **Haram-Prohibited** حرام is absolutely unacceptable   to

acquire material wealth, that is money, on the basis of money. This is a basic characteristic of Islamic banking, but certainly not the only one that matters to society as a whole.

The subject of the research of this work will include theoretical understanding of the Islamic economy, that is, the Islamic banking system, the principles and principles on which this system rests and survives, and in the second part of the research, the main focus will be, for example, the Islamic banking system (**Third Generation Finances)** in the Islamic Republic of **Iran** and the Kingdom of **Saudi Arabia** and its impact on economic growth and development in those countries. They were chosen right away examples of these two countries due to the fact that they belong to two of the three leading players in the global Islamic financial industry, as well as on the prognosis that Iran will play an increasingly important role in the global financial industry by abolishing the embargo.

The following conclusions on the economic and ethical influence of Islamic norms on financial systems were carried out:

• The operation of Islamic banks has a significant impact on the economic growth of the country, which is reflected above all in the growth of GDP as an economic indicator;
• Significant influence is also reflected in the reduction of the unemployment rate;
• What is also crucial is the increase in living standards of both Muslim countries and non-Muslim countries that increase the participation of Islamic banks in the banking market;
• Islamic banks largely contribute to the strengthening of the social responsibility of the companies with which they co-operate or invest (Corporate Social Responsibility (CSR)).

The focus of work is partly to point to significant differences that exist in the **religious sense** between **Iran** and **Saudi Arabia**, but that these great differences do not severely **divide** them in terms of the operation of Islamic banks and their impact on the general economic situation in their countries.

The research part of the work will show the extent to which the business of Islamic banks affects the economic development of the countries in which they operate, primarily in this case, the Islamic Republic of Iran and the Kingdom of Saudi Arabia.

Although every **Christian** would say that all **Muslims** are the same, the difference is that it can be said that the **Sunni** and **Shiites** (Shia) are two different religions. Thus, the focus will also be on the differences that exist from the religious foundation between these two groups of Muslims and to what extent their religious diversity leaves consequences for the operations of their Islamic banks.

It is also important to note that in the Islamic Republic of Iran there is an absolutely Islamic banking system, that is, conventional banks are privately owned, but there are very few. On the other hand, in the Kingdom of Saudi Arabia, the banking system is dual, so there are also Islamic banks and conventional banks. For this reason, they have **two Central Banks**, one that controls the business of **Islamic banks**, while the other controls all **conventional banks**. What will be significant for this research is to compare data on indicators of the country's

economic development, such as GDP, unemployment and living standards, before and after the opening of Islamic banks.

The problem itself and the subject of the research of this work involves determining the **degree** of influence that Islamic banking has on economic growth and development on the example of the Islamic Republic of Iran and the Kingdom of Saudi Arabia. Through the entire process of determining the impact of the system on a number of elements that indicate the degree of development of a country's economy, the research will be conducted on the basis of the time serial data and on the example of the aforementioned countries.

The work will give answers to the degree of influence of the Islamic banking system on the GDP of the countries mentioned above, then on the possible decrease in the unemployment rate, as well as the increase in living standards in given countries.

The increasing of GDP means Economic development. Also, the increasing of GDP is important component to improve of standard of living (well-being) and reduce unemployment, beside other important internal and external factors effecting and determining the economic growth of countries, such as democracy, open trade, inflation, exchange rate instability on account of capital outflows and economic reform to make a robust structural reformation in international capital inflows such as foreign institutional investment, third generation finance institutes and foreign direct investment.

 Indicators on the basis of which hypotheses are to be established are as follows: • Number of loans issued over a set period; • Islamic Finance Country Index (IFCI); • Return on investment (ROI); • Return on asset (ROA); • Return on equity (ROE) return on equity; • Return on capital employed (RICE).

Contribute to the countries of Western culture, which are still insufficiently informed about the concept of Islamic banking system, because it is poorly represented in these countries. The aim of the research is also to point to the significant differences that occur between the mechanism of conventional and Islamic banking. Although the functions of the financial systems are essentially the same, they are differentiated by the ways in which conventional and Islamic financial systems are reaching their goals.

Theoretical context

Chap. I:

The political-social dimension of Islam

Introduction to the Islamic Religion

It is the youngest of all monotheistic religions and appears in the 7th century as the teaching of Mohammad, (SAW). The whole of Islam is based on the belief in a God (Allah in Arabic language) and in the teaching of his envoy Muhammad (SAW). Muhammad was born around 570 in Mecca, from Abdullah's father and mother Amina and it is believed that he was chosen by God as his envoy to transmit the word of God on earth. All the words of God are united in the Holy Book of the Qur'an. The Quran is considered to be the authority supreme and ultimate revelation, that is, incorporates all the revelations from God to Muhammad (SAW). The first revelation is the moment when the angel Gabriel pointed to Muhammad, and from that time, and for the next 23 years until Muhammad's death, the angel revealed the divine words to him.

The Holy Quran is the first in importance of the Holy Book of Muslims, while the second most important is the Sunna, written by the associates of Prophet Muhammad (PUH), in which all his statements and works are recorded.

Islam preaches the belief in the existence of only one God, Allah and the existence of Muhammad (SAW) as his prophet. For a fifth part of humanity, Islam also represents faith and all the way of life on earth. This is the way of peace, forgiveness, and the preservation of faith in justice and the dignity of the human being.

True believing that a Muslim abides by religious rules from the moral, physical and intellectual aspects of life, to the social and economic, which is a particular focus of this article

The very origin of the word Islam, which means submission, comes from the Arabic word salaam, which means peace. So, Islam it means submission to God.

العالم الاسلامي

Basic Concepts of Islam

Only the belief of Islam is based on the belief in a God, in Muhammad (SAW) as the Prophet of God. the predestination of fate of man, that there is a reward for good works, as well as a punishment for malice, a faith in a terrible judgment and a belief in the resurrection of the dead. The belief in only one Allah's God is the basic postulate of Islam as a religion. God he is the only one, merciful and all powerful, and he spreads his word to humanity through its prophets. The word Allah is used of the following ways:

AllahuAkbar[1] -God is Great - الله اكبر

Bismilah- In the name of God - بسم الله

Insa'Allah- The will of God - إن شاء الله

Ya Allah- Oh God - يا الله

MashaAllah- Thank God - ما شاء الله

In Allah - God for me- بالله

SubhanAllah- Glory to God - سبحان الله

Alamdulilah- Thank God - الحمد لله

AllahuA'Alam - God knows best - الله أعلم

JazaqAllahuKhairan-May God reward you for your work جزاك الله خيرا في عملك

La Ilah ilaAllah- There is no God but God - لا إله إلا الله

Astagfirullah- God forgive me. استغفر الله

Who are the executors of Allah and are they absolutely faithful to him? He Angel الملائكة appears as a messenger, in addition to Islam, both in the Judaism as well as Christianity, and plays an important role in these religions. In Islam, angels are exalted and honorable creatures created from light, and there is an established hierarchy of angels. In the top of the hierarchy is the angel Gabriel ميكائيل. Gabriel, who first brought the proclamation of God to Muhammad (SAW), next is Miguel. His name means "Who how God? Represents justice and was named prince by defeating his own Satan. Responsible for rain and plants, **Israfil** (اسرافيل) and **Azrael** عزرائيل means help from God. The belief of Islam is based on faith in the four revelations of God, which are the messages of David, Moses, Jesus and Mohammad.

All the proclamations of God are found in the four Books Sacred It is necessary to respect the four books of the revelations of God, but only one should be followed, as the last and most exalted message, the Quran. In Islam, the term holy is rarely used, unless it is in the context of God himself, one of his 99 names, as is **El-Kuddus**القدوس. Books or publications are indicated by the Holy Book of Islam. The books are the only discourse of Allah, and they are not identical in a context of those who write them.

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[1]The paper uses the text of the Quran in the translation of Besim Korkut.

Muslims consider the arrival of the day of resurrection It is the moment when people will answer for all the acts carried out in this world, both good and bad deeds. Doomsday. It is which gives the earth a full sense of the world, because it represents a complete justice. Just doing good deeds, helping others, giving up to earthly pleasures and presenting difficulties only makes sense with the belief in the Day of Judgment.

Knowing the coming of the **Day of Judgment** (يوم القيامة), there is only Allah and nobody else. On that day, he will send his envoy **Israfil** to bring the cataclysm complete, and the following quote from the Qur'an reads:

When the sky cracks, and when the stars fall and when one gets into the other, and when the graves evaporate, everyone will know what He has prepared and what has been lost. (The Cleft, 1-5)

There is another belief in Islam, which is the belief in predestination, that is, the belief that Allah Almighty has determined everything what will happen. Predestination (**Kader**) (مكتوب ومقدر) does not exclude the existence of man's free will, but subordinates it completely to the will of God.

The 5 pillars of Islam

| The Shahada | The Prayer | The tax on the poor (sakat) | The Fast (sawm) | The Pilgrimage to Mecca |
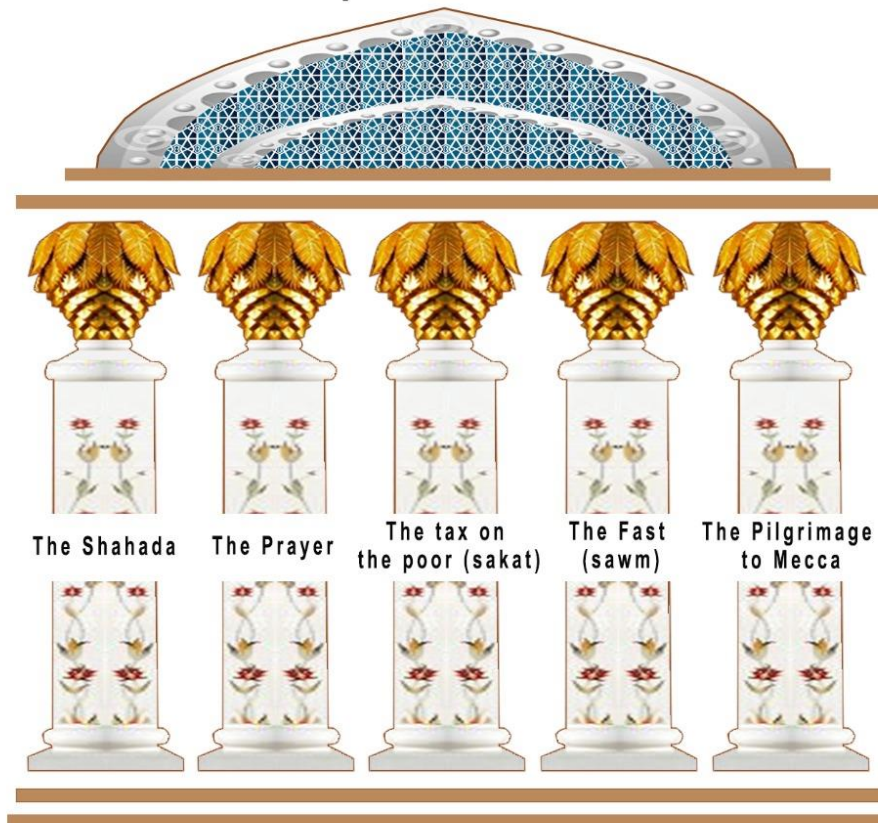
The Five Pillars of Islam: In the Islamic religion there are five duties of Muslims, that is, the five pillars of Islam, which are[2]:

• **Testimony or Confession**   ألشهادة

There is no God besides Allah, and Mohammed is his Prophet.

• **Prayer** الصلاة

• Charity الزكاة

• Fasting الصوم
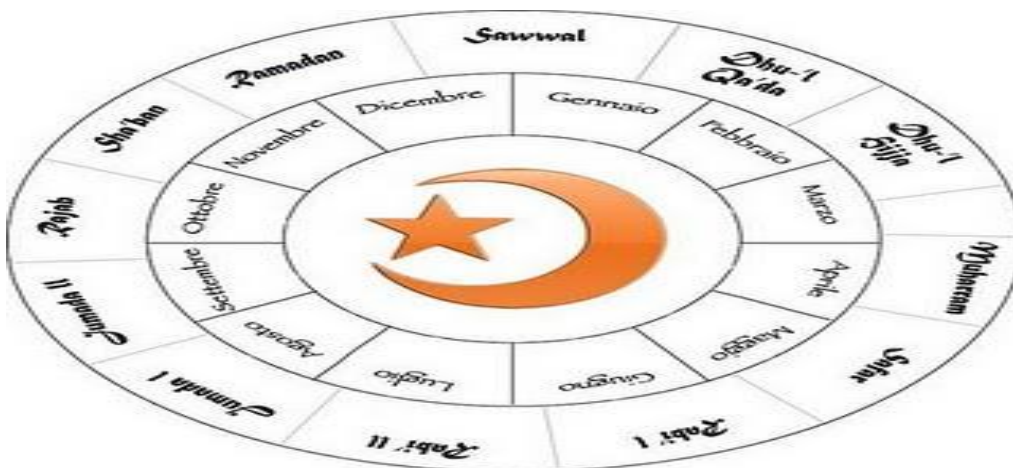
• **The Pilgrimage** الحج

The Five Pillars of Islam

Just as the five fingers of one hand form a whole, so do the Five Pillars of Islam.

The Creed, the Confession (**Shahada** in Arabic) is recited and reads: "There is no God but Allah, and Mohammed is His Prophet.

By saying this prayer, in front of two Muslim witnesses, the person converts to Islam, becomes a Muslim.

The obligatory daily prayer is called **Salat**. A devout Muslim prays five times a day. Before each prayer, the believer must wash his face, his hands and feet, so that the believer also outwardly purity when facing God.

Every year, especially during the month of **Ramadan**, Muslims in large numbers throughout the world pay a mandatory financial contribution called **Zakat**, (The Poor Tax) whose root in Arabic means "purity." Therefore, Zakat is seen as a way to cleanse and purify income and wealth from what can sometimes be worldly and impure ways of acquisition, in order to obtain God's blessing. After the month of fasting, believers donate 2.5 parts of their annual income. He is committed to God to give his donation to the poor directly an organization.

The month of fasting is called Ramadan, in this month the believer does not convert, eat or drink anything from sunrise to sunset. All other pleasures should also be avoided.

By fasting, the closeness of God can be felt and the believer realizes the pain of poor people by not having food.

The Pilgrimage to Mecca is called Hajj.

Every pious person should make the pilgrimage to Mecca once in his life, where the shrine, the Kaaba, is surrounded. The pilgrims are all dressed in a white robe, to show that all people are equal and worthy before God. This robe is reused as a shroud.

The Testimony or Confession:

It is the first and basic postulate of Islam and basic Muslim duty.

Kelime Shahadet. Shahada (Testimony) Are the words that a person must pronounce to become a true Muslim and which are: "I believe in my heart and I confirm with my tongue that there is no God but Allah and that Muhammad is the messenger of God"

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[2]Hathout H, 2014. Reading the Muslim Mind, Dobra knjiga, Sarajevo, p.83

The sentence: **It is the second pillar** of the Islamic faith and represents an essential moment of submission to Allah. Five daily prayers are prescribed:

The Fajr or Alba (الفجر); since sunrise and before sunrise. The Zuhr; الظهر from the beginning of sunset to noon, when it begins to decline. The Asr (المغرب); It is the evening prayer, from sunset. The Magrib (العصر); from sunset to when darkness rules. The Isha (العشاء); it starts from late at night until dawn.

To perform these prayers, it is necessary for the woman to cover herself with appropriate clothing for this act, covering parts of the body, leaving only the hands and face uncovered. Men wear a dress which must necessarily cover from the waist to the knees. All this after having performed the bath ritual (religious cleansing), for women after they have passed their menstrual cycle, while they are in that period the prayers are not performed. For every Muslim before prayers must perform purification or begins with intention, is say, putting in the heart the decision to do Wudu'(ablution) to draw close to God Most High.

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In addition to daily prayers, a believer also performs a night prayer, in communion, when the night falls completely. The act of prayer does not necessarily take place in the mosque; it is possible at home or elsewhere. During the week, believers perform a public prayer, which is a prayer at noon on Friday (Yumaá), which takes place in the mosque itself. The act of prayer is carried performed by a believer with full devotion and attention and he represents a conversation with God in the presence of humility, that if prayer is considered Useless. After being spiritually prepared, I will pronounce the Adam (call to prayer) and recites the opening prayer, Surah The Fatiha (الفاتحة سورة), prayer from the Koran that says:
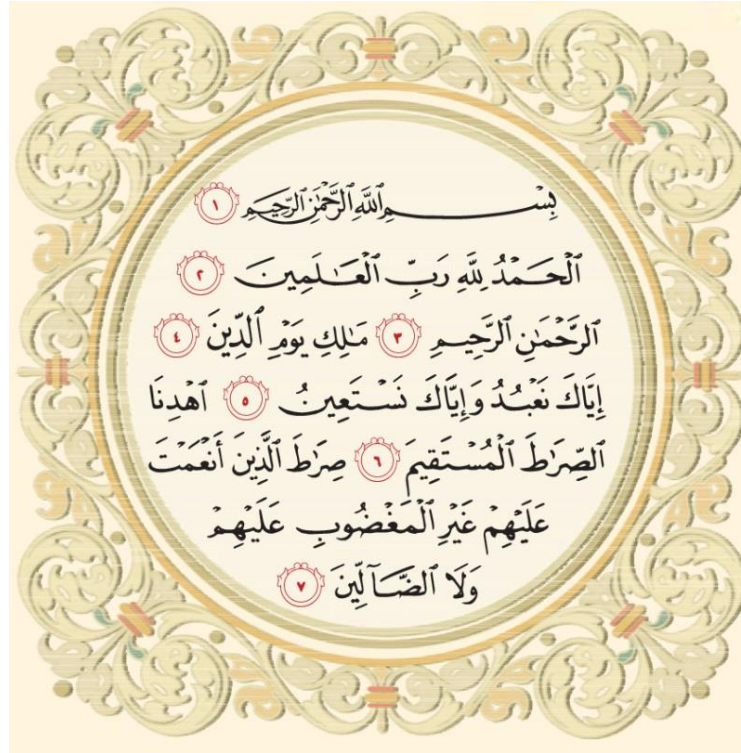
(1) بِسِّمِ ٱللَّهِ ٱلرَّحْمَٰنِ ٱلرَّحِيمِ – In the name of God, the Gracious and Merciful

(2) ٱلْحَمْدُ لِلَّهِ رَبِّ ٱلْعَٰلَمِينَ - Praise God, lord of the worlds

(3) ٱلرَّحْمَٰنِ ٱلرَّحِيمِ - The Gracious, the Merciful

(4) مَٰلِكِ يَوْمِ ٱلدِّينِ - Owner of the Day of Judgment

(5) إِيَّاكَ نَعْبُدُ وَإِيَّاكَ نَسْتَعِينُ - We implore you we ask for help

(6) ٱهْدِنَا ٱلصِّرَٰطَ ٱلْمُسْتَقِيمَ - Guide us on the straight path

صِرَٰطَ ٱلَّذِينَ أَنْعَمْتَ - Path of those whom you have favored,

عَلَيْهِمْ غَيْرِ ٱلْمَغْضُوبِ عَلَيْهِمْ وَلَا ٱلضَّآلِّينَ - Who are not the objects of your wrath and are not of the lost,

(7)

أمين "Amen".

Fasting (Ramadan). صوم رمضان During the holy month of Ramadan, believers quickly refraining from eating, drinking, smoking, full pleasures and words inappropriate from sunrise to sunset. The month of Ramadan lasts for 29 or 30 days and ends with a great Islamic holiday in the Ramadan Bayram (عيد الفطر). There are five conditions in which All Muslim believers must commit themselves, in the month of Ramadan, if the days are lost in Ramadan, if one commits to pay it later.

Oh believers, you are commanded to compromise, as commanded to those in front of you, so that you can be submissive from Allah, for a certain number of days. The one who is sick or while traveling, you must make up the lost fasting days. Those who cannot bear the burden of fasting will rescue him feeding a poor person (because not all fast the days). He who wants to do good from his heart will be good with him and if you fast that would be better for you, for let him know. (El-Bakara, 183-184.)

The Zakat: زكاة

O Charity of the faithful means believing that the Islamic faithful should divide 2.5% of your surplus properties with those who are poor, sick, old and with students who need financial aid. Mainly, zakat was seen as the voluntary assistance of Muslims wealthy people and an act of love and compassion towards other people, to then become mandatory property taxes.

The Pilgrimage or Hajj: الحج

It is an annual pilgrimage of Muslims in Mecca مكة المكرمة for all Muslim adults, the pilgrimage is mandatory at least once during life. Exceptions to this rule are sick, as are single women or women who have no relatives' men who accompany him on the way. The divine law of Islam or the law Islamic (الشريعة), in absolute translation from Arabic they mean the way leading to the source.

The Divine Law of Islam [3]

The basic role of the Sharia is religious law, but as a right whose rules imply the coverage of all aspects of the life of a believer in earthly life to stay on the right path of all life and prepare in this way for a peaceful departure to that world, is the meaning of an Islamic learning that deals with the existence of every Muslim. Fikh (الفقه): "Deep knowledge". It is the methodology for convert into law applicable to the norms of the Qur'an, understanding of religion, which in translation means and by collecting, defining and classification of all the norms prescribed by the Islamic faith. The is of utmost importance is the fact that the Sharia does not exclusively

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[3]IqbalZ, Mirakhor A. (2007), Introduction to Islamic Finance, Theory and Practice, MATE d.o.o. Zagreb, p.13

imply rules on how to bow to the five daily prayers or how to recite a prayer, but absolutely all aspects of the life of a believer, on how to eat, how to maintain personal hygiene, as well as the hygiene of the home in which you live, how to get married, how to do business and, in general, how to live in harmony with peace and deserves your justice in the world.

Sharia, as revealed by the Law of God, determines what is right and what is harmful, what is ordered and what is prohibited, what is recommends, what heals or what poisons the body.

Every generation of Muslims, appropriate to the climate and circumstances, seeks to apply the Sharia as much as possible in your everyday life, which is important for this the issue is the application of the rules of the Sharia in the economy itself. This implies rules on how to operate, the associates that a Muslim company or an entrepreneur may have, on the markets where they can operate then on the products and services that are allowed or prohibited by Sharia and what is more significant, as a means of acquiring wealth material, only for the banking sector, the prohibition of interest الربا as we have said before.

The first source of the Sharia is the holy Quran, the literal Word of God. In the Quran it deals with a wide range of questions, from the establishment of beliefs up to the definition of absolute moral norms and codes of permissible and prohibited behavior, He describes the principles of serving God and provides the framework for an extensive legal system which is related to family law, economic principles, codes criminal, social behavior, negotiation, etc. It's hard to say that there a life problem that has not been recorded in the Qur'an, who states the basic principles. The third source of the Sharia is used when a question is not specifically regulated by the **Qur'an or the Sunna**.

The Sharia is not a rigorous set of rules to be rewritten or applied anytime and anywhere, vision is allowed approach to changing situations through adoption progressive legal norms (تحليل), but the most important thing is the fact that the ultimate goal of the Sharia is the total well-being of the people, both in this and in the world. The needs of the community they can be divided as follows according to importance:

1) Existential needs

2) Ordinary needs

3) Additional needs. Existential needs are identical to the five basic goals of sharia. The objectives of this category are preservation and protection of: 1) life, 2) reason, 3) religion, 4) ownership, 5) the birth and conservation of the species.

The preservation and protection of life implies the general right to life and the need to protect it. This means that the murder is prohibited, but allowed exceptions are also defined, such as in the case of a legitimate war or the execution of a judicial sentence.

The rules for healthy eating, as well as the promotion of physical activity and personal hygiene rules exist to prevent diseases and the ways of life that lead to them. Muhammad said:

"God did not create a disease, for which he did not create his medication. Some drugs are already known and others are not".

The preservation and protection of reason as the objective implies that rationality is the character of a human being. Reason allows us recognize good and evil, and this is a guide to investigating that entire God created nature in us and around us. Also, the search knowledge is not just the right man, but his duty as a true Islamic believer[4].

"Will those who know be equated with those who do not know?"

يَسْتَوِى ٱلَّذِينَ يَعْلَمُونَ وَٱلَّذِينَ لَا يَعْلَمُونَ

(الزمر: ٩)

"Certainly, they are only fearful of God the wise men from among His servants.

إِنَّمَا يَخْشَى ٱللَّهَ مِنْ عِبَادِهِ ٱلْعُلَمَاءُ

Dealing with science and learning is everyone's responsibility able to handle it, which means we place ourselves in the God's vision of order through his creation. We must protect our intellect against censorship, repression, as well as fear and stress.

Anything that reduces our reasonable thinking and its use should be avoided completely, and this is mainly alcohol and drugs. Freedom of religion, that is, the belief and practice of rituals religious is a basic human right, and not just for Muslims, but for people around the world and of different religions.

Some Muslim scholars put this kind of freedom first, but if we take a closer look at this aspect, freedom of religion in itself is not it makes sense without preserving the right to life and preserving reason. What is correct and the obligation of every Muslim is that if an attack on one's own temple, as representative of the Islamic faith, is defended with its own lifetime. Therefore, in the Qur'an it says: **"In religion there is no compulsion"**

THERE IS NO COMPULSION IN RELIGION

LET THERE BE NO COMPULSION IN RELIGION

The protection of private property implies the right of property as an inviolable human right and there is no restriction on the acquisition of a property, in the case of obtaining it legally.

The illicit acquisition of material wealth means usury, fraud, theft, monopoly, etc. Zakat is mandatory and is equal to 2.5% of the money you is retained for one year, with the addition of formulas to the earnings of agriculture, livestock, real estate and industry. Islam is based on the achievement of the well-being of each faithful individual, which means that it is the responsibility general social help a person in need[5].

The birth and preservation of the species imply a conclusion ceremonial and documented of a marriage contract such as the only true marriage and the only legal way a couple can marry, create a family and have a descendant. All rights and obligations of the spouses and children within the family, as well as the Rules of treatment and family inheritance are defined in detail and with precision. Women have the right to work, but maintaining a Family is understood as a duty of a wife.

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[4]Hathout H., 2014. Reading the Muslim Mind, Dobra knjiga, Sarajevo, p.64
[5]Hathout H., 2014. Reading the Muslim Mind, Dobra knjiga, Sarajevo, p.67

The Basic Meaning of the Word Jihad:

Means, effort against bad intentions and irrational thoughts and deeds, as well as also against the ego itself. Very often non-Muslims speak of Islam and express themselves in a way that has nothing to do with this religion, **like Jihad**. In western cultures, especially among people who are Islam phobic, the word Jihad is associated only with the context of violence, terrorism and the suffering of innocent people. This is a completely inaccurate approach, because Jihad has several forms, which often have nothing to do with war. Jihad means the life of the believer. It's all effort in God's way and all effort in the name of God for saving the Muslim world and the Muslim faith.

There are four types of Jihad, which are:

إن الجهاد له أربع مراتب: جهاد النفس، وجهاد الشيطان، وجهاد الكفار والمنافقين، وأصحاب الظلم والبدع والمنكرات

• The Jihad of man with himself (جهاد النفس) is the effort in the performing good works.

• Jihad in the form of resistance to the act of bad deeds. (جهاد الشيطان)

• Jihad against the sinner. (جهاد الكفار)

• Jihad weapon for the defense of honor and property (جهاد الدفع)

Jihad is a very important part of Islam. Unlike the Christians, Muslims do not believe in the idea of "loving your enemies" or "Turn the other cheek" (although Christians only declare that they believe in these principles, while we see that at the same time their armies overwhelm in lands of Muslims and non-Muslims, not only today, but also ago centuries. Instead, Muslims believe in the divine principle "**fight against those who fight against you**".

This general rule and guideline are in accordance with our nature human and survival instinct. It's in the nature of man respond with the same measure of aggression and defends your life, property and wealth from any external attack. Move into battle, be you weak or strong, and fight on the path of There defending your possessions and your lives! » **This is for you know the better**! « (At-Tawba 194).

Islamic Holidays
Completion of Ramadan[6]

It is the holiday that Muslims solemnly celebrate afterwards of the culmination of Ramadan (**Eid Al Fitr**) (عيد الفطر). Which celebrates in the first, second and third day of the month, of the tenth month of the calendar Islamic since this brings with it the joy that the duty was fulfilled of the Ramadan fast and prayers were held during the month of Ramadan. The first day of the festival takes place in the circle of the family that reunites with the oldest members of

the same, in the second day cemeteries are visited. The third day is planned to socialize with friends and acquaintances and is traditionally ingrained in making friends.

Go wherever they can and to advocate for the truth wherever it is see a lie will be made. On the day of the holiday, certain things were recommended, which contributes to the marking of **special characteristics** of these holidays:

• Take a bath before going to the Eid (holiday) prayers;

• Eat before the Eid prayer, and eat the sacrificial animal only after having dispersed from it;

• Glorify Allah on the way to and in the mosque;

• Dress in the most beautiful clothes, with a good aroma and decked out with the best we have;

• Go to the mosque and somehow **talk to others to help and serve the other**.

However, Ramadan is the ninth month of the lunar calendar; calendar Muslim, calculated according to the lunar month and not with respect to the sun. This means that each year it is 10 or 11 days earlier and therefore in the month of Ramadan. In this way, each day of the year is honored with fast. At the same time, this allows us to not always fast in the summer or winter, but in the course of the year.

In the month of Ramadan, when the Quran was revealed, which serves as a guide to people and as a clear proof of the Way Right and the distinction between good and evil…?" (El-Bakara, 185)

Sacrifice Festival[7]

Sacrifice is a significant part of the Hajj (Pilgrimage). How Feast of Sacrifice (عيد الاضحى), sheep or cattle are slaughtered which It means getting closer to God, getting closer to the people?

This ritual is performed by all those who have the opportunity to do so. Usually the meat of Sacrifice is shared with the poor, relatives and neighbors; it begins with a morning prayer called the Eid or holiday prayer. The holiday's publics are organized, people exchange gifts and visits. The Charity is one of the 5 basic duties of Muslims. Kurban is for who has the material possibilities for it and if they don't, it is not a sin. Keeping everything to you is not in the spirit of helping others, however, this option is left as a relief to those who support many families and do not have sufficient resources to do so, although they would like to honor this duty. "In fact, we have given you many things good; therefore, pray and pray to your Lord". (El-Kausar, 1-2).

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[7]Resić I., Mašović S., *Ilmihal* – A brief reference to Islam, Islamic Relief p.72

Islamic Morality and Islamic Rule

A life that is led without purpose, for example, a life that meets the creator's expectations; it will resemble a train without a driver.

One of the greatest and most influential minds of today, Seyyed Hossein Nasr said in one of his essays: "**Without an element of self-denial and asceticism, without religion and, therefore, culture is not possible**." Of this thought it follows that whatever a person wants to keep good sensory perception, occasionally you have to withdraw from the fullness of life in order to allow your senses a necessary rest.

A wise proverb says that "**an empty stomach drives movement**." And an **empty stomach facilitates spiritual liftoff**. For this reason, we can consider Charity as a physical sacrifice to man so that deserves the peace of the Supreme in that world. On the other hand, it is necessary speak of morality as a set of rules and good governance, as a way to open the doors to the spiritual world. The sources of morality Islamic are the Qur'an and Hadiths, like the lifestyle of the giants Islamic. The rules of Islamic morality are divided into three groups[8]:

• Duty to the Almighty Allah (God).

• Duty to oneself.

• Duty to other people.

In relation to Allah we must:

• Firmly believe in the 6 fundamental truths of the Faith.

• Perform Islamic duties regularly and with pleasure.

Always keep in mind that everything that the Almighty Allah He has commanded is good, and everything that He prohibited is bad.

Life and death were given to us by the Almighty Allah and we need to protect them. For this purpose, they need: Purity, food, dress and moderation in everything.

Food, clothing and everything the rest must be earned through honest resources. Science and education, they improve our hearts and minds and discourage us from wrongdoing, thoughts and habits. It's not enough that we just have knowledge but be ruled by him. In order to achieve a good education, we need to be polite, shy, thoughtful and patient. Not we must be foolish, disgusting, reckless and cruel. A man must work to ensure yourself and your family on a righteous path, supports the poor, help the poor and helpless, and contribute something to the progress of the faith and the fatherland.

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[8]Resić I., Mašović S., *Ilmihal* – A brief reference to Islam, Islamic Relief p.74-75

In relation to other people, we are obliged to be good, fair and helpful. Kindness consists of: A good opinion of others (if they deserve it), in forgiving and helping the environment with good works. He Opposite of goodness is: Hate, envy and gossip.

The truth consists of the following: That a man speaks the truth, let him not pretend to carry out a promised promise. The truth is contrary to:

Falsehood, hypocrisy and alteration. Some things don't need to be revealed publicly, even if they are true, such as: Transmitting the word of another person, discover the secrets and shame of others, and gossip (gossip) to others. Justice consists in the fact that each individual receives what is yours and what belongs to you, and leave to others your rights. Justice is contrary to injustice.

The family is the community basic human, which arises Islamic marriage and love.

Parents are required to:

• Take care of the health and life of your children.

• See that they are good in faith.

• Caring for and instructing them in science or crafts and training them to life.

Children with parents have these duties:

• Be obedient and grateful.

• Listen to them, respect them, help them and love them.

• Respond immediately to every parental invitation.

• Mention parents who have died with tears and, on their behalf, offer them help.

• If the parents are sick or disabled, the children should nurture them, and if they are poor and the children have a livelihood or can earn money, then they have to support their parents. Faith

is the guidance of Allah that directs people to do voluntarily what is good in itself. Faith forbids all that is bad and harmful to soul and body, heart or mind, life and family, property and honor. Great sins are those for which punishment is foreseen severe, however, this does not distance them from the faith, that is, the perpetrator of these sins has not ceased to be Muslim, but deserved severe punishment, and it is necessary to repent for those sins. We will mention some of the great sins that are commonly composed of[9]:

• Drink and produce alcoholic beverages and drugs and take care of selling them and service.

• Eat pork, lard, and processed meat from this meat.

• Insulting and disrespecting parents, as well as not caring for your support if you are poor.

• Murder a man, except in necessary defense.

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[9]Resić I., Mašović S., *Ilmihal* – A brief reference to Islam, Islamic Relief p.77

• Lying.

• Not wanting to testify to the truth.

• It is wrong to testify and misjudge.

• Fornication or having extramarital sex.

• Usurp other property, take advantage of and destroy.

• Steal and cheat.

• Insult another.

• Burning animals or torturing them in another way.

• Slander and false testimonies (gossip)

• Pass on the words of others to deceive and hate.

• The envy. For example, wanting something to disappear.

• Boast. For example, getting big and overestimating, and humiliate others.

• Repel one evil with another evil.

• Be skeptical. For example; not carrying out your obligations.

• Do not fear God's punishment.

• The rejection or denial that Allah has revealed the Prophet Muhammad.

• Recommend for good works.

• Do not bow down to prayer.

• Drink or eat blood.

• Commit suicide and others.

   Allah has prepared pardon and magnificent reward for the Muslims and Muslims, men and women believers, the devotees and the devotees, the sincere and the sincere, the patients and the patients, the humble and the humble, those who, and those who give alms, those who, and those who fast, the chaste and castes, those who are very reminiscent of Allah" (Cap. Confederates):
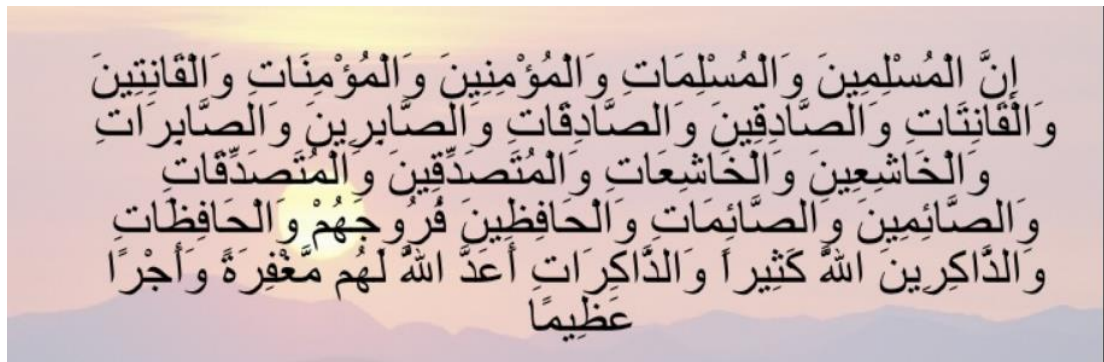
(سورةالاحزاب 35)

The Eternal Rivalry between the Sunnis and Shiítas
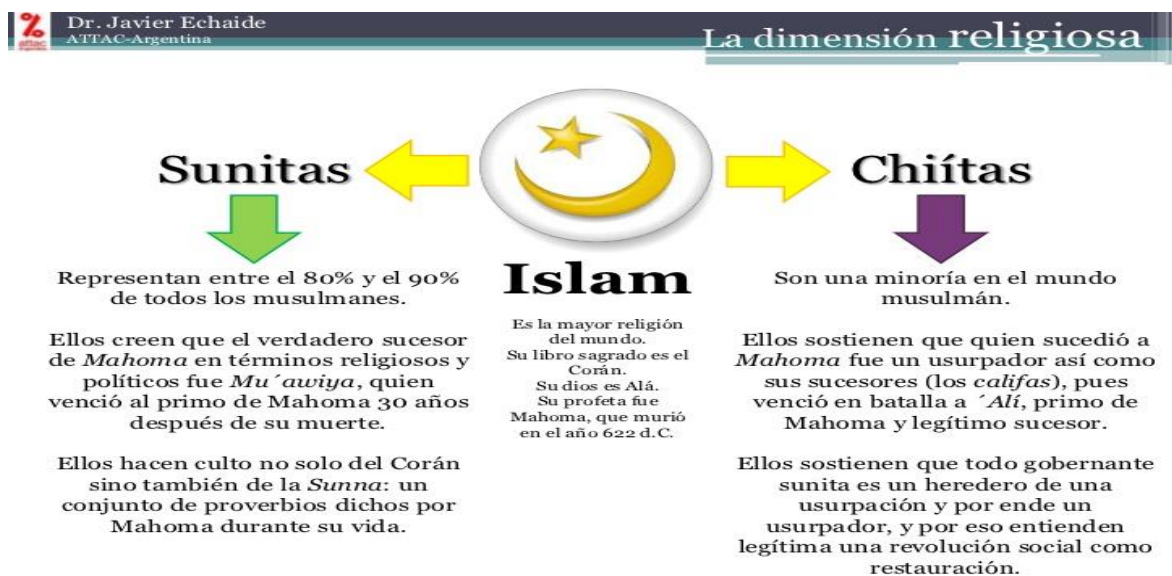
   There is a great division within the Muslim sphere: Sunnis (السنة) and Shiites (الشيعة), which generates great tensions today as evidenced between Saudi Arabia and Iran. In the perennial conflict of Saudi Arabia against Iran, is this (Iran), the only country in which religion official

is Shiite Islam. Of the around 1.6 Billion Muslims living in the world. It is estimated that 85-90% are Sunni.

At first glance, there is the same monotheistic Islamic faith. In fact, each Muslim believes in the Islamic ideal. But in practice, political factors and historical factors contributed to the creation of differences within that community. The differences are, above all, of a social and cultural nature.

In spite of everything, maybe some Christians out there, and some not believer, they will say that "all Muslims are the same", the differences among these 1.6 Billion people approximately 23% of the world population) is such that it can be said that they say: the Sunnis and Shiites; two different religious approaches. **The gap between them it is much higher than among Catholics, Protestants and Orthodox Christians**.

In the Middle East, a mixture of religion and politics has opened almost insurmountable gap between Shiite Iran and other Sunni states in the region led by Saudi Arabia.

The current conflicts in the Islamic world are mostly of religious nature and partly show traditional religious conflicts between Sunnis and Shiites, there are many examples of that. There is no information exact because in many countries, the inhabitants are not asked what religion belong when they register. Because of this, the Shiites, if it is living in a non-Christian environment, do not publicly express their religious affiliations.

The division dates back to 632, the death of the prophet Mohammad (محمد), starting a fight for the right to lead the Muslims that, in a way, continues to this day. After that both branches have coexisted for centuries, sharing many beliefs and practices, Sunnis and Shiites maintain important differences in matter of doctrine, rituals, laws, theologies and organization. Their respective leaders also tend to compete for influence.

From Syria to Lebanon, passing through Iraq and Pakistan, many conflicts recent events have exacerbated this division, breaking up entire communities.

The countries of North Africa, up to the Sahara, are mostly or in the Sunni mainland, such as Saudi Arabia, Indonesia and Bangladesh. Sunnis are the majority of the population in Syria or in Palestinian territories. Iran is the only state with the official religion of Islam Shiite.

There is a majority Shiite population present in Iraq and Bahrain. One third of the total population of Lebanon is Shiite.

After the death of Muhammad, Abu Bakr Al -Siddiq, (أبو بكر) (whose appellation translates as "He with whom Allah is pleased" and adopts it as a proper name, usual in the Islamic environment). Equal form, Al- Siddiq is an appellation with the meaning of "The Sincere". But His given name is Abd al-Ka`ba, but he modifies it to Abd Allah after convert to Islam. He was chosen as "successor" (خليفة), "heir" of the Prophet Muhammad and ruled from 632 to 634, and leader of the community and He was the first Caliph (whose leadership had to do with the spread of Islam).

He develops in Mecca as a merchant and belongs to the tribe of the Quraysh; is the first to convert to the religion that Mohammad, preaches and accompanies him to exile in Medina. Subsequently Mohammad's father-in-law returns when he marries his daughter Aisha.

When the prophet falls ill, he appoints him instead as the leader of prayer (according to the Sunnis). This fact is interpreted as that Abu Bakr is his successor, thus, when the Prophet Mohammad died, in 632 Abu Bakr is the first person who bears the title of Caliph or successor of messenger of God. Not However, Prophet Mohammad's cousin[10] and son-in-law, Imam Ali ibn Abi Tálib (علي), claims for himself the succession. Later, Imam Ali accepts the situation, although years later this disagreement causes the segmentation of Muslims in three slopes: Sunnis, Kharijites and Shiites.

Already in Prophet Mohammad's lifetime, almost all of Arabia accepted Islam, and in the next hundred years, in circumstances dramatically different from those of the life of Prophet Muhammad, the Arab tribes, under the banner of the Islam, captured most of the then civilized world, including Egypt, Palestine, Syria, Mesopotamia, and Pliny the Elder's Persia.

However, along with the expansion, Muslims themselves have compromised earthly unity, so it can be said freely that Prophet Muhammad's death created a government crisis that has not been resolved to this day.

Namely, it was the question of the succession of Prophet Mohammad. Agree to Arab customs, for the first heir, Caliph, Abu Bakr was chosen, the faithful friend of Prophet Mohammad and his father-in-law, who tried to defy to Mohammad's cousin, Ali (who was married to Prophet Mohammad's daughter, Fatima. However, this and the following two occasions of observations from Imam Ali that the inheritance should remain with him as a relative son-in-law are overlooked. The year Abu Bakr is elected; they explode tribal conflicts in the Nechd and Hijaz areas. Rebellions originate for rejection of Islam, and for the refusal to pay the zakat tax to the caliphate. The revolts are put down by the Caliph, after facing other important oppositions get the Arabian Peninsula to adhere definitely to the Islamic state. With this achievement, Abu Bakr leads his generals to conquer more territories; In this regard, the Sassanid Empire Iraq loses in a single campaign led by Khalid ibn Walid.

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[10]Abazović D., Radojković J., Vukomanović M., (2007), *Religije sveta* – Religions of the world - Buddhism, Christianity, Islam, Meet Human Rights, Belgrade

On the other hand, the Bakr government compiled for the first time the Koran, which until then is only recited from memory. Death el Califa occurs in Medina on August 23, 634; some say that the reason is poisoning and others due to natural causes. Shortly before dying, names Umar Ibn Al-Khattab as his successor. His grave is next to the Prophet Mohammad and Umar, in the Mosque of the Prophet of Medina.

As for Imam Ali, Abu Al-Hasan Ali Bin Abi Talib was **the first imam** and the successor by right of Prophet Mohammad for the Shiites, for the Sunnis is **the fourth Caliph**. **Shiites**

assert that it was explicitly arranged by Prophet Mohammad as his successor on various occasions the most famous being the announcement of the **day of Ghadir** that took place on Prophet Mohammad's last pilgrimage to Mecca. Has a high status in almost all the Sufi orders (Turuq); its members trace its lineage until Prophet Mohammad through him. He was elected by the Caliphate (ruled from 656 to 661).

According to the Shiites (شيعة) he was the first male in convert to Islam and the first Imam for the Shiites. Ruled as fourth and last Orthodox Caliph from 656 to 661 and was assassinated by Abd-Al-Rahman Ibn Muljam.

These internal disputes, which later became a open warfare, temporarily stopped territorial expansion and conquest.

How Imam Ali validated a commitment to stop disputes, part of his supporters abandoned him or "isolated themselves" (مرتدون), which was the first fraction within the Apostates and thus began a hard history for Shiite orientation in Islam. Imam Ali's eldest son, Imam Hasan (حسن) was elected by the Caliphate, then held a ceasefire with Mu'awi Ibn Abi Sufyan, also known as Muawiya, who inaugurates the **dynasty Umayyad**, **protagonist of the Battle of Suffin** (July 657) **against imam Ali** Ibn Abi Tálib, Governor of Syria from the time of Caliph Umar Ibn Al-Khattab, seized power in 661 giving rise to an Arab State-Sirius. **<u>Due to his opposition to Caliph Ali, he has been hated and rejected by the Shiites.</u>**

The Umayyad dynasty ruled for the next 100 years and the Islamic empire it grew and became stronger in that period. However, dissatisfaction with the reign of the dynasty also grew, especially in the distribution of wealth and privilege, so that his opponents, around 750, managed to overthrow them from power, and from then on the reign of the Abbasid (Abassid)

dynasty (السلالة العباسية)   . He ruled until 1258, and during that long period, the empire was strengthened, the Abbasid dynasty abounded with riches and prosperity. They developed a special administrative system. The new capital, Baghdad (بغداد), had administration, and the throne of the empire was relocated to Baghdad, becoming the largest urban center, the center of political and economic activity throughout the empire.

The period of government of the Abbasid Caliphs (Abassid) is marked for the strong development of science, education, law and the rise of art. However, during the 10th century, a crisis in the Abbasid (Abassid) Dynasty arose, and a new empire led by the Fatimid Dynasty, which was Shiita, it was created. Although Baghdad was conquered and a new center in Cairo (قاهرة).

The Abbasids were nominally ruled for the next 200 years, the real power lay in the hands of the Fatimid Dynasty, who turned Cairo into a new capital. The construction of al Azhar, the most influential Islamic educational center by the Fatimid government, who in 1171 conquered Cairo.

Meanwhile, the Christian Crusaders were conquered by Jerusalem, in which Saladin (Salah Ad-Din Yusuf ibn Ayyub), (صلاح الدين) he suggested gathering the army and restoring the city in 1187. Therefore, together with Egypt, Syria and Mesopotamia, he also ruled Jerusalem.

At that moment, the Abbasid Caliphs were nominally ruled by Baghdad, but the empire had already been divided into several parts. The advancement of Mongols through China and Russia in the late 12th century and their conquest from Baghdad marked the final end. **Islam** spread among the non-Muslim population, especially in newly established states and territories, commercial and political links, science and the arts developed. In that period, religious scholars played an important role in the 3 empires that ruled Delhi, Isfahan and Istanbul in a certain way in order to control the population. Most of them were members formalities of the government apparatus.

Unlike the Sunni orientation, to which almost 90% belong of Muslims in the world, the Shiite trend in Islam includes a minority of the population (about 10% of the number of Muslims). Among them, and by far, the largest group consists of the followers of the 12 Imams or Duodecimalists (أئمة الشيعة الاثني عشر), the religion of Persia (modern day Iran) from 1501.

EL IMANATO CHIITA
Y LA SUCESION DEL CALIFA ALI

La rama mayoritaria chiíta es la duodecimana, que reconoce doce imanes:

1) Ali ibn Abu Talib
2) Hassan ibn Ali
3) Hussein ibn Ali
4) Ali ibn Hussein "As-Sayyad"
5) Muhammad ibn 'Ali Al-Baquir
6) Jafar ibn Muhammad Al-Sadiq
7) Musa ibn Jafar Al- Kadzim
8) Ali ibn Musa Ar Rida
9) Muhammad ibn Ali Al-Yawad
10) Ali ibn Muhammad Al-Hadi
11) Hasan ibn Ali Al-Askari
12) Muhammad ibn Hassan Al-Mahdi (el Imán "Oculto")

Duodecimalists acknowledge the 12 Imams, the most distinguished being imam Ali (علي) and the twelfth, Imam Mehdi (المهدي)- (عجل الله فرجه), who mysteriously disappeared and is still expected to return.

The Shiites believe that he will return at the end of time as the Messiah, **bringing peace, justice and unity** to the world. The next big group in the Shiite orientation are the Zeidi (الزيدية) (Zaidians), also called "The5 Shiite Imams" (أئمة الشيعة الخمسة), which is mostly inhabited by **Yemen** today, and the third group by number "Seal of 7 Magnets" (أئمة الشيعة السبعة), concentrated in India, and dispersed throughout Central Asia, Iran, Syria and East Africa[11]. That is what, to me, an eternal student and researcher has led me to delve into this topic, which

I, as an Islamic believer, thought that I knew a lot, and when I started reading more and searching deeply, I realized with each new line I read, from my understanding and how little my knowledge is and how much information on the subject it can be learned. First of all, I turned my attention to asking about how the creation and operation of Islamic banks has affected the economic development of the countries, while, as one of the factors key to this, the difference between Sunni Muslims was taken into account and Shiites and their variations.

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[11]Abazović D., Radojković J., Vukomanović M., (2007), Religions of the world - Buddhism, Christianity, Islam, Meet Human Rights, Belgrade, p.104

The Value of Islamic Learning for Science- An interest-free bank in Islam according to the theorist Muhammad Baqir Al-Sadr.
The works by Baqir al-Sadr contains traditional Shia thoughts, while they also suggest ways Shia could "accommodate modernity". The two major works by him are Iqtisaduna on Islamic economics, and Falsafatuna (Our Philosophy). They were detailed critiques of Marxism that presented his early ideas on an alternative Islamic form of government. They were critiques of both socialism and capitalism. He was subsequently commissioned by the government of Kuwait to assess how that country's oil wealth could be managed in keeping with Islamic principles. This led to a major work on Islamic banking, which still forms the basis for modern Islamic banks.

Using his knowledge of the Quran and a subject-based approach to Quranic exegesis, Al-Sadr extracted two concepts from the Holy text in relation to governance: khilafat al-insan (Man as heir or trustee of God) and Shahadat Al-Anbiya (Prophets as witnesses). Al-Sadr explained that throughout history there have been "... two lines. Man's line and the Prophet's line. The former is the Khalifa (trustee) who inherits the earth from God; the latter is the Shahid (witness)"

Grand Ayatollah

آية الله العظمى السيد محمد باقر الصدر

Muhammad Baqir al-Sadr

Native name:	آية الله العظمى السيد محمد باقر الصدر
	March 1, 1935, Kadhimiya, Iraq
Death :	**April 9, 1980 (45 years) Baghdad, Iraq**
Cause of death:	**Execution**
Nationality:	**Iranian and Iraqi**
Religion:	**Shiism religion, Islam**
Party political party:	**Dawa Islamic**
Family:	**Fathers Haydar al-Sadr- Relatives Amina Sadr bin al-Huda (Sister)- Muhammad Sadeq al-Sadr (cousin) Musa as-Sadr (cousin)**
Occupation:	**Professional information, Ulama, Philosopher and Cleric and essayist**

Al-Sadr was executed by Saddam Hussein in 1980 before he was able to provide any details of the mechanism for the practical application of the Shahada concept in an Islamic state. A few elaborations of Shahada can be found in Al-Sadr's works. In his text Role of the Shiah Imams in the Reconstruction of Islamic Society, Al-Sadr illustrates the scope and limitations of Shahada by using the example of the third Shi'i Imam, Hussein Ibn Ali (the grandson of the Prophet), who defied Yazid, the ruler at the time. Al-Sadr explained that Yazid was not simply acting counter to Islamic teachings, as many rulers before and after him had done, but he was distorting the teachings and traditions of Islam and presenting his deviant ideas as representative of Islam itself. This, therefore, is what led Imam Hussein to intervene challenging Yazid in order to restore the true teachings of Islam, and consequently laying down his own life. In Al-Sadr's own words, the Shahid's (witness - person performing Shahada or supervision) duties are "to protect the correct doctrines and to see that deviations do not grow to the extent of threatening the ideology itself."

The bench Modern Islamic began to develop after the Second War World. After the success of individual projects, **from the middle of 1970, Islamic banking has expanded widely**, mainly in the Gulf countries and Egypt. Also, countries like Iran, Pakistan and Sudan have tried to completely Islamize their financial systems, with variation of results.

Islamic banking theorists have tried to solve the problem to develop financial instruments that do not use interest, with the possibility of adapting investment and mobilization of savings. These contracts uncapped financial instruments were used to develop Islamic banking modern.

How Islamic banking works shows what the balance sheet looks like of Islamic banking. On the liabilities side, Islamic banking, in addition to current accounts and own capital, must, above all, count with investment accounts in which Islamic banks and savers they share the benefits obtained.

On the asset side, Islamic banks invest their savings through by partnership agreement or through debt agreements. Under agreements of society, **Islamic Banking will share the profit (or loss) with a partner of business**. These societies, with certain peculiarities, are quite

Similar to classical companies, mainly associations. On the other hand, debt agreements are classic commercial contracts, which are modified for modern businesses. These contracts are based on the exchange of a physical item through advance payment or deferred payment.

Rapid growth in the value of Islamic banking assets makes Islamic banking interesting not only for Muslims. Therefore, we want to analyze the challenges and opportunities that exist in the establishment of Islamic banks. The experience of the past 40 years in various countries and environments provides a wealth of information about opportunities and challenges that may be an opportunity or a threat to the development of Islamic banking in a country.

The value of Islamic learning for science

ASTRONOMÍA Y NAVEGACIÓN:
astrolabio y brújula
Se construyeron observatorios en los centros más o menos importantes del imperio islámico: en Bagdad, El Cairo, Córdoba, T o l e d o y S a m a r k a n d a.

The most important and crucial issues of our contemporary era, related to culture, socio-political issues, and issues related to the economy, which are of particular importance for this dissertation, receive a completely new dimension, viewed from the perspective of Islamic learning. Since its inception, humanity has remembered the development of many cultures, religions and civilizations. In addition to the Egyptian, Greek, Persian and Chinese civilizations, there is also Islamic civilization. Each of them had some of its own characteristics that remained significant until nowadays. In Greece, philosophy had a remarkable significance, with Romans architecture, and Islamic civilization remained remembered for the importance of the development of medicine, astronomy, philosophy, and mathematics and physics.

What is mentioned to the Qur'an as extremely important to all Muslims throughout the world is just understanding of religion in its true sense. Faith in God and in His uniqueness should not be claimed solely by accepting the proclamation of God and by accepting Muhammad as his Prophet, but it must lead our mind to such a powerful effort that results in the application of both logic and reasoning. In many publications, the Qur'an points out the necessity of man's thinking, reflection and consideration of the entire existence of the universe and its existence in it. In this way man extends his knowledge of the Creator. A theme that unites the notions of science and Islam in the last decades is one of the most important themes of many Muslim scientific meetings. The first announcement to Muhammad was precisely: "Learn, read, find out something new in the name of the Lord ..." (Qur'an). Generations will need time, even after a thousand and four hundred years after the announcement of the Qur'an, as it is with us, to understand some of the things mentioned in this perfect Book, and by the Judgment Day will be a challenge to people and the object their research. The very first publication of Muhammad is what the learned Muslims around the world state to learn, read and examine unexplored parts of the planet, as well as the science of searching for new information that will bring us closer to the great knowledge God has assigned us.

That's what I, as an eternal student and researcher, have led me to deepen this topic, which I, as an Islamic believer and goddess, thought I knew a lot, and when I began to read more and seek deeper, I realized that with each new I read through the lines of my understanding how little my knowledge is and how much more information about the topic can be learned. First of all, I directed my attention to asking the answer to the question of whether and to what extent the creation and operation of Islamic banks has affected the economic development of the countries, while, as one of the key factors for this, it took into account the difference between the Sunni and Shiite Muslims and their various.

Modern Islamic banking began to develop after the Second World War. After the success of individual projects, since the mid-1970s, Islamic banks have expanded widely, primarily in the Gulf countries and in Egypt. Also, countries like Iran, Pakistan and Sudan have tried to Islamize their entire financial system, with varying success.

The Islamic banking theorists tried to solve the problem of developing financial instruments that do not use interest, with the possibility of adequate mobilization and investment of savings. These uncapped financial contracts were used to develop modern Islamic

banking. How Islamic banks work best shows how the balance sheet of the Islamic bank looks like. On the side of the liabilities, the Islamic bank, in addition to current accounts and own capital, must, above all, rely on investment accounts where the Islamic bank and savers share the realized profit. On the assets side, Islamic banks are investing their savings either through partnership agreements or through debt agreements. Under partnership agreements, the Islamic Bank will share the profit (or loss) with a business partner. These partnerships, with certain particularities, are quite similar to classical companies, primarily partnerships and partnerships. On the other hand, debt agreements are classic trading contracts, which are modified for modern business. These contracts are based on the exchange of a physical item by way of advance payment or deferred payment.

The rapid growth in the value of assets of Islamic banks makes Islamic banking interesting not only for Muslims.   Therefore, we want to analyze the chances and challenges that exist in the establishment of Islamic banks. The experience of the past forty years in various countries and environments provides a great deal of information about opportunities and challenges that can be an opportunity or threat to the development of Islamic banking in one country.

Table 1: Basic differences between Shiites and Sunnis (taking Salafism as an example for Sunnis)

<u>**1. The case of (القضية)**</u>
<u>Shiite (الشيعة)</u>
Imamate and succession
(الامامة والخلافة)
The Imam and Caliph after Muhammad is Ali, and Abu Bakr, Omar and Othman robbed him of that right by taking power.
<u>Suniti (السنة)</u>
Abu Bakr is the caliph and imam after Muhammad, followed by Omar and Othman and Ali.
<u>**2. Joining prayers**</u>
(الجمع بين الصلوات)
<u>Shiite (الشيعة)</u>
They always combine the noon with the afternoon prayer, as well as the evening with the evening.
<u>Suniti (السنة)</u>
Prayers may not be combined, except in the case of travel, illness, rain, or in accordance with Sharia.

3. A follower
(عدالة الصحابة)

<u>Shiite</u> (الشيعة)

Those who have demonstrated piety alongside Muhammad's neighbors while some who have fought against them are listed as sahabs.

<u>Suniti</u> (السنة)

Who spoke to Shahad the Prophet and died at his mercy?

4. Infallibility
(العصمة)

<u>Shiite</u> (الشيعة)

 Prophets and imams and fellow prophets.

<u>Suniti</u> (السنة)

Only a prophet.

5. Marriage for pleasure
(زواج المتعة)

<u>Shiite</u> (الشيعة)

Allowed - halal (خلال).

<u>Suniti</u> (السنة)

Illegal - Haram (حرام)

. Visit to the graves
(زيارة القبور)

<u>Shiite</u> (الشيعة)

They visit graves, pray for their dead.

<u>Suniti</u> (السنة)

They consider the customs of Shiite and Sufism to be polytheism

7. A call to prayer
(الأذان)

<u>Shiite</u> (الشيعة)

They say: "We are going to the most honorable deed", and they consider it an indispensable part of the call, as they say: "I am a witness that Ali is a follower of God", after that there is no God but Allah and that Muhammad is God's Messenger.

Suniti (السنة)

They make the call as is common in Arab countries and Egypt.

8. Al mahdi / expected

(المهدي)

Shiite (الشيعة)

They believe that Almahdi is Imam Muhammad bin Alhasan Alaskeri and that he descended into the crypt and they expect him.

Suniti (السنة)

They believe that they will be born at the end of time from the prophet's offspring.

9. Imams

(الأئمة)

Shiite (الشيعة)

Beginning with Imam Ali and concluding with Imam Almahdi.

Suniti (السنة)

They combine the caliphate and the imamate.

10. Imam Hussein is alive (Ashura day of mourning)

Shiite (الشيعة)

Shía Mourns

Before changing the banner, before dressing in black and before serving in the processions of the Lord of the Martyrs, you must replace your dead conscience, the built-in rancour and sectarianism that flows in your blood and hatred for this and that, follow Hussein's morals and use Zainab's shyness, have courage Guides, whether they are like Husseins, with everything they own or not, since Hussein is more of a spiritual message than a material one, and since Hussein came out to reconcile his grandfather's nation when he said "come out, keep your

essences, your decisions , your country and those who preside over you, and be free, ''Hussein is the father of the free.

Al-Hussein is alive, he doesn't need anyone to mourn him, he needs someone to go his way.

قبل ان تستبدلوا الرايات وقبل ان ترتدوا السواد وقبل ان تخدموا في مواكب سيد الشهداء إستبدلوا ضمائركم الميته وجدانكم المعدوم الحقد المزروع والطائفيه التي نسرى في دمائكم والكره تجاه فلان وفلان ارتدوا اخلاق الحسين ارتدي حياء زينب امتلكوا شجاعة الكفيل تخلقوا واقتدوا وتمسكوا وكونوا حسينين بكل ما تملكون او لا تكونوا فالحسين رساله روحيه قبل ان تكون جسديه ومثلما خرج الحسين مصلحا لامة جده كما قال اخرجوا واصلحوا انفسكم وقراراتكم وبلدكم ومن بتراسكم كونوا احرار فالحسين أب الاحرار

الحسين حي يرزق لا يحتاج لمن يبكيه
بل يحتاج الى من يسير على دربه

Non-interest Banking System

As for the bank less bank, these two processes cannot be separated from each other, because for a non-interest-bearing bank, a fixed deposit and the way of its use, they represent together two parts of a single process, and this has to be studied with all its elements, and cannot be fragmented and separate from the whole.

Therefore, in the first chapter we study the proposed theses that exist, and in the second chapter we study the existing realities of banks and all their activities related to existing theses.

On the other hand, the Ban "الربا" will be applied to private banks, while other monetary and financial institutions will not be applied, and so many aspects of the Islamic system will remain disabled in real life.

But this is not a legitimate excuse for applying the provisions of the Islamic system wherever possible, because all the provisions of Islam must be applied, regardless of whether or not other provisions apply. The application of each provision brings society closer to the possibility of applying the rules of Islam as a whole.

The study of an interest-free bank and other aspects of society implies the regulation of all aspects and all areas of society based on the principles of Islam, and there will be no room for contradiction and complication beyond the complications that may arise from the pressure of other communities working with Riba "الربا" and coexisting with an Islamic society.

Contrary to this, if a second position is imposed in advance, this makes the bank's non-interest-bearing thesis an inflexible one and it will not have a better version of the Islamic aspect, but it is forced to have a formula for existence and advancement in that framework, and has the power to survive alongside other banks which continue to function on the basis of interest "الربا" even after the creation of an interest-free bank is planned.

Chap. II:

Islamic Financial System - Key features, postulates and differences in relation to the conventional financial system

QISMUT could grow from US$662b in 2013e to US$1.6t in 2018
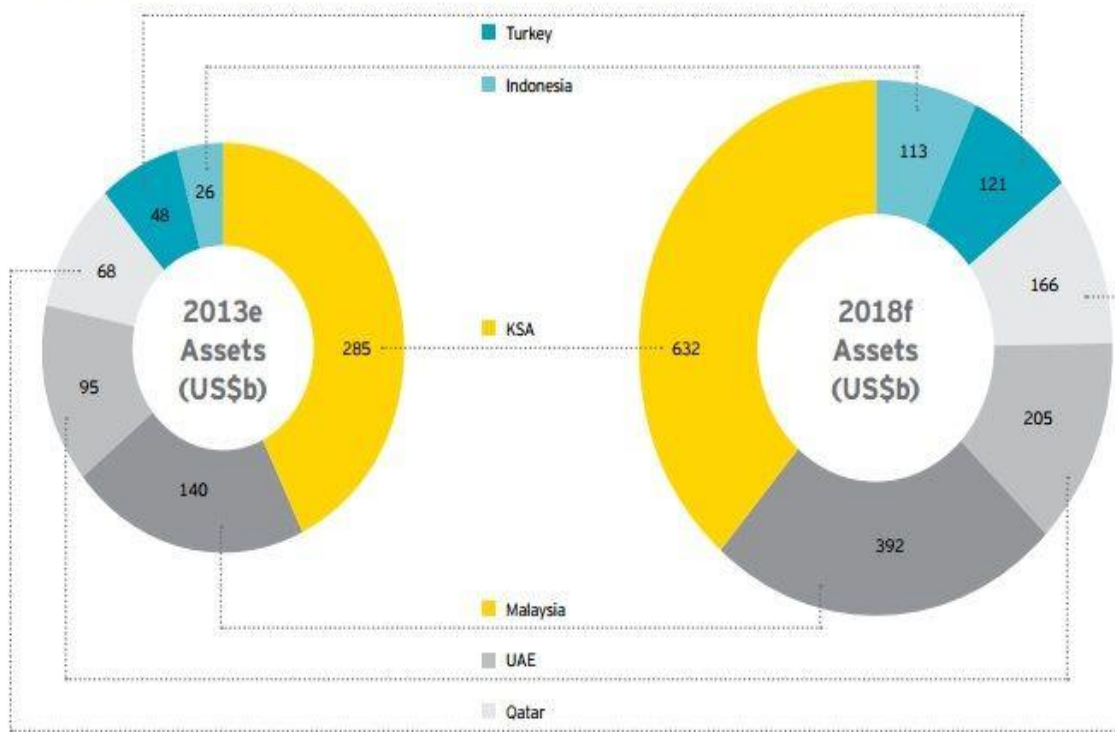
7 Principles of Islamic Banking and Finance
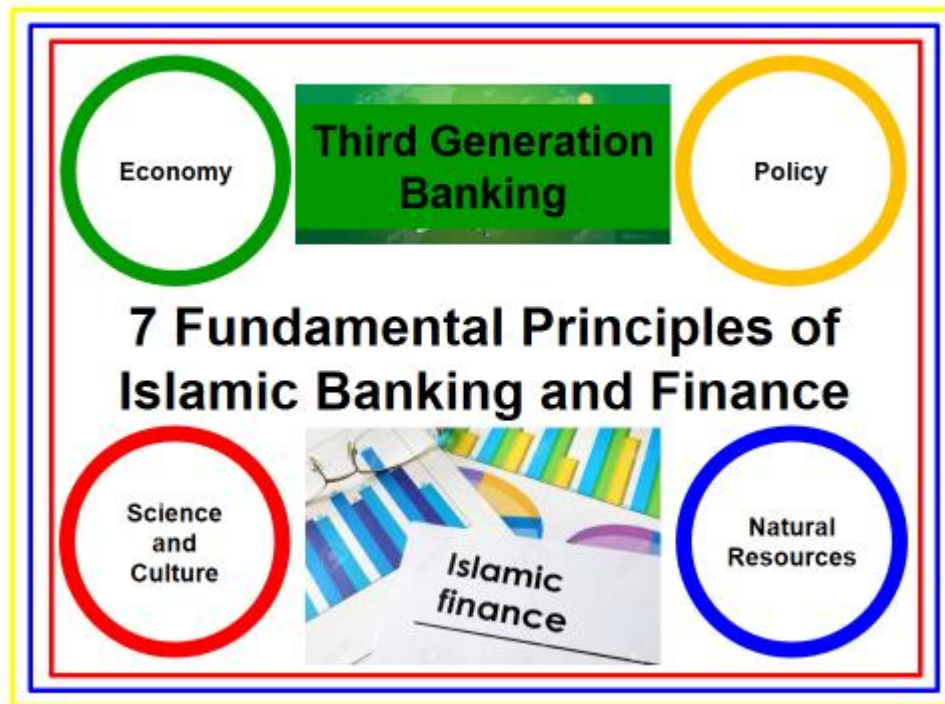
7 Fundamental Principles of Islamic Banking and Finance

Islam has established values and goals that meet all the economic and social requirements of human life. Islam is a religion that not only focuses on the success of life after death, but also organizes a person's life perfectly. Islamic laws are known as Sharia which means clear path. At present the banking system is against the principles of Islamic banking. Due to the reason, here we discuss the seven main principles of Islamic banking and finance:

Principles of Islamic Banking

Transnationalization of production

Deepening bursatil

$Y^s > Y^d$

2

$V^d > CR^d$

6 7

1 9 3

5 8

$K_f > K_\pi$

4

privatization of means of payment

Introduction to telematics

Disassociation with gold
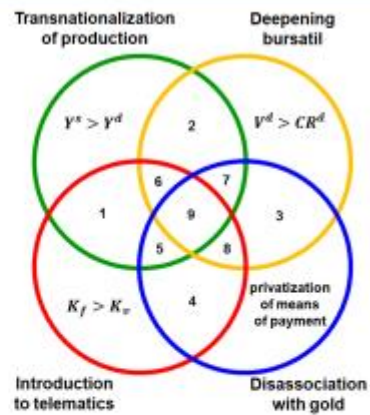
1) Profit and loss sharing

It is one of the best principles of Islamic finance where partners will share their profits and losses according to the role they played in the business. There will be no guarantee on the rate of returns that Muslims will perform as part of a partner and not as part of a creditor.

Principles of Islamic Banking

2) Risk sharing

In economic transactions, risk sharing is promoted by Islamic banking. When two or more parties share risk following the principles of Islamic banking, the burden of risk will be divided and reduced on the parties. This will improve the economic activity of the state.

ISLAMIC FINANCE

Principles of Islamic Banking
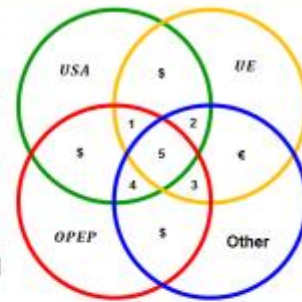
3) Riba

It can be considered as the prohibition of interests:

Wealth will be returned without any risk or effort.

Regardless of the outcome of the economic activity, the person who gets the loan has to pay back the money and Riba to the lender.

In the principles of Islamic banking, taking advantage of the problems faced by others is unfair

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Principles of Islamic Banking

Compound Interest
Interest is capitalized
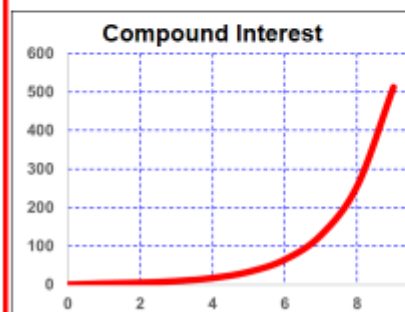
Simple Interest
The interest rate is not added to the initial capital. Constant profitability.
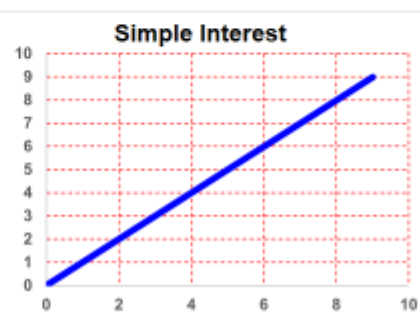
COMPOUND INTEREST FORMULA

The Compound Interest formula is used to calculate how much Capital an Investor has at any given time.

Ko = **Initial** Capital

P = Interest Rate (in %)

n = Terms (in years)

Kn = **Final** Capital

CAPITAL
1000
Payment of Interest 10%
1100
Payment of Interest 10%
1210
Payment of Interest 10%
1331

100
110
121
of these 1331, is attributed to the interest and the compound interest

$$Kn = Ko * \left[1 + \left(\frac{P}{100}\right)\right]^{n}$$
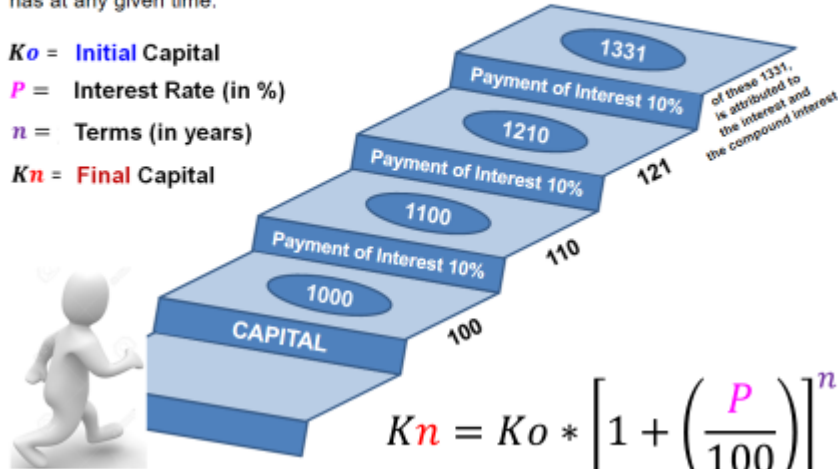
Ko = **Initial** Capital

n = Terms (in years)

P = Interest Rate (in %)

Kn = **Final** Capital

$$Kn = Ko * \left[1 + \left(\frac{P}{100}\right)\right]^{n}$$

n	Kn
0	1000
1	1100
2	1210
3	1331
4	1464,1
5	1610,5
6	1771,6
7	1948,7
8	2143,6
9	2357,9
10	2593,7

Capital (Kn) vs Term (n)

FINANCIAL VICIOUS CIRCLE

Principles of Islamic Banking

GHARAR

4) Gharar

According to Islamic financial principles, Muslims are not allowed to participate in ambiguous and uncertain transactions. According to Islamic rules, both parties must have adequate control over the business. In addition to sharing full information with both parties so that profits and losses are shared equally.

Principles of Islamic Banking

5) Gambling

In Islam, it is forbidden to acquire wealth by perverse means or to participate in gambling. It will protect Muslims from conventional insurance producers because it is a type of gambling. On the other hand, Islamic banking operates in Takaful that involves mutual responsibility and shared risks.

Principles of Islamic Banking

6) No investment in prohibited industries:

Industries that are harmful to society or that threaten social responsibilities are prohibited in Islam, including

Pornography
Prostitution
Alcohol
Pig
Drug

According to Islamic financial principles, you are not allowed to invest in such industries. You cannot even participate in the mutual funds that will help the industry flourish.

Principles of Islamic Banking

ZAKAT IN ISLAM

7) Zakat:

There is a property tax included in the rules of Islam that is known as Zakat, which allows for the balanced distribution of wealth. According to Islamic banking principles, the fair amount of Zakah is deducted from the accounts of Muslims in the holy month of Ramadan. Islamic banks promote this social responsibility and distribute the amount among the needy.

WHO RECEIVES ZAKAT?

Basic Principles of Functioning of the Financial System

The financial system is an integral part of each country's economic system. Its adequate functioning enables the survival, growth and development of the entire social community. 12 The financial system is an integral part of the economic system consisting of several elements, which should enable a smooth flow of financial resources in a socio-economic community. It could be said that this conclusion about the financial system is derived from one of many definitions of the same. One of them is: "The financial system is the cradle of markets, institutions, laws, regulations and techniques through which bonds, shares and other securities are traded, determine interest rates, and financial services and products are delivered worldwide." [13]

The basic characteristics of the financial system are: [14]

• Dynamic - is associated with changes that are continuously occurring. Static and immutability are not inherent in the financial system. Consequences of some events that bring the financial system into balance and the state of imbalance are constantly present. In recent decades, there have been some significant reforms in many financial systems around the world. Changes occurred in the less developed countries of the world, which are still in transition, but the changes have occurred in the most developed countries of the world, which were not exempted from the consequences of the Great Economic Crisis. Internationalization, globalization, as well as an ever-more important and today's indispensable factor in information technologies, are just some of the radical changes that have come to the global financial system.

Of particular importance is the growing role of the Islamic financial system within the global financial system.

• Openness - is defined by the openness of the financial system abroad. It is necessary to ensure the free flow of financial resources and instruments. This is achieved by investing business entities in various forms of cooperation and business relations with entities outside the borders of the national economy. When it comes to the international cooperation of the Islamic

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[12]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.6

[13] P. Rose, 2003, *Money and capital market,* 8th edition, McGraw-Hill Irwin, Boston, str.2 [14]Erić D., Đukić M., 2012, *Finansijska tržišta u uslovima krize,* Institut ekonomskih nauka,Beogradska bankarska akademija, Fakultet za bankarstvo, osiguranje i finansije, Beograd, str.7

Financial system, it is understood cooperation solely with partners who perform activities permitted by Sharia and in the manner attributed by Sharia.

• Complexity - Financial systems are extremely complex and consist of numerous elements, primarily institutions, instruments, markets, etc. In addition, the financial system consists of a large number of subsystems, which are fiscal, monetary, and for this dissertation is the most significant, banking subsystem.

By combining a large number of institutions and participants (central bank, commercial banks, pension funds, etc.), financial markets (money and equity markets) and financial instruments (equity and debt instruments), the financial system becomes a complex economic phenomenon. The most important elements of the financial system are:[15]

• Financial markets;

• Financial institutions;

• Financial instruments.

Peter Rose talks about the seven most important functions of each financial system: 16

1. Savings function - The developed financial system offers many savings channels, while in countries with poorly developed financial systems, most of the savings remain outside formal channels, leading to slow economic development.

2. Welfare functions - It means preserving and enhancing well-being. If, for example, we list a foundation that inherits from an unknown benefactor, millions of dollars, that there is no developed financial system, most of that wealth would be spent very quickly. However, with developed financial instruments and markets, many alternatives appear, and one of them, for example, is investing in long-term government bonds. The goal of the investment is to preserve the real value of money, as well as its magnification over time.

3. Liquidity Function - Liquidity in this case implies the possibility of rapidly converting money into financial instruments.

4. Credit Function - This is an extremely important function of financial systems, both conventional and Islamic financial systems, with some crucial differences between these two categories. Credit function implies the possibility for participants in financial systems to obtain in the certain life situations the necessary financial means that are necessary for achieving their goals. This function is based on, we can freely say the key difference between the conventional and Islamic financial and banking system, that is, the lack of interest in Islamic banking.

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[15] Erić D., Đukić M., 2012, Financial markets in crisis conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.7
[16] P. Rose, 2003, Money and capital market, 8th edition, McGraw-Hill Irwin, Boston, p.10

5. Payment function - Modern financial systems offer alternative cash payment, such as checks, credit and payment cards, etc.

6. Risk protection function - There are financial institutions whose core business is providing risk-averse services, and some of them are insurance, as well as hedging activities in financial markets.

7. Macroeconomic Function - Financial systems are one of the measures of economic policy by which state authorities achieve macroeconomic goals.

8. Transfer resources through time and space - This function is most effective to explain by example, and it can be simple, a bank in the UK can invest in Switzerland or Belgium.

9. Provision of information - It implies an equal opportunity for all market participants to receive the information under the same conditions.

10. Creating Money - This function is performed in certain system segments.

Elements of the Financial System

Different market forms are found everywhere around us in our everyday environment. We can also call the market a local store in our settlement, market or tailor's salon. We distinguish two basic forms of the market, which are:

1. Market factors of production (land, labor, knowledge.); [17]

2. Market of finished products and services.

The market of factors has a greater significance for the national community than the market for finished products, and it is very similar to the situation with the financial market. When we look at the financial market, we can define it as a market where assets are transferred from an entity that has a surplus of funds to an entity whose assets are missing. They have a significant impact on boosting economic efficiency by channeling funds from economic trans actors that do not use them for productive purposes to those who do it.

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[17]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.14

The financial market, as well as every market, is a public place where products and services are bought and sold directly, or through intermediaries.[18]

The financial market enables the best allocation of limited and scarce resources, which should lead to the most efficient way of meeting demand for them. Transactions in this market lead to the creation of different prices, one of them being the interest rate, as a forbidden component within Islamic banking, then the exchange rate, as well as the prices of securities. Rigorous understanding of the concept of the financial market is associated with a specific place, time, space and way of functioning. In this case, we are talking about the stock market, that is, the stock market. On the other hand, a broader understanding of the concept of the financial market is related to all other outlets outside the stock market. In these two cases we distinguish between stock exchange and out-of-trade. We can call the financial market perfect exclusively in theory (Perfect Market), because in practice it is an absolutely imperfect market. A perfect market would involve a market where a large number of buyers and sellers are active, which are relatively small, and therefore have to accept the price set up (Price takers). Some factors that would form the perfect market are: 20

• There are no transaction costs, taxes, etc.• Participants accept established prices;

• All participants have the perfect information; • There are no other obstacles that occur between supply and demand.

 By contrast, the financial market has a number of factors that make it imperfect, of which the most important are: [20]

• Provision of commissions and fees to intermediaries; • the existence of the so-called quotation ranges for leaders (Bid-ask spread); • Clearing costs; • Taxes and other charges;

• Unequal distribution of information; • Costs of obtaining relevant information;

• Different administrative restrictions on trade; • Different other regulatory provisions that restrict the freedom of buyers and sellers, etc.

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[18]J.M. Samuels, F.M. Wilkes & R.E. Brayshaw, 1991., *Management of Company Finance,*5th edition, Chapman & Hall, London, str.225

[19]Erić D., Đukić M., 2012, *Finansijska tržišta u uslovima krize,* Institut ekonomskih nauka,Beogradska bankarska akademija, Fakultet za bankarstvo, osiguranje i finansije, Beograd, str.14-15

[20]Erić D., Đukić M., 2012, *Finansijska tržišta u uslovima krize,* Institut ekonomskih nauka,Beogradska bankarska akademija, Fakultet za bankarstvo, osiguranje i finansije, Beograd, str.14-15

The theory and practice recognize more divisions of financial markets by different criteria. The basic division of financial markets is from the aspect of the location, which is: [21]

• Local; • National; • International.

From the aspect of the national economy, financial markets are divided into: [22]

• Internal; • External.

From the aspect of the type of financial instruments to be traded, shares are divided into: [23]

Debt instruments markets;

• Equity instruments markets; • Financial derivatives markets.

From the time of payment and delivery we distinguish:[24]

• Prompt markets; • Market markets.

Depending on the maturity of the financial instruments traded, there are the following types of markets: [25]

• Short-term financial markets; • Long-term financial markets.

From the aspect of the nature of the transaction we distinguish:[26]

• Primary markets; • Secondary markets.

According to the criterion of methods and places of performance of traffic we distinguish:[27]

• Stock markets;

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[21]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.43

[22]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.43

[23]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.44

[23]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p45

[24]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.46

[25] Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.47

[26] Erić D., Đukić M., 2012, *Finansijska tržišta u uslovima krize,* Institut ekonomskih nauka,Beogradska bankarska akademija, Fakultet za bankarstvo, osiguranje i finansije, Beograd, str.48

Off-exchange market

Financial instruments are the next element of the financial system. They are the very subject of trading in financial markets. To a large extent, they point to the level of development of the entire financial system of a country. On the other hand, their underdevelopment and the deficiencies that characterize them are the main causes of the underdevelopment of a country's financial system. Financial assets are synonymous with financial instruments and can be defined as intangible assets, assets whose value are not directly dependent on the value of physical assets, but should be regarded as the right to future income. These are different cash and financial instruments that can be traded on financial markets. In contrast to financial assets, there are financial liabilities that we associate with entities that are issuers of financial instruments.

Accordingly, the issuer's financial liabilities are binding on certain payments in the future to the owners of the instruments. The most important financial and financial instruments are:[27]

• **Securities;**
• **Deposits;**
• **Claims;**
• **Financial rights;**
• **Cash money;**
• **Foreign exchange and exchange rates;**
• **Gold and precious metals.**

Securities (Securities) are a financial instrument that can be said to be the most numerous and most developed. These are written certificates that give the owner certain rights, without the right to transfer to another person, unless the ownership of the security is transferred to another person. Today, securities are issued without material form, while their records of issuance and ownership are managed by an institution called the Central Securities Depository. There are several criteria on the basis of which we can make securities dividends, which are:[28]

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[27] Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.17
[28] Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.17

• Maturity, in this case we distinguish between short-term, mid-term and long-term securities;
• Issuer, where we distinguish state and securities issued by economic organizations;
• Place of broadcasting, then we distinguish domestic and foreign securities.

Securities in the narrow sense are investment instruments that are at risk of investment, which is offset by potential earnings. In this sense, securities are shares, bonds, bills ... These securities are an expression of an action (action) or credit (bond) arrangement. They are subject to purchase and sale on an organized, specialized capital market, or in the money market. In a broader sense, securities are also considered instruments of credit and payment instruments, such as checks, bills, cones, warehouses, etc.

Elements that each security has to have defined by the Securities Act. Essential elements are those that have any securities of value:

• The name (eg the action) and the type of security (for example, the priority action);

• Information on the issuer (name and head office);

• Owner information.

The paper may read: in the name or on the bearer. If it is in the name, it will write on the paper the name and surname of the person who exercises the right contained in the paper. If the issuer is entitled to realize the person who shows it, he / she shall bring to the market a note of value;

• Obligation of the issuer (which will be the right of the buyer);

• Place and date of issue and serial number;

• Signature of the issuer (signature facsimile when broadcast in the series).

　　　　Other elements are not irrelevant, but are different for all types of securities, and they are clearly specified by the Securities Act.

Table 2: Financial Markets and Indices

Money Market Bond Market
Short-term government bonds　　　Long-term and medium-term

　　　　　　　　　　　　　　　　　government bonds
Deposit Certificates　　　　　　　Debt Federal Agencies
Commercial bills　　　　　　　　　Municipal bonds
Banking Accepts　　　　　　　　　Corporate Bonds
Eurodollars　　　　　　　　　　　Mortgage-Backed Securities
Repo and reverse　　　　　　　Repo Markets
Federal funds　　　　　　　　　Ordinary shares
Brokerage short-term loans　　　Preferential shares
Indices　　　　　　　　　　　　Financial derivatives market
Daw Jones Average　　　　　　　Options
Standard & Poor's Indices　　　　Future and Forward
Bond Market Indicators　　　　　　Swaps
International Indices

Source: Bodie Z., Kane A., Marcus A.J., Fundamentals of Investment, Sixth Edition

　　　Financial participants are numerous in the financial market. There are several divisions of financial actors, which are the following divisions:

I. Non-financial and financial participants

II. Issuers and investors

III. Hedges and speculators

Non-financial participants are those participants who perform their core business so that they are not connected with the financial system or operations in the financial markets. A good example from the practice for a non-financial participant is a company that produces certain ones products (Factory of tractor tires). Non-financial participants can be further considered as:

• Public sector;
• Sector of economy and non-business;
• Population sector;
• Entities from abroad.

The public sector implies a state, its organs, organizations, agencies or state-owned enterprises. The public sector also appears on the supply side as well as on the demand side. The country's possible lack of financial resources, which often occurs in the conditions of the global crisis, regulates in one of the following ways, by printing money, by increasing taxes and by issuing securities[29].

The sector of economy and non-business consists of economic and non-governmental organizations, of different ownership forms, which belong to almost all economic sectors.

The household sector relates to family households. It is the most numerous of all four listed sectors. The structure of this sector is very diverse, it can include families of different sizes and structures, from single-member to multi-member families. Stan sting invests mainly in one of the following two forms of real assets:

• Real Estate (land, houses, flats, business premises);

• Other physical goods (cars, furniture, home appliances).

Entities from abroad are participants who are not residents of the country in whose financial market they participate and do business.

Financial participants are those participants that link the supply and demand in the financial market and one of their basic roles is to enable the smooth functioning of the financial system by transferring funds in a quick and efficient way. They essentially play the role of financial intermediation and are located among all the other participants - the population, the economy, the public sector and foreign subjects. These are primarily brokers, dealers and investment bankers. The most significant distribution of financial participants within a country is[30]:

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[29]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.20-25
[30]Erić D., Đukić M., 2012, Financial Markets in Crisis Conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.23

2) Deposit financial institutions;

a) banks;
b) savings banks;

c) savings and credit associations;
d) credit unions, etc.
3) Investment-type institutions - investment companies and funds;

4) Contracting financial institutions;
a) insurance companies;
b) Pension funds.
5) Other financial institutions.
a) funds, foundations, endowments;
b) financial companies;
c) brokerage houses;
d) companies for the provision of initial capital;
e) rating agency, financial information service company, financial advisers, etc.

The issuers are those entities in the financial markets that represent the demand side. These are participants with a lack of funds who are trying to compensate for the shortage of securities (HoV). These can be government bonds, short-term or long-term bonds, etc. Investors are a financial market participant who has surplus funds that he / she wants to invest in order to realize certain investment projects. Investor's dilemma on individual and institutional.

Hedges and speculators are a special category of financial players on the market. Hedges are entities that perform various activities in the financial market with the primary objective of risk protection. Risks occurring in financial markets are numerous, and some of them are the volatility of the prices of securities, interest rate changes, foreign exchange rate changes, etc. On the other hand, speculators have the core business to earn money based on price changes. So, they are trying to earn as soon as possible, and this is achieved in proportion to the increase in risk.

The Regulation of Modern Financial Markets

After a major economic crisis and fractures in stock exchanges in which many investors lost money due to market volatility, but also because of scams that were easily possible on the unregulated and unregulated market, in 1933 a Securities and Exchange Commission (Securities and Exchange Commission) Exchange Commission, SEC). After that, the basic act of this institution, the Securities Exchange Act, was adopted in 1934. This document sets out fundamental definitions and rules of dealing with securities, defines the role of institutions and regulates the behavior of participants in the financial market. The two main objectives of this act were:

• To provide investors with adequate and accurate information related to securities offered for sale;
• to prevent fraud and manipulation in the sale of securities.

These two essential requirements have become the universal basis for the HOV regulation up to the present day. The last significant change took place in 1997 when supplemented by regulation of electronic trading systems and so-called independent trading systems. However, the financial market was rapidly evolving. Derivatives and hedge funds have emerged that have achieved rapid and enormous expansion without being covered by regulation and market surveillance. After the major economic crisis in 2008, governments and global financial institutions are working intensively to improve regulation, primarily to reduce risk and increase regulation of securities transactions, primarily derivatives and hedge funds.

Unlike the US, the countries of the European Union are more oriented towards financing through bank loans than to financing the capital market by issuing equity and debt papers. The degree of compliance of securities regulations is lower than in the case of banking regulations. European countries are in fact a separate jurisdiction both for banking and for investment services. The Directives are the basis for national legislation to be fully harmonized. But in practice, the degree of compliance is far greater in banking. Unlike the European Central Bank, which functions as a single body, therefore, there is EUROFED as a counterpart to the American Fed, but in the field of regulating business with Securities does not have a single European Union Commission that would regulate securities transactions, but it is working on their greater coordination and approximation. This means that there is no European SEC (Securities Exchange Commission), as in the United States.

MIFID (Markets in Financial Instruments Directive) [31] is a document that completely regulates financial markets in the segment of securities transactions and entered into force on November 2007, replacing the Financial Services Directive (ISD). The Directive applies to investment firms and organized markets, as well as to credit institutions licensed under Directive 2000/12 / EC when providing some investment services or participating in investment activities. The question arises what is the essence of this Directive, and the answers are as follows:

• Improving regulations in the field of financial services by enabling Member States to efficiently operate the so-called unique European passport, or business in all countries of the Union without any obstacles and limitations;

• Creating a clear regulatory framework for the execution of transactions by the stock exchanges, as well as other trading systems, as well as for the operations of investment firms. The degree of transparency, as well as competition among market participants, traditional stock exchanges and alternative trading systems, is increasing, which should lead to a reduction in costs for clients. On the basis of these changes, investors should invest more easily in other member states, with greater security, relieved of a large number of different regulations.

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[31]Jeremić Z., 2012 Financial Markets and Financial Brokers, University Singidunum, Belgrade, p.155-158

Figure 1: Definitions of Concepts Relevant to the Financial Market According to the MIFID directive

- *Investment firm* (Investiciona kompanija) - pravno lice čija je delatnost profesionalno obavljanje investicionih aktivnosti i pružanje usluga za treća lica.
- *Investment advice* (Investicioni saveti) - Pružanje ličnih preporuka klijentu ili na zahtev klijenta ili na inicijativu investicione firme.
- *Market Maker* - Pojam označava lice koje posluje na finansijskom tržištu kontinuirano, za svoj račun, kupujući i prodajući određene finansijske instrumente.
- *Professional Client* - (Profesionalni klijent) je klijent koji ispunjava određene kriterijume koji ga kvalifikuju kao takvog.⁸
- *Retail Client* - klijent koji ne spada u grupu profesionalnih klijenata.
- *Market Operator* - Lice ili lica koja upravljaju poslovanjem organizovanog tržišta. To lice može biti i samo organizovano tržište.
- *Regulated market* (Organizovano tržište) - znači multilateralni sistem koji vodi i kojim upravlja *market operator*, koji povezuje kupoprodajne interese trećih strana i finansijske instrumente u skladu sa pravilima Direktive koja se odnose na organizovana tržišta. To povezivanje ponude i tražnje se odvija u okviru sistema i u skladu sa pravilima pristupa sistemu koja su ista za sve potencijalne učesnike.
- *Multilateral trading facility MTF* - Predstavlja multilateralni sistem kojim upravlja investiciona firma ili market operator, a koji povezuje mnogobrojne kupoprodajne interese trećih strana sa finansijskim instrumentima u skladu sa pravilima Direktive koja se odnose na MTF.
- *Limit order* (Limit nalog) - je nalog za kupovinu ili prodaju finansijskog instrumenta koji sadrži ograničenje u smislu cene ili količine.
- *Transferable securities* (Transferabilne hartije od vrednosti) - označava klase hartija od vrednosti čija se cena određuje na tržištu kapitala.
- *Money-market instruments* (Instrumenti novčanog tržišta) - su HOV koje su uobičajene na novčanom tržištu, kao blagajnički i trezorski zapisi, certifikati o depozitu, komercijalni zapisi.
- *Undertakings in Collective Investments in Transferable Securities* (*UCITS*) - kompanije koje upravljaju kolektivnim investicionim šemama u skladu sa direktivom 85/611/EEC.
- *Qualified holding* (Kvalifikovano učešće) - znači direktno ili indirektno vlasništvo nad delom investicione firme koji je veći od 10% kapitala ili upravljačkih prava i koje obezbeđuje značajan uticaj na menadžment firme.
- *Close links* (Bliske veze, povezana lica) - je situacija u kojoj su dva ili više lica povezana zajedničkim vlasništvom u investicionoj firmi koje obezbeđuje 20% ili više vlasništva ili upravljačkih prava. Takodje to može značiti i situaciju u kojoj postoji odnos između subsidiarnog predstavništva i lica koje je osnivač tog predstavništva.

Source: Official Journal of European Union; www.fisd.net/mdregulation/MiFID

Professor Columbus University in New York, Joseph Stieglitz[32], believes that the state has four basic roles through its authorities in regulating financial markets:

1. Protection of all participants - which can be accomplished in several ways:

• ensuring the necessary level of solvency and liquidity of financial institutions;
• securing deposits and state guarantees;

• By adopting regulations that oblige all participants in financial markets to publicly disclose all relevant information;

• Regulating and penalizing unauthorized actions, such as confidential information based on trade.

2. Maintaining macroeconomic stability - through the regulation of financial markets, the state wants to ensure price stability, foreign exchange rate and other macroeconomic parameters, creating conditions for sustainable economic growth and development.

3. Maintaining the desired level of competitiveness - through its institutions, states can achieve the desired level of competition in certain segments of the financial markets. If it suits her, she can monopolize the benefits of certain institutions. Of course, on the other hand, the state can encourage a higher level of competition among participants in financial markets.

4. Maintaining the solvency of certain financial institutions, for example banks, which also ensures the stability of the financial system, and hence the financial markets themselves. There are various ways to do this, and some of them are: through the reserve requirement mechanism, deposit insurance, open market operations, various legal regulations, and the like.

Following the negative consequences of the first wave of the global crisis, the European Parliament called for further changes in the European financial system. It was in the direction of greater EU integration of financial space, risk reduction, strengthening of unity and increasing transparency. Bearing in mind everything that has been happening in the past few years, all the changes within the EU financial markets can be classified into three basic directions[33]:

• Adoption of new regulations;
• Creation of new regulatory bodies;
• Raising ethical standards.

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[32]Stiglitz J., 1993., *Financial System for Eastern Europe's Emerging Democracies,* Occasional Papers No. 38, ICS Press, San Francisco, str.12-16
[33]Erić D., Stošić I., 2012., *Development of European Financial System: Challenges for the Balkan Countries Integration Process,* Coimbra

The new regulation implies that, unlike the US, where there is a comprehensive capital market and a single financial system that is more market-oriented, the EU is dominated by bank-centric financial systems and there are far greater differences between individual countries. Changes in EU regulations regarding the functioning of financial markets have gone towards

the creation of a so-called unique set of regulations that would replace the problem of the great diversity of regulations between different member states. Instead of the current system of directing local regulators through directives, a new approach is suggested through uniform rules and a greater commitment in their application and respect. Some of the current challenges in the regulation of modern European financial systems are related to the following issues:

• less directives, more regulations and unified rules, primarily in order to further unify the single European capital market;
• Increasing transparency, as a priority goal for all institutions and participants;
• Reducing risk in market structures;
• Improving institutional frameworks - creating a safer legal environment;
• better coordination of the work of regulatory bodies and the simultaneous implementation of uniform rules in all countries.

Creation of new regulatory bodies and institutions - The Lamfalussy process did not include the creation of new regulations, but also new regulatory bodies. He also caused some controversy in the relations between the highest European institutions, above all the Council of Europe and the European Parliament. The operation of the first wave of the global crisis has led to the decision to form three important European institutions in 2010, which were supposed to contribute to the further unification of the European financial system. Those are:

• European Banking Authority EBA;
• European Securities and Markets Authority ESMA;
• European Insurance and Occupational Pension Authority EIOPA.

The new regulation implies that, unlike the US, where there is a comprehensive capital market and a single financial system that is more market-oriented, the EU is dominated by bank-centric financial systems and there are far greater differences between individual countries. Changes in EU regulations regarding the functioning of financial markets have gone towards the creation of a so-called unique set of regulations that would replace the problem of the great diversity of regulations between different member states. Instead of the current system of directing local regulators through directives, a new approach is suggested through uniform rules and a greater commitment in their application and respect. Some of the current challenges in the regulation of modern European financial systems are related to the following issues:

Raising ethical standards - a word that is certainly common to many financial and economic crises is greed. It would be very difficult and not to be omitted as one of the potential causes that led to the outbreak of the first wave of the global crisis. In the search for ways to build an efficient and transparent financial system, not only is regulation and regulatory bodies insufficient. It is necessary to raise the level of business ethics in the financial markets. It should be borne in mind that there are at least three levels of ethical action:

• The level of the whole market;

• The level of financial institutions;
• Individual level, i.e. every employee in the financial services industry.

Central Banks and Deposit Financial Institutions

The Central Bank is an independent and unique monetary system emission institution, responsible for monetary policy, currency stability and financial discipline, and for performing other tasks determined by law. The Central Bank may provide the realization of its functions with the help of monetary and credit regulation instruments, including: discount rate, mandatory reserve, determination of minimum liquidity reserves, purchase and sale of securities, participation in foreign exchange transactions, limitation of placements, and the like. The central bank is the most important institution in the financial system. She is not an ordinary participant in financial markets, but has a regulatory role. Its role is significant in all segments of the financial markets, and especially in the money segment, where it determines the level of money supply and the amount of short-term interest rates. The central role of the central bank is to protect other participants in the financial market. By issuing high quality securities and open market operations, the central bank contributes to the development of financial markets. It is responsible for conducting monetary policy, which implies the management of interest rates and the amount of money in circulation.

The stability of prices, or the stability of the purchasing power of the national currency, is, viewed in the long run, the main task of the central bank in the countries of the market economy. This task is identical, regardless of the country in question. To ensure a reproductive process with sufficient amount of money, without damaging the national currency, and that the process itself is at stake, is what the central bank has to do. In general, the economic sovereignty of a country includes monetary sovereignty, which is reflected in the appropriate autonomous monetary and foreign exchange system. Central Bank must influence the dynamization, direction and stabilization of the overall economic activity in the country, and also must maintain relations with international financial organizations, especially with the IMF and the World Bank Group.

As a rule, it does not have direct relations with the non-banking sector, except for the country for which it performs certain financial activities, but that is why the central bank's policies and activities affect all sectors, primarily the economic life of the country. From the moment when global crises and recessions began, the role of the central bank became more significant. The role of the central bank is to regulate the level of money and credit in the macro-system, as well as determine the growth rates of these aggregates in accordance with the optimal rate of growth of the social product, the adequate rate of employees, the relative stability of the prices and the balance of payments.

In almost all countries, the financial system is strictly regulated. The government regulates financial markets for several reasons. Some of them are: - Increasing transparency of

information, - Financial system stability, - Increasing monetary policy control. Risky companies, concealed losers, immoral individuals can be motivated to sell securities to unsafe investors. In this way, honest investors refuse to take part in financial markets. It is precisely the state regulation that can reduce these problems and increase the efficiency of the market by increasing the quality information available to the investor. That is why the government introduces regulation to protect the public and the economy from such disastrous influences. The State Commission for Banks and Insurance Institutions, as well as the currency control agencies, implements strict rules that determine who, and who does not, establish the institution of a financial intermediary. They must obtain a state license from the state. Therefore, it is necessary to work on subjects of unimportant reputation and large initial capital. The disclosure of information is regulated by the introduction of a financial reporting obligation for financial intermediaries. Their accounting and books must be guided by strictly defined principles; their books are subject to periodic supervision, with the obligation that certain information must always be available to the public. Investment and activity constraints relate to the activity of financial intermediaries, as well as the property they are allowed to keep. Thus, commercial banking should not deal with risky ventures that would be allowed to investment banks. Uncontrolled competition can lead to bankruptcy of financial intermediaries. Therefore, the state sets restrictive rules for opening new business locations, the origin of equity, limitation of business activities, etc. One of the regulations is the determination of the obligatory reserve according to which all depository institutions are obliged to keep the prescribed part of the deposit with the central bank.

At the time of the existence of the golden standard, until the early 1970s, this function was not a very big problem. After that, the role of the central bank gets important. With the emergence of global foreign exchange and financial markets, and increased monetary and fiscal policy responsibilities, the importance of gold as reserves of central banks is considerably diminished. Whereas in 1980 gold accounted for more than 50% of reserves, in 1998 it amounted to only 10% of total central bank reserves. One of the important reasons for the reduction in the proportion of gold after the seventies is the collapse of the gold standard and the IMF's decision to abolish the gold currency bond. The stability of each economy relies, to a large extent, on adequate monetary policy. The task of monetary policy is to determine the necessary amount of money to be in circulation. It is this task that is set before the central bank, which influences the amount of money in circulation by various instruments and mechanisms. The Central Bank regulates the volume of money and loans in circulation, keeping it at the level necessary for the smooth functioning of social reproduction and at the level of the necessary preservation of the stability of money. The Central Bank monitors the implementation of the monetary and credit policy set by the growth of monetary aggregates. In the broadest sense, monetary aggregates represent money and other similar financial assets, the degree of conversion being different. The Central Bank defines monetary aggregates and monitors the monetary developments according to the methodology. The Central Bank is in charge of monitoring the exchange rate of the domestic currency and possibly responding in the event of a possible negative effect of the foreign exchange rate on the economy. The central bank performs course protection through foreign exchange reserves, which represent reserves of

money held by a central bank in foreign currencies. In doing so, it should be borne in mind that the main goal of holding foreign exchange reserves is to minimize the risk, not the realization of profit, and therefore the foreign currency reserves of the country are held only in currencies and securities with minimal risk.

The general importance, place and role of the central bank, both in monetary and in general economic theory and in politics, have recently become a matter of great public interest, since the central bank has an extremely important role in the monetary, banking and economic system of a country. In fulfilling its role in regulating monetary and financial and economic flows, the central bank is an irreplaceable institution in every national economy, since it takes care of achieving goals that are of particular socio-economic importance[34].

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[34]Šmigić Miladinović J., 2016., Significance and role of the central bank in creating a sound monetary policy and investment policy, High Economic School of Vocational Studies, Vienna

Federal Reserve System

The Federal Reserve System is probably the most unusual structure of all central banks in the world. The Federal Reserve System was established in 1913. By the twentieth century, the basic feature of American politics was the fear of centralized power. Such a fear of centralization was one of the reasons for the resistance to the founding of a central bank in America. The other reason was the long-standing distrust of the American public with such a connection, whose symbol was exactly the central bank. The public was openly showing a negative attitude towards the founding of the central bank, which resulted in the collapse of the first two central banking experiments aimed at supervising the banking system: the First Bank of the United States collapsed in 1811 and the authority to work Second Bank of United States

expired in 1836 and not renewed because in 1832 President Andrew Jackson vetoed his renewal. The ban on the renewal of the Second Bank of the United States license in 1836 caused a serious problem to the US financial markets because there was no longer a lender of the ultimate instance, that is, a central bank that would provide the banking system with the means to prevent "banking panic". That is why, throughout the 19th century and early 20th centuries, banking panics became frequent throughout the United States every twenty years, which culminated in panic in 1907. This panic caused the collapse of a huge number of banks and so many losses of depositors that the public finally realized that the central bank needed to prevent future panic.

Because of the resistance of the American public towards banks and the centralized government, there has been strong opposition to the establishment of a central bank, such as the Bank of England. It was generally feared that Wall Street giants would be in a position to manipulate such an institution and control the economy, and that federal management of the central bank would probably involve too much government interference in the operation of private banks. There were serious disagreements about whether the central bank should be a private bank or a government institution. There was a compromise on the controversy over this. In 1913 the Congress adopted the Federal Reserve Act and, as it seems, included a whole series of regulations, and based on that law, a Federal Reserve System was established with 12 regional Federal Reserve banks.

The goal of the Federal Reserve Act was to create such a formal structure of the Federal Reserve System, based on which the regions could be distributed between the private sector and the government, as well as between bankers, entrepreneurs and the public. Such the initial distribution of power led to the development of the Federal Reserve System into a system that includes the following issuers:

• **Federal Reserve Banks**;
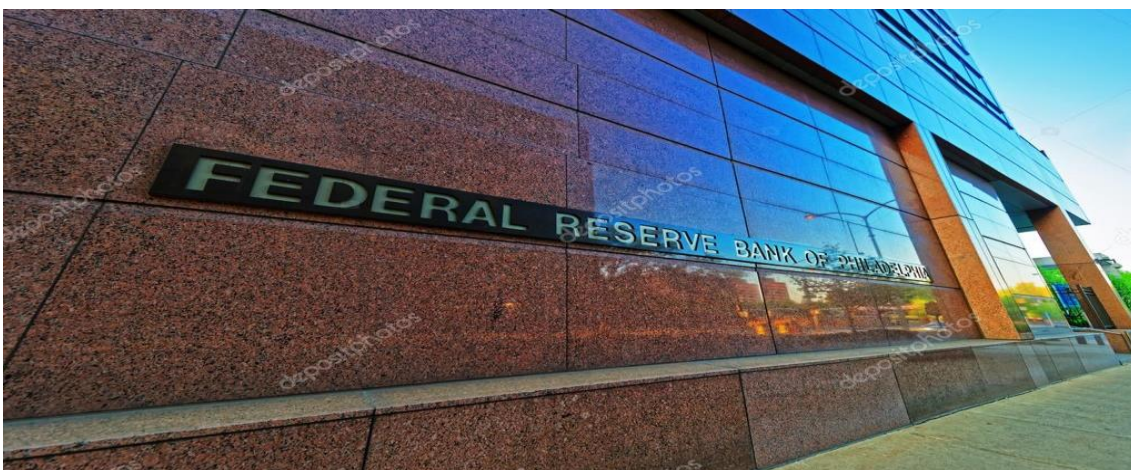
• Board of Governors of the Federal Reserve System;
• Federal commission for open market operations.

Today, the Fed is the largest and most profitable private corporation in the world that manages assets of $ 4.3 trillion (data August 2016), while its last year's profit amounted to $ 100.2 billion. Although the majority of their profits are transferred to the Ministry of Finance, shareholders of this corporation have guaranteed dividends on shares held by them, in the amount of 6% a year, although the FED statute states that this institution is non-profit. The Federal Reserve System basically consists of twelve regional Federal Reserve banks, delegated by responsible persons within a management system composed of various FED bodies. The President and Vice-President of the Board of Directors are appointed by the President of the United States, although there are mechanisms of nominal control of labor by the federal state, essentially the monetary policy of this country is led by representatives of shareholders - private banks by delegation of persons to the representative bodies and bodies of the bank. The biggest influence and power has the New York Fed, which, along with four other regional Feds, has a guaranteed presidential position and apparently the biggest influence. Of particular interest is the position of the Fed in the state control system, more precisely - in practice - the state administrative and judicial system does not recognize the FED system of regional banks as part of the state apparatus, but as a private corporation. By the 2009 New York District Court's opinion, in the Bloomberg proceedings against the Board of Directors of FED 2009, the Court concluded that, although the Board of Directors represents a federal agency subject to the jurisdiction of the federal act on the availability of information, the New York Fed and other regional banks constitute private corporations and are not subject to state restrictions or the law itself, although at that moment the New York Fed was managing $ 1.7 trillion emergency loan program.

The Federal Reserve System is a central bank[35] of the United States and performs five general functions to promote the efficient operation of the American economy and, in general, to the public interest, such as:

• Implements the monetary policy of the state to promote maximum employment, stable prices and moderate long-term interest rates in the US economy;

Promotes the stability of the financial system and seeks to minimize and retain systemic risks through active monitoring and engagement in the US and abroad; • Promote the safety and soundness of individual financial institutions and monitor their impact on the financial system as a whole;

• Encourages the security and efficiency of the payment and settlement system through services to the banking industry and the US government that enable transactions and payments in the United States;

• Promotes consumer protection and community development through consumer surveillance and testing, research and analysis of new consumer issues and trends, community economic development activities and administration of consumer laws and regulations.

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[35]Mishkin F., 2006, Monetary Economics, Banking and Financial Markets, Data Status, Belgrade, p.336

Each of the 12 Federal Reserve Areas has a central bank, which can have branches in other cities in the region. When considering assets, the three largest central banks are in New York, Chicago and San Francisco. These three banks together have more than 50% of the assets of the Federal Reserve System. Each regional central bank is a semi-public, or quasi-state institution, and is owned by a part of the state, part of the private commercial banks of certain regions. These member banks buy shares in their regional central bank, and the dividends of these shares are legally limited to 6% per annum. The member banks elect six directors for each regional bank, while the Board of Governors selects three other directors. These nine directors appoint a president of the bank together with the approval of the Governing Council[36].

The directors of the regional bank are classified into three categories A, B and C. Three A directors, elected by member banks, are professional bankers, three B directors, also elected by member banks, are leaders in the industrial, agricultural sector and three directors, appointed by the Board of Governors and representing public interests, are not permitted to be a functionary, employee or shareholder of a bank.

The roles of the 12 regional central banks are as follows:
• clearing checks;
• Issue of banknotes;
Withdrawal of damaged banknotes from circulation;

• Granting escort loans to banks in their region;
• Evaluation of proposals for merging banks and banks' requests for business expansion;
• Link between the business community and the Federal Reserve System;
• Supervision of banking holding companies and banks with member state ownership;
• Collecting data regarding local conditions and business situation;
• Your staff, i.e. professional economists use for research in relation to the implementation of monetary policy.

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[36]Mishkin F., 2006, Monetary Economics, Banking and Financial Markets, Data Status, Belgrade, p.339

The Federal Reserve Bank in New York has a special role in the Federal Reserve System for several reasons. First, in its region there are many of the largest commercial banks in the United States, and their financial stability, security and good business are a prerequisite for the vitality of the US financial system. The Federal Reserve Bank in New York supervises a banking holding company and state-owned banks in its region, making it the supervisor of the

most important financial institutions in the US financial system. Given the responsibility of this kind, it is not surprising that the Supervision Department is one of the largest New York Fed's departments, as well as the most convincingly largest oversight unit in the Federal Reserve System.

Another reason why the New York Fed has a special role is its active engagement in bond markets and foreign exchange markets. The New York Fed is also the headquarters of the Open Market Committee, which manages open market operations, the purchase and sale of bonds, which in turn determine the amount of reserves in the banking system. Due to such an engagement in the securities market, which is being broadcast by the Ministry of Finance, as well as because of its location, that is, in its immediate environment, both the New York and the US Stock Exchange, representatives of the Federal Reserve Bank in New York are in constant contact with the most important domestic financial markets in USA.

The third reason for such a significance of the Federal Reserve Bank in New York is that it is the only Federal Reserve Bank that is a member of the Bank for International Settlements. Therefore, the President of the New York Fed, together with the Chairman of the Board of Governors, represents the Federal Reserve System at regular monthly meetings with other bankers of the main central banks in the Bank for International Settlements.

Regardless of the high degree of FED's institutional independence from the executive and legislative authorities, the informal influence, primarily the US President and the Congress, is always present to a lesser or greater extent. As a means of influence, the president uses "moral persuasion," because it is hard to expect that the first man of the Fed will be ready to follow a course in the monetary sphere contrary to the views of the president, who is accountable to the entire nation for the economic performance of the country. The attempt by the Chairman of the Board of Governors to follow a monetary policy course that is contrary to the economic and financial goals and plans of the president of the state would result in a "voluntary" withdrawal of the Chairman of the Board of Governors from this function. Maintaining good relations with the president is desirable for his support when adopting or abolishing certain laws in the Congress, which relate to the sphere of money and credit.

Table 3: Feds Political Independence

Question	1913	1935	1992	2008
The governor has not been appointed by the Government				
The governor was appointed for a period longer	*	*		

than five years

Not all Board members have been appointed by the government				
The board is set for a period longer than five years	*	*	*	*
But the obligatory participation of government representatives in the Board		*	*	*
No valid approval is required for a particular monetary policy			*	*
Legal obligation of the bank to create monetary stability			*	*
a legal measure to strengthen the central bank's position in conflicts with the government			*	*
Total index of political independence	**2**	**3**	**5**	**5**

Source: Milosavljevic, B. (2010). Independence of the central bank - an example of the Fed of the European Central Bank and the Swiss Central Bank

Whenever there was a major disagreement over monetary policy carried out by the Fed, the debate about the justification of a degree of independence was intensified. In order to change the monetary policy agreed upon by the administration, two types of actions can be taken: to change FED legislation under the control of the Congress or the executive, and secondly, to exert pressure on FED on additional pressures, including the activation of the overall public opinion. Contrary to the possible influence of the President and the Congress, the Fed can in practice mobilize a strong lobby from private bankers to influence congressmen from individual districts to support the preservation of independence.

The strongest argument in favor of Federal Reserve independence is in fact the view that the Fed's exposure to higher political pressures would also entail inflationary problems in monetary policy. Many researchers believe that politicians in democratic societies think in the short term because they are motivated by the desire to win in the next election. When it is their primary goal, they do not focus on long-term goals, such as promoting a stable price level. Instead, they are looking for short-term solutions to problems such as high unemployment and high interest rates, even if such short-term solutions also involve unwanted consequences in the future. For example, a high rate of growth in money supply may initially lead to falling interest rates, but also condition their increase later when inflation increases. Would the Federal Reserves, under the control of the Congress or the President, compare the policy of high growth in money supply when interest rates are high, even if such a policy ultimately leads to inflation and higher interest rates in the future? The advocates of the independent Federal Reserve give a positive answer to this question. They believe that a politically isolated Fed would be far more cautious about long-term goals and therefore take care of the stability of the dollar and the price level.

The placing of the Fed under the control of the president (that is, under the greater influence of the finance ministry) is also considered dangerous because the FED could be used to help finance the finance ministry's large budget deficits by buying a bond issued by that

ministry (US Treasury), the Ministry of Finance to "help" it can lead to higher inflationary problems in the economy. If it is independent, the Fed will resist the pressures of the finance ministry.

Another argument in favor of FED's independence is reflected in the fact that monetary policy control is too important to be left to politicians, or to those who have repeatedly shown lack of expertise in making important decisions and those of great economic importance, such as reducing the budget deficit or reforming the banking system. We can also present this argument as a principal - agent problem. Federal Reserves and Politicians are public agents (principals), and as we have already said, both politicians and the Fed are inclined to act in their own interests rather than in the public interest. The argument in favor of independence of the Federal Reserve thus indicates that the principal-agent is a bigger problem when it comes to politicians than when it comes to the Fed because politicians are less motivated to act in the public interest.

Like the ECB, and the Fed can, if so decided by monetary policy makers, control the total reserves of the banking system. The total reserves of the US banking system are covered by the balance sheet of the Fed, because FED decisions to buy state securities or the decision of banks to borrow funds from FED are respected in the balance sheet of the Fed. By controlling the total reserves of the US banking system, the Fed controls primary money (monetary a set of open market operations and interest rates when banks borrow in the case of short-term liquidity).

Therefore, the Fed has three important instruments of monetary policy available:
• targeted federal funds rate, which is the interest rate at which banks approve loans to each other in the banking reserve market and currently amount to 0.25% (the current target is 0-0.25%);
• Discount rate is the interest rate charged by Fed on loans granted to banks (currently 0.75%);
• Mandatory reserve (reserve requirement), the level of reserves that banks are obliged to hold or in cash or to deposit into the account with the FED.

European Central Bank (ECB)

The European Central Bank:

 Is a transnational institution that is in charge of European monetary policy. The seat of the European Central Bank is in Frankfurt, Germany. The European Central Bank (ECB) is a monetary authority of the highest level in the euro zone. It is an institution that is the issuer and legal guardian of a common European currency - the euro. It was established by the Maastricht Treaty in 1992 by which the national banks of the member states of the European Union renounced sovereignty in the conduct of monetary policy and delegated their powers to the Central Bank of the European Union. The main reason for its establishment was the creation of

a European Monetary Union with a single currency - the euro. The European Central Bank monitors the amount of money in circulation, manages the euro exchange rate, together with the central banks of the member states, maintains and manages official foreign exchange reserves. Its main goal is to maintain price stability and thus support the general economic policy of the EU, while the central bank system defines and implements monetary policy, performs foreign exchange operations, maintains and uses foreign currency reserves of member states and improves payment operations.

The European Central Bank manages the monetary union in cooperation with the national central banks within the European System of Central Banks, which also includes the central banks of the member states of the euro zone. The genesis of the European Monetary Union has run in several stages. Reflections on monetary integration were spurred by a series of events, first of all, the completion of the first phase of integration in 1968, the formation of the customs union and the need for further development of the integration process, turbulence of the dollar on the world economic and monetary scene, last but not least, the abandonment of fixed exchange rates and a significant deviation of exchange rates between the members of the European Union. In 1972, the Council of Ministers decided to continue the integration process in the direction of forming the European Monetary Union (EMU). The name of integration "monetary snake" reflects the essence of the form of monetary integration. It is an adaptable form of a fixed exchange rate. The basic exchange rate is the dollar, which represents the base.

The central banks of the countries of the European Union adhere to this exchange rate, but have the right to fluctuate their currencies with a deviation of plus or minus 2.5% from it.

The system was controlled by the European Monetary Cooperation Fund. Deviation of exchange rates of individual member states from the envisaged limits is regulated by the following forms of intervention:

1. coordination of monetary policies
2. Short-term loans secured by the fun
3. Coordinated action by Member States

As a last resort in the direction of maintaining such a fixed exchange rate, when all other measures have been exhausted, a temporary or permanent withdrawal from this arrangement was envisaged. The period of realization of the concept of integration was fraught with problems on the world economic stage, such as the oil crisis and the fall in the value of the dollar, which made it impossible to maintain such a defined fixed exchange rate. It is for these reasons that this system was abandoned. Further development of monetary integration is related to the creation of the European Monetary System (EMS). It was activated in 1979. Its main goals were: stabilization of exchange rates, monetary cooperation, approximation and harmonization of economic policies of members, further development of European integration, and stabilization of international monetary relations. The European Monetary System took over the achievements of the previous monetary regime. Countries that entered the European monetary system also fluctuated around one pre-common currency. It was no longer the dollar, but the European Currency Unit (EKI). It was basically a basket of currencies composed of the

currencies of the member countries of the European Monetary System. The value of the currency basket was obtained on the basis of the share of each member state in the total economy of the European Union. Calculation based on the share of each country in the gross domestic product and the share in the total mutual trade of the European Union. It was determined for a period of five years, and changes were possible if there was a deviation of 25% to the originally determined value. In this way, the ECI reflected the strength of each economy as a whole, as well as the change in its impact. The allowed fluctuations of the individual currency in relation to the eki were plus or minus 2.25%. .

In addition to the role of the central exchange rate and the deviation indicator, EKI also served as a means of settlement between central bank members, a part of international financial reserves, a financial transaction unit, and EU Statistics, due to its relative stability and as a unit of stock value, and accounting unit for interventions. Interventions in cases of deviation of individual member currencies from allowed into the European Monetary System were organized in the following way: all Member States were expected to undertake monetary and fiscal measures in order to approach the standard and to react in a spirit of international cooperation in a symmetrical way , buying and selling foreign currency. Also, the system of the European Monetary Fund for Cooperation (EMFC) is preserved. This fund represents the central monetary institution of the EU, which is governed by the governors of the central member banks. The Fund had significant means of intervention, primarily for the purpose of regulating the balance of payments difficulties of the members. Countries with a balance of payments surplus, if they were more involved in the funds of the fund, such as Germany, dominated the creation of the EMS policy. Finally, as an open option, there is a change in the value of eke, that is, the devaluation of the common currency. In the European monetary system, one-time adjustment of the competitiveness of national currencies was also applied.

If we look at the period from 1979 to 1990 in the functioning of the European monetary system, it can be said that he was successful. The main goal of the system: maintaining currency stability and low inflation (from 12.7% in 1988 to 4.3% in 1993) has been successfully implemented, leading to closer cooperation between central banks and the convergence of monetary policies. The Maastricht Treaty guarantees the independence of the monetary authority. The institutions of the European Union and the Member States must respect this principle and must not in any way affect the European Central Bank or the national central banks.

The Independence of the European Central Bank is based on:

• Institutional independence - national central banks must have a high degree of independence;
• operational independence - the ECB is completely free in the selection and implementation of monetary policy instruments;

• Personal independence - members of the Steering Committee have irrevocable and long-term mandates;

• Financial independence - independent national central banks have sole the capital of the ECB.

The Central Bank may be independent from the point of view of using the central bank's instruments and from the point of view of its preferences. The European Central Bank should not give loans to member states. As for preferences, the central bank has the power to choose different macroeconomic goals that differ from government instruments. Independence of the ECB implies that there is no direct influence of external factors in the decision-making process. In the work of the ECB, the essence of transparency is, in particular, availability of information to the public.

The Main tasks of the ECB are:

• Defining and implementing EU monetary policy;

• Managing foreign exchange transactions;

• Holding and managing foreign reserves of member states;

• Enabling the efficient functioning of payment transactions;

• Implementation of prudential supervision of credit institutions and the stability of the financial system.

The primary objective of the ECB is to maintain price stability. Price stability is defined as the annual increase in the harmonized Consumer Price Index (HICP) below 2%, while the lower limit is not explicitly stated although deflation is considered as a deviation from the objective of price stability. The monetary policy strategy is determined in the medium term. A reference aggregate, a monetary aggregate M3 was declared and a certain growth rate of 4.5% was recorded as a benchmark. In the ECB's monetary policy strategy, the ECB relies on a comprehensive risk analysis for price stability. The analysis is based on two complementary perspectives of price determinants and is called the two pillars of the monetary strategy.

The first "pillar" refers to the assessment of price determinants from short to medium term with a focus on real activity and financial conditions in the economy. This "pillar" takes into account the fact that the development of prices in this period is the result of the relationship between supply and demand of goods, services and factors of production, and in the terminology of the ECB it is called "economic analysis". The second "pillar", which is designated as "monetary analysis", is focused on the ratio of money and prices in the long run. For almost 15 years, the ECB has managed to ensure that the euro is a very stable currency. The average annual rate of inflation in the Eurozone is 1.97% for the entire period since the launch of the EMU. The prices are relatively stable; the volatility of inflation is considerably lower than that which countries had before the introduction of the euro.

"Monetary Analysis" mainly serves as a means of cross-checking monetary policy that arises from economic analyzes from the medium to long term. Other goals are supporting the Union's

economic policies, sustainable growth and high employment. The main monetary policy instruments used by the ECB:

1. Open market operations:
   • The main refinancing operations (they have a major role, run every two weeks with a maturity of two weeks);
   • Long-term refinancing operations (they are executed every month with a maturity of three months);
   • Fine-tuning operations (fast and timely actions that direct the trend of the market in the desired direction);
   • Structural operations (bond issues, reverse transactions, direct transactions).
2. The established benefits of lending to banks by the ECB;
3. Liquidity reserve policy.

The three most important reference interest rates in the Eurozone are: interest rate on major refinancing operations, interest rate on deposit facilities and interest rate on marginal lending facilities. The European Central Bank is the sole issuer of banknotes and reserves, that is, it has a monopoly in creating a monetary base. It defines the conditions under which banks can borrow the necessary cash, when they have a lack of liquidity. Therefore, it also affects the conditions by which banks trade each other in the money market. There is a strong link between the interest rate on the main refinancing operations and Euribor and other reference interest rates. The ECB is influencing the change in interest rates on the money market, which further changes other banking interest rates and other interest rates in the economy, triggering various actions of economic Tran's actors. The result of these mechanisms is the corresponding changes in economic variables - outputs and prices.

The leading interest indicators in the euro zone are: EURIBOR, EONIA and EUREPO. EURIBOR is shortened from Euro Interbank Offered Rate, which is the average interest rate at which European panel banks lend money to each other. Panel banks are banks with the largest volume of operations in the Eurozone's money market. These are the banks with the highest credit rating, high ethical standards and excellent reputation. When determining the amount of interest, 15% of the highest and lowest values are rejected. The average weighted value of the remaining bids is calculated and rounded to three decimal places. Every day, around 11:00, the value of Euribor is announced. These loans are with different maturities - up to 12 months. Eurobor is considered the most important reference interest rate on the European money market. Based on it, prices and interest rates for different types of financial products are formed. There are 15 different Euribor interest rates (for periods: 1, 2 and 3 weeks, 1-12 months). Euribor's level depends on the supply and demand ratio, but its level is influenced by the basic economic factors, such as the rate of economic growth or the inflation rate.

EONIA is shortened from Euro Overnight Index Average. This is the interest rate on unsecured lending in euros between first-rate banks (the same panel of banks as in the case of Euribor) with a maturity of 1 day, which can be considered Euribor interest rate for 1 day. The ECB calculates the rate of this rate on a daily basis. Eonia is the basic

interest rate for numerous derivative transactions. EUREPO is a benchmark for secured monetary transactions in the Eurozone. It is published by the European Banking Federation. This is the rate at which, at 11 o'clock (Brussels time), the first-rate bank offers funds in euros in the euro area or on the world market to another first-rate bank, and as collateral serve securities traded on the European repo market as collateral. Deadlines are 1, 2, 3 weeks, 1, 2, 3, 6, 9 and 12 months.

The European Central Bank has three bodies: The Steering Committee, the Executive Board and The General Council.

The Governing Council is the body of the European Central Bank. It consists of six members of the Executive Board and the governors of the national central banks of the euro zone. Its main task is to define monetary policy in the euro zone, in particular determining the reference interest rate (REFI) rate under which commercial banks can obtain money from the European Central Bank. The Governing Board shall be chaired by the President of the European Central Bank. Decisions within the ECB are made largely by one man, usually one vote. Members of the Governing Board of the ECB are not representatives of their countries and central banks, but are elected as individuals.

The Executive Board consists of the President and the Vice-President of the European Central Bank and four other members appointed by the President or the Prime Minister of the euro zone. The Executive Board is responsible for the implementation of the monetary policy defaced by the Board of Directors and for giving instructions to the national central banks. He is responsible for day-to-day management of the European Central Bank. The Statute of the ECB found that the president must present an annual report on ECB activities and monetary policy to the European Parliament.

The General Council is composed of the President and Vice-President of the European Central Bank and the Governor of the national central banks of all EU Member States, and not only those members of the Monetary Union. The General Council contributes to the work of the ECB in the following ways: through strengthening coordination between the ECB and the national central banks, has an advisory function, collects statistical information and prepares annual reports, makes the necessary preparations for fixing courses in member countries that have not yet adopted the euro. The voting power of individual governors reflects registered capital in the ECB. The council meets usually twice a month at the ECB headquarters in Frankfurt am Main, Germany. The purpose of this body is to ensure co-operation with EU member states that have not entered the monetary union. The function is advisory, and the body coordinates the future expansion of the euro zone.

In order to implement the single monetary policy of the EMU, the ECB needs a significant degree of convergence of member states as well as future members of E (M) U, so that monetary policy can be successfully implemented. Deka Convergence European Indicator (DCEI), which takes into account four types of convergence: monetary, fiscal, real and institutional, is used to measure the degree of convergence. The maximum DCEI value is 100 and it represents the

average value of a certain indicator for the EU. It is important to note that in the context of monetary convergence, the inflation rate, the interest rate, the exchange rate and the credit growth rate are analyzed. As part of fiscal convergence, the share of budget spending in GDP is analyzed, the share of private consumption in GDP, the share of public debt in GDP, and the share of external debt in GDP.

As part of the real convergence, GDP per capita is analyzed, the share of agriculture in GDP, the unemployment rate and the share of trade with the EU in the total trade of the country. The real economic analysis uses ten indicators with an equal importance of 10%, which are: general inflation rate, inflation rate without the price of electricity and foodstuffs, expected inflation rate, producer prices, import prices, total output, industrial production, and economic vulnerability to external factors, structural budget deficits and unit labor costs. As part of the institutional convergence, the success of the policy, the banking sector institution, the establishment of a state of law and the level of negotiations with the EU, which each country has implemented, is considered. The group of monetary convergence indicators as well as the real economic indicators of indicator convergence gets its weight in the final creation of the ECB compass (monetary indicators have so far received a weight of 15-25% and a real 75-85% in the calculated compass value). The compass value can range from 0 to 100, if 50 mean a monetary policy is expansive, and if it is between 50 and 100, this means that monetary policy is restrictive.

A member of the monetary union can only become a country that fulfills the following convergence criteria:

• Price stability. The inflation rate should not amount to more than 1.5 percentage points of the unadjusted average in the three EU Member States with the lowest inflation rate. The inflation rate is measured by the consumer price index in the year before determining the fulfillment of the criteria for access to the monetary union.

• Long-term interest rate. The long-term interest rate on government bonds should not exceed two percentage points above the unadjusted interest rate prospect in the three member countries with the lowest interest rate.

• Exchange rate. The national currency must not devalue in the last two years and its fluctuations are within the fluctuations of the European monetary system.
• Fiscal deficit. The state budget deficit according to the social gross product may not exceed 3 percentage points.

• State debt. The total public debt must not exceed 60 points of the amount of one-year gross domestic product.

The European Central Bank began to function on June 1, 1998. Together with the national central banks, the 15 European Union member states are the European System of Central Banks (ESCB), which was tasked with managing operations to introduce the common currency of the euro and to oversee the entire process. Given that the Statute of the ESCB and the ECB is a

formal document of an international character, which can only be changed with the consent of all the signatory countries; it is very difficult to exert political pressure on the ESCB. The ECB has two decision-making bodies. The key body of the ECB is the Governing Council of the ECB entrusted with the formulation of a single monetary policy. Article 10.3. The Statute of the ESCB and the ECB envisages that a qualified majority must be obtained for the adoption of decisions of the Governing Council, that is, it is necessary that the votes of the members representing at least two thirds of the subscribed capital for the decision are required. In the course of the decision-making of the Governing Council, the votes of the members of that body are weighted on the basis of the share of the national central banks in the subscribed capital of the ECB. Politicians are not allowed to give advice to members.

The Statute of the ESCB and the ECB stipulates that the ECB or any national central bank do not seek or receive instructions from a Community institution or body, from any government of a Member State or from any other body. The Executive Board makes decisions by a simple majority, but in the case of the same number of votes for and against a decision, the vote of the President of the ECB is decisive. The President of the Ministerial Council and members of the European Commission have the right to participate in meetings of the Governing Council of the ECB, but they do not have the right to vote, but the possibility to submit a proposal for consideration to the Governing Council. Also, the President of the ECB participates in Ministerial Council meetings when discussing problems relating to the ECB's objectives and tasks.

As an advisory body to the ECB, there is a General Council consisting of the President and Vice-President of the ECB, as well as 15 governors of the national central banks of all EU member states. Regarding the legislative power, the ECB enjoys the highest degree of independence. The Maastricht Treaty imposes on the ECB a minimum obligation in terms of reporting, i.e. submitting an annual report to the European Parliament, the Council of Ministers of Economy and Finance, the European Commission and the European Council. Another important feature of the ECB is publicity and transparency. Namely, the ECB publishes its monthly bulletin, and also every month after the first meeting of the Governing Council, it organizes a press conference.

The ECB and the national central banks are not allowed to approve loans or any other type of loan to EC institutions, bodies, and central governments, regional, local or other public authorities, and other bodies whose work is regulated by the law on public institutions. They are also prohibited from directly purchasing debt instruments from those entities. Financial independence requires NCBs to freely use their funds. It is forbidden to lend or give guarantees to the government from the old NCB, as well as privileged access to the government's financial resources to the NCB or the financial market. It is also forbidden for the NCB to trade on the primary market with government debt. According to the Statute of the ESCB, Member States may not allow their central banks to come to a position that they do not have sufficient financial resources to carry out tasks related to the ESCB. NCBs also have the freedom to independently determine the budget. Annual accounts should be adopted by the highest authorities of NCBs in cooperation with independent auditors and may be subject to subsequent approval by technical persons (shareholder or government). The NCB Statute may prescribe a way of

distributing profits. If there are no such decisions, the allocation of profits should be taken over by the highest authorities of the NCB on a professional basis and should not be subject to discretion of third parties unless there is a clear safeguard clause that the allocation will not be detrimental to the financial resources necessary for the performance of the tasks of the NCB. Member States are not allowed to reduce the capital of their NCBs without prior agreement with their highest authorities. It can be concluded that the ECB is among the central banks with the highest degree of financial independence in the world.

National Bank of Serbia

The position, organization, powers and functions of the National Bank of Serbia, as well as the attitude of the National Bank of Serbia towards the organs of the Republic of Serbia and international organizations and institutions, are regulated by the Constitution of the Republic of Serbia and the Law on the National Bank of Serbia. The National Bank of Serbia is independent and independent in the performance of its functions as defined by the Law on the National Bank of Serbia and other laws, and it is responsible for its work to the National Assembly of the Republic of Serbia. The main goal of the National Bank of Serbia is to achieve and preserve price stability. In addition, without prejudice to the achievement of its primary objective, the National Bank of Serbia contributes to the preservation and strengthening of the stability of the financial system.

The bodies of the National Bank of Serbia are:

• Executive Board;
• Governor;
• Board of Governors.

The Executive Committee determines monetary and foreign exchange policy, as well as activities in order to preserve and strengthen the stability of the financial system. The Executive Board shall, in particular, determine:

• Monetary policy program of the National Bank of Serbia;

• The method of determining the interest rates of the National Bank of Serbia and the method of calculating the collection and payment of interest on placements and other claims of the National Bank of Serbia, as well as the funds the National Bank of Serbia pays interest;

• Conditions and manner of issuing securities of the National Bank of Serbia;
• Conditions under which and the manner in which the National Bank of Serbia carries out open market operations and performs discount activities;

• The policy of approving short-term loans;

• The policy of the exchange rate of the dinar;

bases for calculating the reserve requirement and the rate of reserve requirement, as well as the method, conditions and deadlines for allocating and using the reserve requirement of banks;

• Foreign exchange reserves management policy, as well as guidelines for managing these reserves;

• Other instruments and measures of monetary and foreign exchange policy;

• Measures for maintaining the liquidity of banks;

• Measures and activities, within the competence of the National Bank of Serbia, for the purpose of preservation and strengthening

• Stability of the financial system.

The Governor of the National Bank of Serbia shall be responsible and responsible for the achievement of the objectives of the National Bank of Serbia, and in particular for:
• implementation of decisions of the Monetary Committee and the Council;

• Organization and operations of the National Bank of Serbia;

• Preparation and adoption of acts from the jurisdiction of the National Bank of Serbia;

• Performing other tasks determined by law.

The Governor of the National Bank of Serbia is attending Government sessions on issues related to the National Bank of Serbia. Deputy Governor, a larger or smaller number of vice Governor, business sector directors, as well as directors of the National Bank of Serbia branch office, represent a working operational team that should assist the governor professionally in making the most sophisticated decisions.

Council of the National Bank of Serbia, on the proposal of the Governor[37]:

• approves the financial plan of the National Bank of Serbia;

• adopts the annual account of the National Bank of Serbia;

• determines a single tariff on which the National Bank of Serbia charges a fee for services rendered;
• determines the amount of salaries of the Governor and Vice Governor r of the National Bank of Serbia establishes a list of posts with special authorizations and criteria and determining the level of salaries of employees with special powers of the National Bank of Serbia;
• selects an authorized auditor.

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[37]"Official Gazette of RS", no. 72/2003, 55/2004, 44/2010, 76/2012 and 106/2012

The Executive Board determines the reference interest rate and other interest rates applied by the National Bank of Serbia in the implementation of monetary policy. In addition, the Executive Board, upon the proposal of the Supervisory Board, issues the regulations of the National Bank of Serbia in the field of control and supervisory function, in accordance with the laws regulating the performance of these functions. The Executive Committee decides on the

issuance of preliminary approvals as well as on the granting and revocation of operating licenses to banks, the granting and confiscation of insurance companies for licensing activities, the granting and revocation of licenses for the conduct of financial leasing activities, the granting and confiscation of management companies voluntary pension funds work permits and a license to manage those funds. The Executive Committee makes decisions in sessions, with the majority of votes of all members. In the case of an equal number of votes, the Governor shall decide.

The National Bank of Serbia is headed by the Governor, representing and representing the National Bank of Serbia. The National Bank of Serbia Governor shall be elected by the National Assembly of the Republic of Serbia with a six-year term of office, with the right to re-election. The Governor manages the operations of the National Bank of Serbia and organizes its work; implement the decisions of the Executive Board and the Council; enact regulations, general and individual acts from the jurisdiction of the National Bank of Serbia, which have not been placed under the jurisdiction of the Executive Board and the Council by law; proposes regulations, general and individual acts adopted by the Executive Committee and the Council, unless otherwise stipulated by the Law on the National Bank of Serbia; regulates the internal organization of the National Bank of Serbia and the systematization of positions in the National Bank of Serbia, as well as the working relations of the employees of the National Bank of Serbia; appoints and dismisses the employees who manage the organizational units at the National Bank of Serbia and performs other tasks determined by the Law on the National Bank of Serbia. The Governor, as Chairman of the Executive Board, signs the decisions made by the Executive Committee. He is obliged to submit to the Council reports on the implementation of monetary policy, reports on the approval and revocation of operating licenses for commercial banks, the legality of work and creditworthiness of commercial banks and other financial organizations. On the other hand, the Council is not completely independent as it is elected by the Parliament of Serbia and it is obliged to submit a report on its work at least once a year. In order for the Council to independently and impartially make decisions, its members cannot have a conflict of interest on any basis and therefore cannot be employed by the National Bank.

The Board of Governors consists of five members, including the President, elected by the National Assembly on the proposal of the National Assembly Committee responsible for finance. Council members are elected for five years, with the right to re-election. The function of the governor of NBS is performed by Jorgovanka Tabaković since August 2012. From 1993 to 2000, she was elected to three National Assembly Parliamentary Assembly sessions for the People's Deputies, as well as from 2007 to date. In two terms, he was chairman of the Committee on Finance of the National Assembly of the Republic of Serbia. From March 1998 to October 2000 she was the Minister of Economic and Equity Transformation in the Government of the Republic of Serbia. He is the author of several works in the field of privatization and financial markets. During 2006 and 2007 she was engaged as a lecturer at the Faculty of Management in Novi Sad. During its term of office, inflation with 12.8%, as it was in 2012, was reduced almost 5 times. For 2014, its movement ranges from 2.5 to 5.5 percent, and in the last six months it has moved below the lower limit.

Action plans for improving the management of foreign reserves, statistics, financial stability, accounting and information technologies were also realized. Very important strategies for the liberalization of capital movements, protection of financial services users and improvement of efficiency in the money market, as well as draft laws in the field of payment services in which the EU regulatory framework is incorporated, have been prepared. Econometric models of work and strengthening of the research function of the National Bank of Serbia and developed capacities for harmonization of domestic regulations with the legislation of the European Union and activities related to European integrations have been developed. The stability of the foreign exchange market was achieved, which was an important factor for low inflation and maintenance of financial stability in 2013. The NBS foreign exchange reserves increased by 275 Million Euros, out of which investments amounted to 180 million euros. Thus, the level of foreign exchange reserves is maintained, which is enough to protect the domestic system from even stronger negative movements from the international environment.

The National Bank of Serbia has the following functions[38]:

• determines and implements monetary and foreign exchange policy;

• manage foreign reserves;

• determines and implements, within its jurisdiction, activities and measures in order to preserve and strengthen the stability of the financial system;

Issues and revokes work permits and performs control of the creditworthiness and legality of operations of banks and performs other activities in accordance with the law regulating banks;
• Issues and revokes the licenses, i.e. powers to perform insurance activities, and supervises the performance of such activities and performs other activities, in accordance with the law regulating insurance;

• issues and revokes operating licenses for voluntary pension fund management companies, supervises this activity and performs other tasks in accordance with the law governing voluntary pension funds;

• issues and revokes licenses for leasing operations, supervises the performance of these operations and performs other activities, in accordance with the law regulating leasing;

• performs the tasks of protecting the rights and interests of the users of services provided by banks, financial leasing companies, insurance companies and companies for managing voluntary pension funds in accordance with the law;

• Issues banknotes and coins and manages cash flows;

• regulates, controls and improves the smooth functioning of domestic and international payment transactions in accordance with the law;

• performs the tasks determined for the Republic of Serbia by law.

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[38]D., Đukić M., 2012, Financial markets in crisis conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p.144

BELIBOR is the interest rate for dinar funds, according to which the leading Serbian banks (Panela banks - the ten most active banks in Serbia and the Association of Banks) are ready to lend money to each other. This is the reference interest rate on the Serbian interbank market, which should be the basis for all dinar placements of banks.

BEONIA is the effective overnight rate calculated as the weighted average of all overnight lending in the Serbian interbank market, which were placed by Pamela banks.

Other monetary policy instruments of the National Bank of Serbia have an ancillary role - they contribute to the uninterrupted transmission of the influence of the reference interest rate on the market, as well as the development of financial markets. These instruments are:

Open Market Operations;

• Mandatory reserve;
• Credit and deposit facilities (permanent facilities);
• Interventions in the foreign exchange market.

Monetary policy instruments do not directly affect the goals of monetary policy. It happens that many months pass before their effects become visible. The National Bank of Serbia is therefore focused on achieving operational and transitional goals. The operational objective is easily controlled, but it is far from the end goal, while the transitive target is more difficult to control, but it is closer to the ultimate goal.

As in the case of more developed market economies, especially those in the inflationary targeting regime, the National Bank of Serbia uses interest rates on the interbank money market as an operational objective, and as a transient projection of inflation. The National Bank of Serbia performs open market operations with the aim of regulating the liquidity of the banking sector, influencing the movement of short-term interest rates and giving a signaling position on monetary policy. These operations, depending on the objectives, dynamics and methods of implementation, are classified into:

• Main operations;
• Longer-term operations;
• Fine-tuning operations.

The National Bank of Serbia carries out open market operations by conducting repurchase transactions or permanent purchases and selling securities.

The obligatory reserve represents the amount of assets that banks are required to keep in accounts with the central bank. The amount of the reserve requirement is calculated by applying

the reserve requirement rate to the basis for its calculation. The basis for calculating the reserve requirement can be made up of total sources of funds (deposits, loans and securities) or as a part of the source (for example, only deposits). The reserve requirement rate may be unique or differentiated according to the manual and / or currency structure of the source of funds. Changing the reserve requirement rate affects the reduction or expansion of banks' credit potential, as well as the withdrawal or creation of additional liquidity of banks. In market economies, the reserve requirement rate is more important as an instrument of credit regulation, and smaller as the instrument for liquidity regulation of banks. The NBS pays interest rate of 2.5% per annum on the realized average condition of the dinar required reserves - up to the amount of the calculated reserve requirement. There is no interest on foreign currency reserve requirements. If the bank holds the lower required reserves than prescribed, it will pay NBS interest rate equal to 150% of the reference interest rate - for the reserve in dinars and interest equal to the quarterly Euribor plus 10 percentage points for foreign currency reserve. The National Bank of Serbia uses the obligatory reserve as an ancillary instrument only when the effects of other market measures of monetary regulation have been exhausted. The decision on the level of rates, as well as the basis for calculating the reserve requirement, is made by the Executive Board of the National Bank of Serbia. Continuous central bank facilities include credit and deposit facilities that are available to banks at all times. These operations have overnight maturity, and they are initiated by banks. Credit facilities include the use of loans to maintain the daily liquidity of banks based on the stock of qualified securities. Deposit facilities include the overnight deposit of surplus liquid assets of banks with the National Bank of Serbia. Interest rates on fixed facilities are a kind of corridor for interest rates on the interbank money market. They represent an important security factor in the banking sector liquidity management process, thus reducing the fluctuations in short-term interest rates on the interbank market, which would be more pronounced that these facilities do not exist. Interest rates on continuous overnight facilities, i.e. the corridor for the overnight interest rate on the interbank money market, are determined according to the reference interest rate and are currently moving in the range:

• Rate on credit facilities - reference interest rate +2.5 pp. (11%);

• Rate on deposit facilities - reference interest rate - 2.5 p.p. (6%).

Although the main instrument of monetary policy in the CI repo rate regime, the exchange rate in the initial period of the CI played an important role as a monetary policy stance. The foreign exchange rate is affected by a repo rate in a very short time, so that banks place on the repo market capital that they import from abroad when their yield (which depends on the repo rate, but also from the change in the course in the period of placements) becomes attractive. Further, exchange rates through the exchange rate channel are transferred to prices. Experiences from other transition countries that have been in use for more than a decade of the CI concept also show that the exchange rate channel is important in small open economies, but it is expected that its impact will weaken over time. The interest rate via the interest rate channel is transferred to prices in a not so short term period as the exchange rate.   The interest rate channel is evident, among other things, on bank loans that become less required due to changes and other rates influenced by the reference rate. This channel is stronger in developed countries,

and in other transition countries it has been strengthening over time, although it was relatively weak at the beginning of the CI. Empirical data for Serbia confirmed that in the initial period of one year, how much is used CI, and in a slightly longer period than the previous three since there was a repo rate - it did not have a significant impact on the growth of loans to the economy and households that banks are offering from the domestic system. In other words, the loan is in relation to the interest rate of the central bank of an exogenous category that uncertainly determines the demand. The amount of loans from the domestic banking system in the short run is likely to be influenced by some more direct measure of monetary policy (the rate of mandatory reserve or the change in macro prudential norms that are occasionally used in the achievement of monetary objectives). In the long run, however, the total amount of loans received by the domestic private sector - both through the domestic banking system and through direct foreign credits - is even more certain - is determined by the demand for loans that seem to always find some way to be met and despite the measures of monetary politics. The reason for this is probably the relatively low level of indebtedness of the entire private sector. Over time, interest rate channels can be strengthened, i.e. the increasing dependence of the lending price on the reference rate of the central bank and the increasing sensitivity of clients to changes in interest rates with banks. Experiences from other transition countries speak in favor of this assumption. As far as the expectation channel is concerned, it can be said that expectations had all the basics to tie in the last year to the target inflation rate, as the NBS intensely informs the public about its work and its commitment to meeting the set goal.

Contemporary Conventional Banking Systems

Although banks are of great importance to the economy as a whole, as well as to local communities, it is difficult to define the concept of a bank with one definition and only from one aspect of its meaning. So, we can define a bank from a number of different points of view, in the sense of:

• The economic functions it has;

• Services provided to their clients;

• The legal basis of its existence.

The word "bank" derives from the Latin word "bank", which denotes the bench, the counter, the counter, placed on the street where different types of money were exchanged. In ancient Greece, the word trapeze was used, which also denotes a bench or counter where money was changed, and this name for the bank has remained in contemporary Greek. The Bank is a mediator between financial and financial deficits, or an intermediary between those who have a surplus and those who have a shortage of money, an intermediary with depositors and those who take loans. The Bank is established as a joint-stock company, a contract on the establishment and provision of funds for the founding capital of a bank. Banks are the most important financial institutions in most countries, and especially in the banking centric modern

countries of the world, if we look at the value of assets. A modern viewpoint is viewed by the bank as a financial institution that earns a profit on the basis of the difference between the interest it pays on the collected funds and interest on loans. The Bank performs the function of collecting funds in the form of deposits in order to place funds in the form of loans to the population and the economy. The mentioned moment of interest based on interest differences is the one that makes the topic of this dissertation interesting, as there is a fundamental difference between a conventional bank and an Islamic bank that operates on the principle of prohibition of interest, so that it cannot reach its profits in this way. There will be more words about this below.

The modern bank has the following functions:

• Credit function;
• Investment planning function;
• Payment function;
• Saving function;
• Cash management function;
• Investment banking;
• Brokerage;
• Insurance function;
• The trustee function.

The first banking activities, as they perceive from today's point of view, originated in the early stages of the development of human society. The beginnings of these jobs can be historically monitored 3000 years before the new era, and the material evidence of the type and manner of development of banking activities dates back to the 7th century BC. In the period from the 7th to the 5th centuries before our era, private houses appeared in Babylon that dealt with the forerunner of today's banking business, known as thesaurus, and the people who called them were called "thesaurus" (today's notion of implies the withdrawal of money or other value from the traffic). These first tasks concerned the organized disposal of appropriate goods, usually grain and other types of similar products, for storage. The goods received by the warehouse were kept or traded for a certain period of time and with the appropriate receipts of the deposited products which themselves became the subject of independent financial turnover for settlements and payments.

In the same period in ancient Greece[39], banking operations are developing within the famous temples, especially the temples in Ephesus on the island of Rhodes. With the emergence of coins on this soil, beginning from the 6th century BC, which was issued by almost every city or small state independently for its own needs, the first private exchangers appeared, who changed the money of a city or state for the money of another state, or they gave it on a loan with interest. They did their job on the square at the table or on the bench. As Greek is called "trapeze", they are called "trapeze". And in today's sense the word "trapeze" means the bank.

In the period of the formation of the Roman Empire, even more favorable conditions for the development of monetary transactions and other financial affairs are gained. The person who is in the Roman Empire dealing with the acceptance of deposits and deposits by giving loans and mediating in money traffic is called "argent Arius ". Their work largely reflects on the development of economic life, but the influence of "argent Arius" in government and government affairs has become increasingly important. The exchange offices were performed by other persons called "tiumulators".

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[39]Rose P., 1996, Commercial Bank Management, 3rd edition, Irwin, Chicago, p.8

In early feudalism, along with the collapse of trading, he also slowed down the development of banking operations, that is, banks. In this period, only the exchange and emission jobs were more important. Many monies of various types that are growing more and more in that period demanded the existence of only exchange jobs. During the same period, the loan business appears mostly in the form of a natural loan, in order to evolve over time as a special monetary credit business that monitors commercial transactions. In the framework of these activities, in commercial transactions, a wider application is received by the bill of exchange (XIII century - Italy), on the basis of which international trade and money traffic is successfully developed as a payment instrument. This period is also significant in the first cases of "money deterioration", which seemed to be a deviation in the weight and composition of precious metals from which money was minted, and it was reflected in a certain rate of inflation that certainly impoverished a wide circle of owners of monetary assets.

Banking activities are reviving again in medieval Italy, when banking develops from the need for permanent loans, and payment operations are more organized and more secure. In the 12th century, our era in Italy developed the precursors of today's banks, called "montes". The first banking institutions appear as commercial and emission banks and among them are the first known banks of the Genoa, founded in 1320 and Casa di San Giorgio, founded in 1407. These banks also dealt with giro-circulation, and are therefore considered to be the oldest real banks in the history of banking. In this period, the use of bills of exchange was developed, which quickly became an important and irreplaceable means of business and lending. Also, the Amsterdam Bank introduced special book money into the circulation, which was labeled "mark bank" as 8.5 g of fine silver.

The foundations of modern banking were set up during the 18th and 19th centuries, when large banking institutions were founded, which by their own and others' assets became an important factor in the development of economy and transport, not only in the countries where these banks developed, but also in international relations. Among them, of course, they are most famous; Sverigem Risk bank, founded in Sweden in 1668, the Bank of England, founded in England in 1694, etc., In Serbia, the first bank was founded in 1862 under the name of the Fund

Management, which later went to the State Mortgage Bank, and since 1883 it operated as the Privileged National Bank of the Kingdom of Serbia.

The usual division of banks into the following types:

• Central or emission bank;
• Commercial Bank;
• Commercial or depository bank;
• Investment Bank;
• Universal Bank;
• Other types of banks.

The commercial bank is the product of highly developed countries of a market type of business. They are mainly created from their own financial resources. In order to understand the business of the bank, the first of them must be studied their balance sheet and success. On the liabilities side of the balance sheet of the bank are the funds that the bank uses in its operations, as well as the way in which it arrives. The income statement shows the financial result of the bank's operations, and if the bank has a loss, it will be recovered from the reserve. Commercial banks realize large annual turnover, and they are formed as large companies and companies that work for their interest. In addition to financial, they also have an advisory role.

Commercial banks have the following functions:

Establishing and financing new companies o finance the investment requirements of existing companies o trade in securities, stocks and government bonds o have an intermediary function in government and state arrangements and loans from third parties.

Their activities are linked to large industrial enterprises (such as companies, corporations, carriers, cartels, etc.). What is characteristic of them is to bridge the interests of financial and industrial capital interests. In business activities Banks dominate their own business, which means they finance the establishment and expansion of their own companies and the participation in financing of other companies. This fact indicates that commercial banks are the owners (or co-owners) of a large number of companies and in that way (through profits of the company) they increase their own capital. In the last few decades, commercial banks are organized as joint-stock companies that have the right to conduct all short-term and long-term banking operations. It is characteristic that lately commercial banks are transforming into deposit banks.

Commercial banks belong to the most widespread form of banking organization, they are usually branched and have a lot of affiliates. There is almost no country where deposit banks do not represent basic financial intermediaries. Taking into account their liquidity and the security of placements, deposit banks approve loans in order to meet the needs of clients for cash. The number of clients has influenced the deposit banks to develop a wide branch network across a particular region or state[40].

Deposit banks are liquidity holders that are transferred to other market entities. Modern tendencies in banking have made deposit banks profitable. In practice depository banks are most present NOW (combination of savings and current account) and SVIP (arrangement between the Trans actor and the bank with a predetermined minimum and maximum limit of the check account) arrangements. NOW arrangements provide current payments, liquidity and carry a certain interest. A SVIP account is an arrangement between the Trans actor and the bank in order to maintain liquidity within the boundaries of the agreed margin. Usually, in conditions of high liquidity, banks automatically transform the excess of cash into interest-bearing securities. Interest yields are calculated on a daily basis and transferred to the investors of funds. The characteristic of deposit banks is that they are increasingly participating in investment activities by buying and selling HOV on the money market and the capital market.

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[40]Živić A., Erić D., 2005, Introduction to Financial Management, Belgrade

Investment banks are specialized banks that in their financial potential have high quality funds that the bank finances the development needs of clients.

Under investment banks, the most common is the financial intermediary in the capital market, which carries out the functions of marketing and trading in government and corporate securities. Investment banks or stock exchanges are financial institutions that deal with operations in the primary and secondary markets. They do not form a financial potential based on the inflow of deposits, nor through contracted savings. Unlike commercial banks, investment banks mobilize funds at least in the medium term, and most often in the long run, which enables them to make long-term placements.

Investment banks in the narrower sense make financial services to companies that want to issue shares and bonds on the primary capital market. In doing so, investment banks provide companies with expert information on current developments in the financial market and the conditions under which they can issue their own securities. A consortium of investment banks may warrant companies' issuers that the agreed quantum of these papers will be placed on the primary capital market according to pre-determined conditions. Finally, investment banks are organizing new sales channels emitted securities. Investment banking has developed as such in the United States. It is believed that the first investment bank was a firm from Chicago, owned by Heris and Forbes, founded in 1880. Prior to this period, the services of the so-called "agents" individuals who are trying to collect the requested money in all possible ways. As this practice proved to be insufficiently effective, at the end of the 19th century, agents replaced traders with shares. In the same period, many banks are formed, which act as intermediaries between investors and companies that need capital. Thus, in 1901, JP Morgan & Co. organized an association that raised $ 1.5 billion to integrate a large number of steel producers into the United Steel Corporation.

In October 1929, the securities market collapsed and from 1933 to 1934, President Roosevelt initiates three new laws - the Securities Act, the Banking Law and the Stock Exchange Act. The proposed laws regulate the capital market and establish adequate institutions. The Banking Act further separates the affairs of commercial and investment banking.

The last decades of the 20th century is characterized by a rapid expansion of the financial sector. The separation of commercial and investment banking was no longer meaningful. In the US, the Banking Law was reformed in 1999, thus opening the way for the creation of banking groups.

All major banks are dealing with investment banking today - as a rule, an investment bank is located at the center of the banking group. Today, the leading investment banks (the so-called bulge-bracket) are Citigroup Global Markets, Credit Suisse First Boston (CSFB), Goldman Sachs, JP Morgan, Lehman Brothers, Merrill Lynch and Morgan Stanley.   Gathering capital and placement of securities - An investment bank is in the role of an intermediary between the owner of the capital and the client (company, government or local authority) in need of money. In this context, the investment bank issues shares, bonds or other securities on behalf of the client. The investment bank charges its service through the difference between the purchase and selling price of the security.

Financial consulting - Investment banks provide their clients with various advisory services. Examples of financial consulting include providing current information to investment managers, advising companies on an investment strategy, assisting global companies in penetrating new markets (currency risk management), and perhaps the most famous example of Mergers & Acquisitions (M & A).

Sales and distribution of securities - Efficient placement of securities implies a diverse network for the distribution of new financial instruments. Most of the investments in new securities issued by investment banks are sold to institutional investors (pension, investment and fund Internet, individual investors have the opportunity to buy securities through online services.

Trade and market creation for securities - As an activity of supporting the placement of new securities to institutional and individual investors, the investment bank also appears in the capital market as a so-called. Market maker. In this function, the investment bank provides liquidity for a certain period of time, providing at the same time the redemption and selling price of the given security. On the other hand, the investment bank also appears in the securities market as a broker-dealer, trading for both clients and for its own account.

Research - Almost all investment banks have a research department. Analysts employed in this department monitor economic trends and news, securities of individual companies or the entire industry, and other relevant information for the needs of the bank and its clients. The research department can appear as an income generating activity and as a support activity. In the first case, the investment bank reports its sales to interested clients, while as a support activity, the research plays a significant role in other bank affairs.

Financial Engineering - Financial engineering can be defined as the development and creative application of financial technology to address financial problems, exploit financial opportunities and create added value. With the decomposition, unpacking and combining several (parts) of different financial instruments, investment banks create new financial instruments with certain changed characteristics, adapted to the needs of clients.

Investment Management - Investment Bank often appears as an organizer and bearer of an investment fund. In this context, investment management (asset management) is an extremely important activity of investment banks, conditioned by the dominant role of institutional investors in financial markets. Investment funds, as institutional investors, are becoming more and more important players in the capital market. Venture capital - Venture capital refers to risk capital, placed mainly in companies that are just starting and almost as a rule belong to the high technology industry. Investment banks appear in the role of the general partner in the "pulse" of venture capital investors.

Banks perform one of the most important social functions through which the circular movement of the loan capital is realized, as a relatively self-sufficient production capital. In addition to this important social function, banks perform important tasks without which the process of social reproduction would be unimaginable. Basically, we can classify all these activities in several groups, such as passive, active, neutral and own banking. Passive business involves the collection of free cash and converting them into loan (interest-bearing) capital. It is known that the banks' own capital is very small compared to the collected capital from legal entities and individuals based on deposits, savings and sight deposits held in their accounts with banks. Nevertheless, in the mass of the collected funds, the constant share is made up of assets by the sight of legal and natural persons. On the collected funds, banks pay a certain interest called passive interest.

Active banking activities are those transactions in which banks appear as creditors by giving capital to the loan. For the leasing of capital, banks charge a price that is called active interest in banking. Logically, the active interest is always greater than passive. Neutral banking transactions are those jobs in which banks appear as commissioners, or perform transactions in their own name, and for the account of their clients. These are the domestic and international payment transactions, the collection of securities, the execution of stock exchange orders and other commissions. For performing these tasks, banks charge the cost of their work in the form of commissions. In their own banking business there are various stock market speculations and transactions in international trade, then the purchase and sale of profit-making shares and other securities, etc.

By performing various profitable operations, then with a large concentration of capital - from deposits, sight deposits and savings - and by its placement, banks increase their own capital and thus create financial capital as a qualitatively new form of capital. In legally regulated systems such capital is in the function of the development of the economy and society, while in underdeveloped economies the same social power is lost, the main goal of which is the progressive increase achieved by the increased exploitation of the economy and the society as a whole.

Balance Sheet and Balance Sheet of Conventional Banks

Different sources of information are used to examine the financial performance of banks, which are primarily based on the analysis and assessment of the financial position and achieved business results. In order for information on performance of banking operations to be useful for making economic decisions by their numerous and heterogeneous users, it is necessary that they be relevant, reliable, comparable and understandable. According to the generally accepted viewpoint, the provision of such information is the primary purpose of the financial statements of banks, which are the dominant type of accounting reports in general. In view of this, it is logical that the financial statements, as a final product of financial accounting, are considered to be the primary source of information on the financial performance of banks. In most countries, and in our country, a set of mandatory financial statements, which comprise the annual conclusion or annual account of banks, includes: balance sheet, income statement (profit and loss account), cash flow statement and annex or notes (footnotes) with the financial statements, which are considered as integral part of the report. Otherwise, while the balance sheet and the income statement are the two most well-known, traditionally used financial statements, the cash flow statement is relatively recent. In doing so, the common characteristic of all three reports is that they are compiled on the basis of a single basis, i.e. the same and equally measured basic transactions and business events. Nevertheless, the aforementioned reports present various types of information on the banks' financially expressed activities, as follows: balance sheet - information on the financial position at a specific time, i.e. on the balance sheet date; income statement - information on the results achieved for a particular period of time (for example, the business year); cash flow statement - information on cash inflows and outflows in a given accounting period.

Balance Sheet - Structure and Contents - The Balance Sheet provides financial information on the Bank's assets, liabilities and share capital, i. shows its financial position on a precisely determined day, the balance sheet data (for example, December 31 of current year). Balance sheet assets include bank assets, i.e. shows the use of funds of the bank (money and reserves on account with the central bank or other banks, placements in securities and placements in loans). Liabilities represent the carrying amount of non-residents (deposits, funds based on issued securities and loans taken), and the share capital of proprietary rights to assets of the bank, shown in the assets. The analysis of the bank's balance sheet is based on the fundamental accounting identity of assets and liabilities, i.e. assets, liabilities and capital, which is expressed as follows:

Asset = Liabilities
Assets = Liabilities + Capital

Banking balances represent a significant information base for the rational analysis and construction of various indicators for measuring banking performance. Identification and monitoring of balance sheet positions enables the assessment of the liquidity and solvency situation, the amount of potential risks, as well as the degree of intermediation of banks on the market. In this context, the cash rate, the liquidity rate and the capital rate, for example, represent only some of the more indicators that draw data for their construction from the balance

sheet, which serve for the purpose of assessing the performance position of the bank, as well as for the comparison of banking positions in within the entire banking system. The analysis and comparison of the balance sheet positions of banks with previous periods makes it possible to assess the performance of banks, the quality of the bank's management, the manual transformation and the sectorial structure of assets.

Financial potential of the bank (liabilities), is financial placements (assets).–The total assets and liabilities of the balance sheet are bank aggregates financial potential is defined as the total of all sources of funds, i.e. the sum of deposit potential, credit and other liabilities and according to the basic balance principle is identical to the financial placements. Financial placements are equal to total assets - sum of reserves, placements in loans and placements in securities. Central banking aggregates are credit potential and credit placements. Credit potential represents the volume of available funds of banks that can be placed in the form of a loan or in some other way, while maintaining the liquidity, solvency and prescribed reserve requirement rate. It is obtained as a difference in total balance sheet liabilities, i.e. financial potential and standard, programmed reserves (sum of required reserves and liquidity reserves). Credit placements include the sum of investments in loans (short-term and long-term), investments in securities (short-term and long-term) and other investments. Depending on the relationship between credit potential and credit placements, banks can be found in one of the following three positions:

1) **Equilibrium,**
2) **Superlative and solvent,**
3) **Illiquid and insolvent.**

Equilibrium position exists in the situation of quantitative equality between actual (in the accounts of recorded) and standard (endogenous) reserves, which means that credit placements are equal to credit potential. A super-liquid and solvent bank has surplus real compared to standard reserves, or has unused credit potential. In an illiquid and insolvent bank, the actual reserves are below the standard ones, the level of credit potential has been broken, and therefore the liquidity and solvency principles are endangered.

Income Statement - Structure and Contents - The Income Statement (Profit and Loss Account) shows the total income and expenses of a bank for a specified period of time, the difference being its positive or negative periodic result - net profit (gain) or loss. Net profit (gain) exists if the total revenue is greater than the total expenditure incurred in generating revenue. In the opposite case, i.e. if the total expenditure is greater than the total income there is a loss. The importance of the profit and loss account, the content of which consists of revenues, expenditures and net result, consists in the fact that it is a report on the profitability of the bank as one of the most important banking performances. Namely, the realized net result is used as one of the key measures for assessing the performance of the bank's management. Apart from the different content they present, the difference between the previously discussed report, the balance sheet, and the profit and loss account consists also of the time it refers to. For a certain period of time (for example, the business year).– revenues, expenditures and net

result as their difference – dynamic balance, as it shows the basic components of the operating results achieved –Unlike the balance sheet, the profit and loss account presents the movement report The income statement enables the identification of interest income, whose net interest income is deducted for the amount of interest expense. Loan loss provisions, which are allocated on the basis of management's assessment of the potential loss of income from bad loans, are deducted from net interest income. Another major source of banking income is non-interest income. After adding non-interest income to net interest income, non-interest expenses are deducted representing the general costs of the bank. Although banks are constantly trying to increase their non-interest income and to reduce non-interest expenses, usually expenditures overlap income and this difference is called the debt (debt) of the bank. Formally, the bank's debt is equal to the difference between non-interest expenses and non-interest income. The resulting figure basically represents the profit before taxes, gains and losses from securities and extraordinary items. The realized gains or losses on securities and extraordinary items are added (deducted) in order to obtain profit before taxation. By deducting the profit tax, the net profit is obtained. The income statement represents an important information basis for constructing indicators for assessing the performance of a bank, i. to assess the profitability of banking operations. In order to obtain a more complete picture of the performance position of a particular bank, the obtained current profitability data are compared with the planned, past or realized profitability of competitive ("peer") banks. There is a direct linkage between the balance sheet and the income statement, which can be shown by an adequate analysis of positions and changes in balance sheet and profit and loss account positions. Namely, the composition of assets and liabilities of banks in combination with interest rates, realized or paid on them, directly determines the interest income and expense in the balance of success, i.e. the items in the income statement are determined by assets and liabilities of the balance sheet together with the interest rates for each item.

Figure 2: Total net balance assets of commercial banks in Serbia

R. br.	Poslovno ime banke	Ukupna neto bilansna aktiva (u 000 dinara)
1	Addiko Bank a.d. Beograd (1)	93,381,421
2	Agroindustrijsko komercijalna banka AIK banka a.d. Beograd	186,656,748
3	Alpha Bank Srbija a.d. Beograd (2)	65,284,724
4	Banca Intesa a.d. Beograd	550,115,808
5	Banka Poštanska štedionica a.d. Beograd	132,201,668
6	Crédit Agricole banka Srbija a.d. Novi Sad	79,798,142
7	Direktna banka a.d. Kragujevac (3)	11,651,706
8	Erste Bank a.d. Novi Sad	145,094,514
9	Eurobank a.d. Beograd (4)	149,602,858
10	Findomestic banka a.d. Beograd	12,263,080
11	Halkbank a.d. Beograd (5)	35,715,194
12	JUBMES banka a.d. Beograd	10,156,249
13	Jugobanka Jugbanka a.d. Kosovska Mitrovica	1,343,450
14	Komercijalna banka a.d. Beograd	381,990,129
15	Marfin Bank a.d. Beograd (6)	16,797,176
16	MIRABANK a.d. Beograd (7)	7,620,751
17	MTS banka a.d. Beograd (8)	5,960,796
18	NLB banka a.d. Beograd	38,844,630
19	Opportunity banka a.d. Novi Sad	13,049,518
20	OTP banka Srbija a.d. Novi Sad	47,672,266
21	Piraeus Bank a.d. Beograd	51,379,935
22	ProCredit Bank a.d. Beograd	89,057,318
23	Raiffeisen banka a.d. Beograd	260,110,644
24	Sberbank Srbija a.d. Beograd (9)	97,870,065
25	Société Générale banka Srbija a.d. Beograd	244,924,629
26	Srpska banka a.d. Beograd	11,492,495
27	Telenor banka a.d. Beograd (10)	12,193,206
28	Unicredit Bank Srbija a.d. Beograd	317,267,353
29	Vojvođanska banka a.d. Novi Sad	126,124,567
30	VTB banka a.d. Beograd (11)	12,346,271
	UKUPNO:	3,207,967,311

Source:https://www.nbs.rs/internet/latinica/50/50_5.html

Table 4: The five largest banks in the world in 2010

Ordinal number	Bank name	Total assets
1	Royal Bank of Scotland	$ 3.8 trillion
2	Deutsche Bank	$ 2.9 trillion
3	BNP Paribas	$ 2.49 trillion
4	Barclays Bank	$ 2.45 trillion
5	HSBC Holdings	$ 2.3 trillion

Source: Data monitor, 2011, Financial services, www.datamonitor.com

The banking structure varies depending on the country in question. According to the data of the US Deposit Insurance Agency, at the beginning of 2011, there were about 6,900 banks registered in the US, and more than 13,000 banks were registered at the end of the 1980s. In Germany, a similar trend was observed with just over 210 banks at the beginning of 2011. In Serbia at the beginning of the 20th century there were more than fifty banks, while in 2011 the NBS announced that the banking system of Serbia consists of 33 banks. Factors that affect changes in the banking sector of all banks in the world are:

• Economies of scale (reducing costs by increasing production volumes);

• Technological innovations;

• Regulatory changes that have reduced barriers and liberalized business.

Activities of banks in financial markets can be seen through the structure of the balance sheet of the bank. On the side of the liability, the distribution of the funding sources can be done in the following way:

1. Deposit accounts
2. • Vista accounts;
3. • savings accounts;
4. • Deposit certificates.
5. 2. Short-term funding sources
6. • Approvals approved by the central bank;
7. • Loans approved by banks.
8. 3. Long-term sources of financing
9. • Long-term bonds;
10. • Equity capital.

Deposits are the basic and most important source of funds for one bank. They are collected from the population, business entities and the state. They differ in terms of maturity, amount, interest rate, and the possibility that before the expiry of the payment of funds. In the case of term deposits, the customer undertakes to "hold" the assets with the bank for a long time, often 3, 6 or 12 months, and thus acquires the right to higher interest. In case of revocation of funds

before the deadline, the bank pays the client a lower interest rate than defined. In the case of demand deposits, the customer is entitled, at any time, to request a refund, at any time, upon the first call, but the interest earned by such savings is much lower. The bank's active (credit) business must be guided in such a way as to protect the interests of the depositors: individuals, enterprises, other banks and government bodies. Banks also receive non-cash deposits, such as deposits (depot jobs, utilities). Accessible by the Internet on the sites of central banks and financial institutions. Frequently used interest rates on interbank markets are EURIBOR, EONIA, LIBOR and BELIBOR[41].

Investments in securities[42];

• Deposit facilities with the central bank;
• Repo operations;
• Permanent assets.

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[41]Erić D., Đukić M., 2012. Financial markets in crisis conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p. 147
[42]Erić D., Đukić M., 2012. Financial markets in crisis conditions, Institute of Economic Sciences, Belgrade Banking Academy, Faculty of Banking, Insurance and Finance, Belgrade, p. 148

The risk of collectability is the risk that exists at the time of the approval of the loan or the issuance of the instrument, because already then each client (issuer) has some credit rating, and in each rating it is possible to attribute certain probability of non-execution.

The credit risk is the risk that the credit premium will change and affect the performance of the client (issuer), and potentially create problems in repaying and servicing the loan.

The risk of a credit rating is the risk of a deterioration of the credit rating of the client in the period when the loan is active, or in the period of its repayment.

Regulatory environment in terms of credit risk has recently become more and more demanding. An effective credit risk management system will eliminate most of the problems present in banks. Credit risk management is performed by:

• Applying a limit;
• Selection of credit claims;

Basically, there are two types of credit risk: one is related to the return of the principal or major debt war (that is, when the borrower is unable to repay the mature war or is willing, but cannot because of financial difficulties), and the other is related to paying interest as a yield on funds (it depends on whether the fixed or variable interest rate has been agreed and what is the interest rate movement on the market).

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[43]Baker H. K., Powel G.E., 2005., p.89

Figure 4: Credit rating

Standard and Poor's	Fitch Ratings	Moody's	Kratak opis kategorije rejtinga	Nivo
AAA	AAA	Aaa	Najbolja ocena, izuzetno visoka sposobnost izvršenja finansijskih obaveza, minimalan kreditni rizik.	**INVESTICIONI NIVO**
AA+	AA+	Aa1	Veoma visoka kreditna sposobnost, veoma nizak kreditni rizik.	
AA	AA	Aa2		
AA-	AA-	Aa3		
A+	A+	A1	Visoka sposobnost izvršenja finansijskih obaveza, nizak kreditni rizik.	
A	A	A2		
A-	A-	A3		
BBB+	BBB+	Baa1	Zadovoljavajuća sposobnost izvršenja finansijskih obaveza, umeren kreditni rizik.	
BBB	BBB	Baa2		
BBB-	BBB-	Baa3		
BB+	BB+	Ba1	Postoji sposobnost izvršenja finansijskih obaveza, ali je prisutan rizik promene poslovne klime i ekonomskih uslova, kao i znatan kreditni rizik.	**NEINVESTICIONI (ŠPEKULATIVNI NIVO)**
BB	BB	Ba2		
BB-	BB-	Ba3		
B+	B+	B1	Trenutno postoji sposobnost izvršenja finansijskih obaveza, ali je prisutan visok rizik promene poslovne klime i ekonomskih uslova, kao i visok kreditni rizik.	
B	B	B2		
B-	B-	B3		
CCC+	CCC+	Caa1	Loša sposobnost izvršenja finansijskih obaveza, veoma visok kreditni rizik.	
CCC	CCC	Caa2		
CCC-	CCC-	Caa3		
CC	CC	Ca	Nesposobnost ili veoma loša sposobnost izvršenja finansijskih obaveza, bankrot ili visoka verovatnoća bankrota	
C	C			
SD	DDD	C	Nesposobnost izvršenja finansijskih obaveza, bankrot	
D	DD			
	D			

Source: Standard and Poor's, Fitch Ratings

Modern Islamic Financial System and Concept of Business of Islamic Banks

An attempt to explain and define certain Islamic financial and economic principles by modern analytical methods has been going on for the last few decades. Many social sciences, such as the Islamic economy or Islamic finance, continue to face the problem of clear definition, despite the growing number of research carried out on this topic worldwide, both in Muslim

and non-Muslim countries. The most common mistake that prevents the general public from gaining certain knowledge of these terms is to justify the notion of an Islamic economy with the notion of a lack of interest. Also, many authors give their opinions in the form of written texts in books, journals or publications, as well as at various oral lectures, without sufficient knowledge of Islam, the primary sources of religion, its history, its origin and the principles on which it survives, and often even and without the knowledge of the Arabic language. Certainly, looking back over several decades, many expert papers, graduate, master, and doctoral theses on the subject of Islamic finance and economics, have contributed to greatly emphasize the importance and contribution of this topic to the global financial system.

Islam puts an inextricable link between Creator, man and society on the basis of the Divine Law, which equally sets norms and controls the functioning of every aspect of human life, social, economic, religious, marital, and political. What is insisted on in Islam is the erosion of the difference between the holy and the worldly. This means that they are sacred and worldly elements of a single whole, and that the whole without any of these two elements or some of its parts cannot function properly. Knowledge of physics, mathematics or molecular biology, but without knowledge of the religion that gives cause and meaning to all other aspects of life, has no significance. It would mean that we look at the triangle without one of its angles.

Islamic experts claim that the Islamic economy can create a paradigm different from a traditional economy that will provide answers and solutions to some key social issues, such as poor distribution of income, external diseconomies, which are accompanied by growth, unemployment and poverty. Islamic economic ideology has posed some challenges to the conventional economy, which it has not yet managed to achieve. On the other hand, it is very likely that the conventional economy will never achieve these goals because its basic purpose completely opposes such a way functioning of economic components. Some of the challenges that the Islamic economy has accomplished, and as a task imposed by the conventional one:

• Setting "justice and equality" as a priority. Social justice is an aspect of justice in the Islamic system, and it refers to the removal of obstacles and thus the creation of equal opportunities for all members of society in terms of work and the creation of material wealth. Legal justice refers to the equality of all members of society before the law.

• Spiritual and moral framework of Islam are those that additionally equate all members of society, thus valuing human relations rather than material wealth, and establishing at the same time the balance of the material and spiritual fulfillment of a human being.

• Recognition and protection of the ownership rights of all members of society is the foundation of a society oriented to the holders of interests, while protecting the rights of all and reminding them of their responsibilities.

Prohibition of interest الربا **Interest and camouflage** as a means of gaining Riba material wealth is an absolute ban in the Islamic economy and this is a way to protect debt security.

Instead of debt, there is funding with the division of profit and loss in accordance with a contract that is pre-contracted.

The very meaning of a system that functions without interest and debt, Western analysts and economists has the following arguments against such a system:

• **Zero interest means unlimited demand for available funds and lack of supply;**
• **Such a system does not balance the supply and demand of available funds;**
• **The zero interest rate means the absence of savings;**
• **Zero interest rate means that there is no investment and growth;**
• **Such a system denotes a lack of monetary policy, since no liquidity management instrument can function without a predetermined interest rate;**
• **Zero interest rate denotes a one-way capital flight.**

In response to the financial system in which interest plays a key role, the Islamic world has embarked on the development of its own Sharia based system. Although Islamic banking is a widely known term for the general public, there are many uncertainties about the key principles of its work. New time brings an analysis of this system, as well as an answer to the question of how Islamic banks earn if their interest income is banned. Functions of financial systems are the same, regardless of whether they relate to developed or less developed economies, or to Islamic or conventional economy[44]. Also, the practical problems that they entail in the process are common to all financial systems. However, it is important to emphasize the difference between traditional or conventional and Islamic banking. As the universal functions of banks are applied, and more importantly, the mechanisms through which universal problems are solved in practice are paradigms in which a distinction is made between conventional and Islamic banking. This second most often refers to the types of contracts that are being concluded, so the basic differences between Islamic and conventional banking lie in these two dimensions

Although Islamic banks were created as a result of the market needs of clients of Islamic religion, these banks are not religious institutions. However, they follow a special model of financial intermediation. The fascinating features of this model have attracted worldwide attention.

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[44]Iqbal Z., Mirakhor A., 2007, Introduction to Islamic Finance, Mate, Zagreb, p.30

Three decades ago, Islamic banking was just an empty desire. However, serious research work over the past decades has shown that Islamic banking is an efficient and productive way of financial intermediation. The Islamic banking system was introduced in the final quarter of the twentieth century, although the concept of the Islamic banking system goes further into the past. Everything started as a small rural banking experiment in Egyptian villages. The level

reached today is such that many international banks offer Islamic banking products in their offer. Financial institutions operating in accordance with Islamic financial principles were indispensable to provide Muslims with the opportunity to meet their needs. Given that the conventional financial system is totally interest-based, which according to Islamic Sharia rules is prohibited, Muslims needed a system that would offer them an Islamic platform for their financial transactions. Islamic finance is defined as a financial service or product that is primarily implemented in a way that is in line with the basic principles of Islamic law - Sharia. The goal of this system is to remove interest and other usable elements from the economic and financial spheres of human society.

Islamic finance implies the revival of the mode of trade, as well as the principles and practices of investment that have been established many centuries ago, in the context of modern finances and the financial system. The Islamic Financial System is a value-based system that primarily relates to profit and loss sharing models. These models include: Mudarabas (joint venture) and flyers (property participation), based on which lending, lending and investment functions are realized. Also, other instruments such as Murabaha (sale of deferred payment), hedge (leasing), Bai-Salam (advance payment), etc. are also used. in order to replace the interest-based banking and financial system as a whole.

As a result of the general economic prosperity of the Middle East countries

• **Cairo Naser Bank (Nasser Social Bank Cairo, 1971-1972),**

• **Islamic Development Bank (1975),**

• **Islamic Bank of Dubai (Dubai Islamic Bank, 1975), etc.**

Moreover, when three Muslim countries, including Iran, Sudan and Pakistan, decided to implement sharia principles into their national economies and banking systems, the Islamic banking and financial movement attracted world attention.

The Islamic Banking and Finance Industry (IBF) is the world's fastest-growing segment of finance. The aim of the IBF industry is to offer ethical and genuinely applicable solutions in the retail and corporate sector. Since 2001, the Islamic capital market has recorded an annual growth of 15-20 percent as a result of the rapid growth of Islamic financial bonds between Islamic business and financial organizations.

As a result of these steps, Islamic banking and financial institutions are now operating in several Muslim countries. Also, some non-Muslim countries and / or institutions are intending or already implementing some Islamic financial techniques. The various components of the Islamic financial system are now available in different parts of the world, varying in depth and quality. A detailed and integrated IBF system is gradually evolving. The size of this industry, which was estimated at several hundred thousand dollars in 1975, has reached the level of

hundreds of billions of dollars in recent times. However, the role of Islamic banking is still relatively small when compared to conventional banking.

The entire Islamic financial system is still in the early stages of development, but the various elements and institutions of this system are rapidly evolving and establishing. This includes Islamic commercial and investment banks, Islamic banking windows within conventional banks (including some prominent international banks), Islamic investment funds, Islamic insurance companies, and research and development institutions. However, the creation and establishment of different legal parameters of such a system and the establishment of full-capacity support institutions is a very complex process and a difficult task.

The Regulatory Framework of the Islamic Financial System

The foundations of Islamic economics came from the fundamental principles of Islam. Sharia, as a set of norms and rules of conduct to be adhered to by all Muslims in the world represents much more than law in the usual sense of the word. Sharia is a comprehensive and coherent set of legal rules, derived from God's revelation, which is a system of prohibitions and orders that govern relationships in all spheres of human action. Because they were created as a result of God's message, they are immutable and obligatory in praying for all Muslim believers. Only for those areas for which the Qur'an has not given clear guidelines, it can make laws, but there are strictly prescribed conditions and procedures by which the new laws must not in any way contradict, undermine or prohibit previous commandments of God. The law in the conventional sense of the word derives from the initiative of individuals or groups of people, and the sources of sharia are clearly defined and generally not subject to change. The sharia word in Islamic economics is mainly used to emphasize whether certain financial products are in accordance with the principles of Sharia. The terms "Sharia agree" and "Compatible Personal Sharia" are generally distributed product resulting in common financial institutions to emphasize that according to Islamic regulations, or Sharia. The view of Islamic scholars is that the products offered by Islamic financial institutions are developing, so "Sharia is justified" or "based on Sharia." The beginning of the Islamic economy is associated with the beginning of Islam, so it can be said that the Islamic economy is as old as Islam. But with the economic problems that were solved at the time of the formation of Islam are often associated with certain situations that are then current, and less on the study of a particular Tory and legality. Therefore, the study of Islamic sciences in the scientific-theoretical sense begins in the not-so-distant past, the main goal being to adapt to the fundamental values of Islam with a conventional economic approach.

The definition of Islamic economics will be that this is a special scientific theoretical approach, in the context of economics, which is a different way of trying to explain economic phenomena and laws, and define a coherent economic system that will be based on the basic values and norms of Islam. These definitions clearly show that the notion of Islamic economics is not a separate science, but it is only a part of economic science that seeks to harmonize economic theory on the Islamic acceptable way. The past of economic achievements in the

conventional economy is also widely used in the Islamic, which makes sense to accept things that conform to Islamic principles and join the Islamic economic system. Islamic banking and finance, in relation to the Islamic economy, are considerably known to the wider masses of people, unlike the Islamic economy, because the attention of time is increasingly directed towards them. Islamic economics is the fundamental foundation of Islamic banking and finance. Today, it is obvious that Islamic banking and finance are far more advanced than the Islamic economy. The development of the Islamic financial system has been very significant in recent decades. Initially considered utopian, today the Islamic financial system represents a reality that takes its place within the global financial system. In its short history, the Islamic financial system has seen ongoing improvements. The foundations of its construction were laid in the early twentieth century by a serious critique of the professions of economists who had acquired economic education at leading Western universities.

The government of individual countries has a very important role to play in the implementation of the Islamic financial system. Countries like Malaysia, Iran, Pakistan, and Sudan have from the very beginning created a different economic approach than the conventional one. There are also a large number of markets with a majority Muslim population and countries where minority Muslims makes a significant contribution to the development of Islamic economic thought. Some examples of countries with a minority Muslim population that have been involved in the development of Islamic finance are: Great Britain, Luxembourg, and Hong Kong, Singapore. Some of the Muslim countries have opted to establish a financial system that is fully compliant with sherry, thus reducing the dominance of conventional banks and interest systems. Examples of this type of implementation of Islamic finance are Iran and Sudan. However, most Muslim countries have not opted for such a radical move; they have started the gradual implementation of Islamic finance due to the lack of regulatory and legal framework for the successful functioning of Islamic finance and financial institutions. These countries have enabled the establishment and functioning of Islamic financial institutions in addition to conventional ones. Examples of this approach are, among others, Malaysia, Pakistan and Bahrain. Today, there are two models of implementing Islamic finance in the world. The first is a systematic approach to the development of Islamic finance, as is the case with Malaysia and the dual banking model. The second model is also known as an ad hoc approach in which neither the government nor the regulator recognizes the need for independent Islamic banks and regulatory frameworks.

Table 5: Development of the Islamic financial system Source:

	Country	IDB	ICIEC	ICD	ITFC	Membership of the Entities (out of 4)
	APPENDIX: Country Membership in the Entities of IDB Group					
1	Afghanistan	√	×	×	×	1
2	Albania	√	√	√	×	3
3	Algeria	√	√	√	√	4
4	Azerbaijan	√	×	√	×	2
5	Bahrain	√	√	√	√	4
6	Bangladesh	√	√	√	√	4
7	Benin	√	√	√	√	4
8	Brunei Darussalam	√	√	√	√	4
9	Burkina Faso	√	√	√	√	4
10	Cameroon	√	√	√	√	4
11	Chad	√	√	√	×	3
12	Comoros	√	×	√	×	2
13	Côte d'Ivoire	√	√	√	√	4
14	Djibouti	√	√	√	√	4
15	Egypt	√	√	√	√	4
16	Gabon	√	√	√	√	4
17	Gambia	√	√	√	√	4
18	Guinea	√	√	√	×	3
19	Guinea-Bissau	√	×	√	×	2
20	Indonesia	√	√	√	√	4
21	Iran	√	√	√	√	4
22	Iraq	√	×	√	×	2
23	Jordan	√	√	√	√	4
24	Kazakhstan	√	√	√	×	3
25	Kuwait	√	√	√	√	4
26	Kyrgyz Republic	√	×	√	×	2
27	Lebanon	√	√	√	√	4
28	Libya	√	√	√	√	4
29	Malaysia	√	√	√	√	4
30	Maldives	√	×	√	×	2
31	Mali	√	√	√	×	3
32	Mauritania	√	√	√	√	4
33	Morocco	√	√	√	√	4
34	Mozambique	√	×	√	√	3
35	Niger	√	√	√	√	4
36	Nigeria	√	√	√	√	4
37	Oman	√	√	×	×	2
38	Pakistan	√	√	√	√	4
39	Palestine	√	×	√	√	3
40	Qatar	√	√	√	√	4
41	Saudi Arabia	√	√	√	√	4
42	Senegal	√	√	√	√	4
43	Sierra Leone	√	×	√	×	2
44	Somalia	√	×	×	√	2
45	Sudan	√	√	√	√	4
46	Suriname	√	×	√	×	2
47	Syria	√	√	√	√	4
48	Tajikistan	√	×	√	×	2
49	Togo	√	×	×	×	1
50	Tunisia	√	√	√	√	4
51	Turkey	√	√	√	√	3
52	Turkmenistan	√	×	√	×	2
53	Uganda	√	√	√	√	4
54	U.A.E.	√	√	√	√	4
55	Uzbekistan	√	×	√	×	2
56	Yemen	√	√	√	√	4
	Total	56	40	52	37	-

AAOIFI in translation means an organization for calculating and auditing Islamic financial institutions. It was founded by Islamic financial institutions on February 26, 1990 in Algeria.

As an institution for issuing standards, it develops, prepares and publishes financial accounting standards and sharia standards through a system of analysis and drafting of regulations in consultation with experts within the industry. In addition to accounting and sharia standards, it also issues audit, management and ethical standards that constitute the components of the previous two standards.

The International Academy of Sharia Research in Islamic Finance (ISRA) is the result of sustained and systematic support provided by the Central Bank of Malaysia, together with the Government of Malaysia, to the Islamic financial industry of this country and beyond. The main goal of this academy is to promote applied research in the Sharia and Islamic finance fields. ISRA also aims to act as a repository of knowledge for Sharia attitudes or fetuses and to conduct studies on contemporary issues within the Islamic financial industry. It also aims to contribute to strengthening the development of human capital in the sharia field and to provide a platform for greater engagement among practitioners, scholars, regulatory agencies and academics through research and dialogue, both on the domestic and international scene.

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IFSB, which means in translation, means the Islamic Financial Services Committee, regulates and controls banks and Islamic financial institutions. The IFSB was founded by joint efforts by the International Monetary Fund, the Islamic Development Bank and several central banks in 2002 in Kuala Lumpur. The IFSB is an international standard-setting organization that promotes and improves the health and stability of the Islamic Financial Services Industry by issuing global industry governance bonuses, standards and principles, broadly defined to cover the banking, capital and insurance sectors. Since its inception, it has issued 19 standards and guidelines related, inter alia, to capital adequacy, risk management, transparency, corporate governance of Islamic institutions, etc. However, as with AAOIFI, these standards are not binding.

The Islamic International Rating Agency, established in 2005, is the main mission of this agency to facilitate the development of regional and national financial markets by showing relative investment or credit risk by providing an assessment of the risk profile of entities and instruments. As the only rating agency, it helps gain recognition in the local and international field as a strong and capable financial industry that follows high standards of information and transparency.

Today, since the establishment of the first Islamic bank, there are more than 150 Islamic financial institutions in the world. Countries in which Islamic financial institutions function are:

The last few decades have been marked by dramatic and frequent changes in the structure of the financial system, markets and institutions around the world. There are several reasons for such developments, which have irrevocably changed the nature of financial relations and contributed to the development of the "new financial system", which features: the possibility of

reminding large amounts of financing, the possibility of investing through a large number of financial instruments and the possibility of diversifying risks through different instruments in all segments of the economy. Of the countries listed above, we have selected the three countries that represent centers of Islamic economy, Great Britain, Malaysia and Saudi Arabia. The United Kingdom represents a country where the Muslim population is not majority, and where the Sharia law is not included in the regulatory framework. Below we will see how Islamic financial institutions fit into the UK regulatory framework. Malaysia is a country in which the Muslim population is majority, but where the law is not based on Sharia principles. In Malaysia, there is a dual banking system, which was previously mentioned. Saudi Arabia is a state where the law is based exclusively on Sharia principles.

Great Britain is one of the first non-Islamic countries to see the advantages of the Islamic financial system and open its doors to the development of Islamic financial institutions. Islamic finance has largely developed in the UK in the last decade. It is important to mention that financial transactions in line with Sharia on the London market took place in the 1980s. The main regulatory body of the financial system in the UK is the Financial Services Authority (FSA). Since 1998, the FSA and the Central Bank of England have been open to the development of Islamic finance in the United Kingdom. Sir Howard Davies, chairman of the FSA, told a conference in Islamic Banking and Finance in 2003 in Bahrain that Islamic banks are meeting the regulatory requirements of the FSA and that Britain has an economic interest in securing the conditions for the development of the Islamic market. The FSA was created in 1997 as a result of the need to regulate financial services. It was created by unification of 11 different regulatory bodies, which simplified the regulation of the financial market and allowed the FSA to assess as a whole the Islamic financial institutions and their products. All institutions that want to work in the field of financial services in the UK must apply to the FSA to obtain a license under Section IV of the Financial Services and Markets Act 2000 (FSMA), i.e. legal acts for financial services and markets. FSMA regulates financial services in the UK and provides legislation under which the institutions are allowed to deal with those financial services that are subject to regulation. Activities that are subject to regulation are for example: accepting deposits, executing insurance contracts and advising on investment months after they were approved by Parliament.

According to the Central Bank of Malaysia (Bank Negara Malaysia), which is also a regulator of the financial system, the goal is to put the Malaysian financial insurance sector (Tekaful), financial markets and the payment system, and other financial intermediaries on a single platform towards a responsible and progressive financial system. The FSA and IFSA consolidated rules determine the behavior and supervision of financial institutions in Malaysia. The new acts represent the consolidation of the Banking and Financial Institutions Act 1989, the Insurance Act 1996, the Takaful Act 1984, the Payment Systems Act 2003, and the Exchange Control Act 1953. Islamic financial institutions in Malaysia are regulated by the Central Bank of Malaysia. The Sharia Advisory Council (SAC) at the level of the Central Bank, which was established in 1997 as the largest authority on Islamic finance, plays a very important role. SAC has been granted the right to create Islamic laws for the purposes of Islamic banking, developmental Islamic financial business, business operations or any other business based on

Sharia principles and which is under the supervision and regulation of the Central Bank of Malaysia. As the reference and advisory body of the Central Bank of Malaysia for Sharia Issues, SAC is also responsible for approving all Islamic and Tekaful products in order to ensure their compatibility with sharia principles. In the act of the Central Bank of Malaysia, adopted in 2009, the role and function of the SAC has been further strengthened by being named the sole authorized body for sharia issues related to Islamic banking, tekaful and Islamic finance. Which means courts and arbitrators are obliged to adjudicate according to the decision of this body, and that its decision is binding.

Saudi Arabia is one of the most developed Islamic countries, and a country where the law is based exclusively on Sharia principles. The Saudi Arabian Monetary Agency (SAMA), which was created in 1952, is responsible for supervision and regulation. Its most important functions are:

• Dealing with banking activities of the Government;

• Emission and strengthening of the national currency;

• Management of foreign exchange reserves of the Kingdom;

• Monetary policy management in order to maintain price stability and foreign exchange rate;
• supervision of commercial banks;

• Supervision of mutual insurance companies;

• Supervision of financial companies;

• Supervision of companies that provide information on financial companies.

A great deal of importance in **SAMA** has an internal audit, which is an independent body. Her importance is reflected in the measurement and evaluation of the effectiveness of control and process.

Table 6: Overview of the regulatory framework for countries

Country	Bank system	Standard AAOIFI	Islamic Banking Law	Existence of sharia committees
Iran	Islamic	NE	Yes	No
Jordan	Duale	IAS	Yes	Yes
Kuwait	Duale	IAS	In consideration	Yes
Sudan	Islamic	Yes	Yes	Yes
Yemen	Duale	NE	Yes	Yes
Malaysia	Duale	IAS	Yes	Yes

Source: Iqbal Z., Introduction to Islamic Finance - Theory and Practice, Mate, Zagreb, p.257

Systematic Development and Functioning of Islamic banks

There are three basic sources of capital of Islamic banks:

1. Equity capital - represents equity investment (like investors in western banks); equity investors expect to make a profit on their stake in the bank's founding capital;

2. Transaction deposits - are formed primarily on the basis of savings deposits and / or deposits that are directly related to current payments at the client's order. Money from deposit savings accounts of a bank can be used with the depositor's license, with the bank guaranteeing a full amount of refund. Therefore, the bank usually invests money from such accounts into relatively low-risk short-term projects that are expected and low profit rates. A savings deposit is treated as a **Qard Hasen** loan given to a bank as its client waives all the benefits that may result from using its funds. Cash from current deposit accounts is used in the same way as in conventional banks, for making payments on demand, and the bank charges a commission for the services it performs. This deposit is guaranteed, although there is a practice for some banks to ask permission from depositors to use these amounts (or one part thereof) at their own risk;

3. Investment deposits - represent the main source of capital for Islamic banks. They are accepted for a fixed or unlimited period of time. This is in some way a share capital since these deposits are quite identical to the equity capital and there is no fixed rate of return of deposits or guarantees for the return of the identical amount of the deposit. Therefore, there is an agreement between the depositor and the bank that determines the terms and conditions of disposal and distribution of profits and losses. Some investment deposits can be used for all of the bank's investment projects, and for other banks, the contractor makes a contract on the principles of a male (or Mudareb) and uses them to finance specific projects in defined areas of activity such as: industry, housing construction, domestic and foreign trade, and land cultivation, and the like. Much of the money resources from this third source of capital compel Islamic bank staff to take a much more serious approach in assessing the economic and market justifiability of investment and business ventures.

Table 7: List of all Islamic banks in the world

Country	Bank
Albania	Arab Albanian Islamic Bank, Tirana
Algeria	Banque Albaraka D'Algerie, Algiers
Australia	a. MCCA (Muslim Community Co-operative, Australia) b. MCCU (Muslim Community Credit Union)
Bahamas	a. Akida Islamic Bank International Ltd b. Bank Al Taqwa Ltd c. Dar al Mal al Islami Trust, Nassau d. Islamic Investment Company of the Gulf Ltd, Nassau. e. Istishara Consulting Trust, Bahamas f. Massraf Faysal Islamic Bank & Trust, Bahamas Ltd.
Bahrain	a. ABC Investment & Services Co EC b. Al Amin Co. for Securities and Investment Funds c. Albaraka Islamic Investment Bank d. Arab Islamic Bank E.C e. Bahrain Islamic Bank Bsc. f. Bahrain Islamic Investment Co. Bsc. Closed g. Bahrain Institute of Banking & Finance h. Bank Melli Iran i. Chase Manhattan Bank N.A.

	j. Citi Islamic Investment Bank (Citicorp) k. Dallah Albaraka (Europe) Ltd l. Dallah Albarakah (Ireland) Ltd m. Faysal Investment Bank of Bahrain n. Faysal Islamic Bank of Bahrain (Massraf Faisal Al Islami) o. Gulf International Bank BSC p. Islamic Investment Company of the Gulf q. Islamic Trading Company r. ABC Islamic Bank s. ABN Amro Bank t. Deutsche Bank Rep office u. Investors Bank v. TAIB Bank of Bahrain w. Turk Gulf Merchant Bank x. Bahrain Monetary Agency y. Shamil Bank z. Khaleej Investment Company aa. First Islamic Investment Bank
Bangladesh	a. Albaraka Bangladesh Ltd (Dallah Al Baraka Group), Dhaka b. Islami Bank Bangladesh Ltd, Dhaka c. Faisal Islamic Bank
Britanska devičanska ostrva	Ibn Khaldoun International Equity Fund Ltd

Brunei	a. Islamic Bank of Brunei Berhad b. Islamic Development Bank of Brunei Berhad c. Tabung Amanah Islam Brunei
Canada	Islamic Co-operative Housing Corporation Ltd, Toronto
Cayman Islands	a. Ibn Majid Emerging Marketing Fund (International Investor Group) b. Al Tawfeek Co. for Investment Funds Ltd. Subsidiary of Albarka Group "DBG"
Denmark	Faisal Finance (Denmark) A/S
Džibuti	Banque Albaraka Djibouti
Egypt	a. Alwatany Bank of Egypt, Cairo b. Egyptian Company for Business and Trade S.A.E c. Egyptian Saudi Finance Bank (Dallah Al Baraka), Cairo d. Gulf Company for Financial Investment e. Faisal Islamic Bank of Egypt, Cairo f. Islamic Bank International for Investment and Development, Cairo g. Islamic Investment and Development Co., Cairo h. National Bank for Development, Cairo

France	a. Algerian Saudi Leasing Holding Co. (Dallah Al Baraka Group) b. Societe General c. Capital Guidance d. BNP Paribas
Gambia	Arab Gambian Islamic Bank
Germany	a. Bank Sepah, Iran b. Commerz Bank c. Deutsche Bank
Guinea	a. Massraf Faisal al Islami of Guinea, Conakry b. Banque Islamique de Guinee
India	a. Al Ameen Islamic Financial & Investment Corp. (India) Ltd., Karnatka b. Bank Muscat International (SOAG) c. Al-Falah Investment Ltd
Indonesia	a. Al Barakah Islamic Investment Bank b. Bank Muamalat Indonesia, Jakarta c. Dar Al-Maal Al-Islami Trust d. PT Danareksa Fund Management, Jakarta
Iran	a. Bank Keshavarzi (Agricultural Bank), Tehran b. Bank Maskan Iran (Housing Bank), Tehran c. Bank Mellat, Tehran d. Bank Melli Iran, Tehran e. Bank Saderat Iran, Tehran f. Bank Sanat Va Maadan (Bank of Industry and Mines), Tehran g. Bank Sepah, Tehran

	h. Bank Tejarat, Tehran
Iraq	Iraqi Islamic bank for Investment and Development
Italy	a. Bank Sepah, Iran b. International Trading Co. of Africa
Jordan	a. Jordan Islamic Bank (Subsidiary of Dallah Al Barka Group) b. Jordan Islamic Bank for Finance and Investment, Amman
Kuwait	a. Gulf Investment Corporation b. The International Investment Group c. The International Investor, Safat d. Kuwait Finance House, Safat e. Kuwait Investment Co - Dar Al-IsethmarSecurities House
Lebanon	a. Gulf International Bank, Bahrain b. Al Barakah Bank c. Bank of Beirut
Luxembourg	a. Faisal Finance (Luxembourg) S.A b. Faisal Holding, Luxembourg c. Takafol S.A d. Islamic Finance House Universal Holding S.A
Malaysia	a. Adil Islamic Growth Fund (Innosabah Securities Sdn Bhd), Labuan b. Arab Malaysian Merchant Bank Berhad, Kuala Lumpur

	c. Bank Bumiputra Malaysia Berhad, Kuala Lumpur d. Bank Islam Malaysia Berhad, Kuala Lumpur e. Bank Kerjasama Rakyat Malaysia Berhad, Kuala Lumpur f. Dallah Al Baraka (Malaysia) Holding Sdn Bhd g. Lembaga Urusan Dan Tabung Haji (Fund), Kuala Lumpur h. Malayan Banking Berhad (Maybank), Kuala Lumpur i. Multi-Purpose Bank Berhad, Kuala Lumpur j. United Malayan Banking Corp. Berhad, Kuala Lumpur k. Bank Muamalat Berhad, Malaysia l. Securities Commission m. Labuan Offshore Financial Services Authority (LOFSA) n. n. Islamic banking & Takaful Dept, Bank Negara Malaysia

Malaysian banks with "islamic windows"	a. Commercial Banks:
	   i. Affin Bank Berhad
	   ii. Alliance Bank Berhad
	   iii. Arab-Malaysian Bank Berhad
	   iv. Bank Utama (Malaysia) Berhad
	   v. Citibank Berhad
	   vi. EON Bank Berhad
	   vii. Hong Leong Bank Berhad
	   viii. HSBC Bank (M) Berhad
	   ix. Malayan Banking Berhad

	x. OCBC Bank (Malaysia) Berhad
	    xi. Public Bank Berhad
	    xii. RHB Bank Berhad
	    xiii. Southern Bank Berhad
	    xiv. Standard Chartered Bank Malaysia Berhad
	b. Finance Companies:
	    i. Alliance Finance Berhad
	    ii. Arab-Malaysian Finance Berhad
	    iii. Asia Commercial Finance Berhad
	    iv. EON Finance Berhad
	    v. Hong Leong Finance Berhad
	    vi. Kewangan Bersatu Berhad
	    vii. Mayban Finance Berhad
	    viii. MBf Finance Berhad
	    ix. Public Finance Berhad
	    x. United Merchant Finance Berhad
	c. Merchant Banks:
	    i. Alliance Merchant Finance Berhad
	    ii. Arab-Malaysian Merchant Bank Berhad
	    iii. Aseambankers Malaysia Berhad
	    iv. Malaysian International Merchant Bank Berhad
	    v. Affin Merchant Bank Berhad
	d. Discount Houses:
	    i. Abrar Discounts Berhad

	ii. Affin Discount Berhad iii. Amanah Short Deposits Berhad iv. BBMB Discount House Berhad v. KAF Discounts Berhad vi. Malaysia Discount Berhad vii. Mayban Discount Berhad
Mauritania	Banque Alabaraka Mauritaninne Islamique (Daslah Al Baraka Group), Mauritania
Morocco	a. Faisal Finance Maroc S.A b. The Netherlands c. Faisal Finance (Netherlands) B.V d. Faisal Finance (Netherlands Antilles) N.V
Niger	Banque Islamique Du Niger, Niamey
Nigeria	a. Habib Nigeria Bank Ltd b. Ahmed Zakari & Co
Oman	a. Bank Muscat International b. Bank Saderat Iran, Muscat c. Oman Arab Bank
Pakistan	a. Al Faysal Investment Bank Ltd, Islamabad b. Al Towfeek Investment Bank Ltd (Dallah Al Baraka Group), Lahore c. Faysal Bank Ltd, Pakistan d. National Investment Trust Ltd., Karachi e. Shamil Bank f. Meezan Bank Limited
Palestine	a. Arab Islamic Bank b. Arab Islamic International Bank (AIIB) Plc c. Cairo Amman Bank

	d. Palestine International Bank e. The Palestine Islamic Bank
Qatar	a. Islamic Investment Company of the Gulf Ltd, Sharjah b. Qatar International Islamic Bank, Doha c. Qatar Islamic Bank SAQ, Doha
Russia	BADR Bank
Saudi Arabia	a. Albaraka Investment and Development Co., Jeddah b. Al Rajhi Banking and Investment Corp., Riyadh c. Arab Leasing International Finance (ALIF) Ltd d. Faysal Islamic Bank of Bahrain E.C., Dammam e. Islamic Development Bank, Jeddah. f. National Commercial Bank Ltd, Jeddah g. Riyad Bank h. Saudi American Bank, Jeddah i. Saudi Holland Bank j. Bank Al Jazira
Senegal	Banque Islamique Du Senegal
South Africa	Albaraka Bank Ltd, Durban (Dallah Al Baraka Group)
Sri Lanka	a. Amana Islamic Bank b. Amana Takaful Limited
Sudan	a. Al Baraka Al Sudani, Khartoum. (Dallah Al Baraka Group) b. Al Shamal Islamic Bank c. Al Tadamon Islamic Bank, Khartoum d. Animal Resources Bank

	e. El Gharb Islamic Bank (Islamic Bank for Western Sudan) f. Faisal Islamic Bank of Sudan, Khartoum g. Islamic Bank of Western Sudan, Khartoum h. Islamic Co-operative Development Bank, Khartoum i. Sudanese Islamic Bank
Switzerland	a. Cupola Asset Management SA, Geneva b. Dar Al Maal Al Islami Trust, Geneva c. Faisal Finance (Switzerland) SA, Geneva d. Pan Islamic Consultancy Services Istishara SA, Geneva e. United Bank of Switzerland (UBS) f. Pictet & Cie
Tunisia	a. Beit Ettamwil al Tunisi al Saudi, Tunis (Dallah Al Baraka Group) b. B.E.S.T. Re-Insurance (Dallah Al Baraka Group)
Turkey	a. Albarakah Turkish Finance House Istanbul b. Emin Sigorts A.S c. Faisal Finance Institution, Istanbul. d. Faisal Islamic Bank of Kibris Ltd, Turkey e. Ihlas Finance House f. Kuwait-Turket Evkaf Finance House

	g. Asya Finans Kurumu A.S
United Arab Emirates	a. Abu Dhabi Islamic Bank b. Bank Muscat International (SOAG) c. Dubai Islamic Bank, Dubai d. Gulf International Bank, Bahrain e. Islamic Investment Company of the Gulf Ltd, Abu Dhabi. f. Islamic Investment Company of the Gulf Ltd, Sharjah Subsidiary of Dar Al Maal Islami Trust g. National Bank of Sharjah h. HSBC, Dubai i. National Bank of Dubai
UK	a. Albaraka International Ltd, London b. Albaraka Investment Co. Ltd, London c. Al Rajhi Investment Corporation, London d. Al Safa Investment Fund e. Bank Sepah, Iran f. Dallah Al Baraka (UK) Ltd., London g. Takafol (UK) Ltd, London h. Barclays Capital i. HSBC Amanah Finance j. ABCIB Islamic Asset Management, Arab Banking Corp
Ireland	a. Al Meezan Commodity Fund Plc, Dublin

	b. Jersey, UK (+534) c. The Islamic Investment Company, St Helier. d. MFAI (Jersey) Limited (formerly - Massraf Faysal Al-Islami Ltd, Jersey)
USA	a. Abrar Investments, Inc., Stamford CT b. Al-Baraka Bancorp Inc. Chicago c. Al-Madina Realty, Inc., Englewood NJ d. Al-Manzil Islamic Financial Services e. Amana Mutual Funds Trust, State St. Bellingham WA f. Ameen Housing Co-operative, San Francisco g. American Finance House h. Bank Sepah, Iran i. BMI Finance & Investment Group, New Jersey j. Dow Jones Islamic Index Fund of the Allied Asset Advisors Funds k. Failaka Investments, Inc., Chicago IL l. Fuloos Incorporated, Toledo OH m. Hudson Investors Fund, Inc., Clifton NJ n. MSI Finance Corporation, Inc., Houston TX o. Samad Group, Inc., Dayton OH p. Shared Equities Homes, Indianapolis IN q. HSBC, USA r. MEF Money, USA s. Islamic Credit Union of Minnesota, (ICUM) t. United Mortgage

Jemen	a. Islamic Bank of Yemen for Finance and Investment, Sana b. Saba Islamic Bank, Sana c. Faisal Islamic Bank d. Yemen Islamic Bank, Sana e. Yemen National Investment Co., Sana

Sorce: *Essay UK - http://www.essay.uk.com/free-essays/business/islamic-banks-in-the-world.php*

Financial instruments allowed by sharia

The financial instruments allowed by the Sharia are as follows:

• **Murabaha;**

• **Mudaraba;**

• **Muscat;**

• **Compressive;**

• **Idžara (leasing);**

• **Card Hasan;**

• **Salam;**

• **Mukareda.**

   Murabaha is the most important and most widely spread instrument of Islamic banking today. The bank buys for its client the necessary equipment, goods, materials, because he is unable to do so due to lack of funds. The Client first gives the exact specification what he needs and agrees to contract the same to buy and take over from the bank after it has obtained it under the most favorable conditions. The Bank will sell the subject of the contract to the client at a higher price than the purchase price, since it must also charge a commission. The commission or profit of a bank from this business transaction is known or, to be more precise, agreed upon by both parties. The interests of the client are reflected in the possibility that what they acquire in this way repay in installments and later. In this transaction, the bank performs a typical sales purchase, ie, trade transaction. Its profit is related to the purchase and sale, it must in one, at least for a short period of time, be the owner of the purchased funds (the ownership document over the assets will be with her until the transaction is completed in full). In other words, its profit stems from a real service, not on the basis of past payments. A notable tendency in the

future operation of Islamic banks is the increasing use of this funding instrument, because it is, in comparison with the Mudarab and Muharak, a less risky instrument. Perhaps it seems to be paradoxical in some ways because some Islamic theorists are trying to explain how this financial technique is not in the spirit of Islam to the extent that these other (mentioned) techniques are involved, which entail entering a risk based on trust in a business partner. However, the fact is that no Islamic bank can at the same time manage the quality of a large number of projects based on wise mansions and allow itself to depend on whether the other party with which it entered into the project will be managerial capable of securing profit (that is, loss) and be "fair and correct" and take into account the interest of the bank - its partner and its own interest (because although they are together in the project, always one from partners can cheat or sneak another if there are no good protection mechanisms that would disable it). Consumers use Murabah when buying home appliances, cars or real estate. Companies use this type of financing when purchasing machinery, equipment or raw materials. However, Murabaha is most often used for short-term trade, such as issuing letters of credit to importers. For users, the issuer, on behalf of the applicant, the importer issues a Murabaha letter of credit. The issuing bank agrees to pay the monetary amount in accordance with the conditions described in the letter of credit. Since the creditworthiness of the bank is replaced by that applicant, the beneficiary is guaranteed payment. This uses the exporter as the bank takes over the risk of payment.

Mudaraba represents the joint participation of the Islamic bank and its client in a particular project. The aim of the wise is to achieve the cooperation of the one who owns capital, but not the knowledge, the possibility, or the ability to manage a particular project, or simply perform the necessary activities within the business activity and who has the knowledge, capability and ability, but not (financial) of this project.

Mudaraba is a contract based on the agreement that the capital is provided by one participant (according to the logic of things - banks), and the work is from another (entrepreneur), and the right to participate in the profits of both sides is based on the fact that both parties are investors, although their roles differ qualitatively. There are no "witches" except with the condition of dividing profits between investors in an agreed proportion. This scale is agreed upon or determined at the time of signing the contract. It is not correct to determine the fixed amount of money to be paid to one party; The size of the division must be exclusively expressed in percentages. If, however, all the profits were attributed to the owner of the capital, the wise would become simple investments (with the payment of physical and intellectual labor at the market price), and if they would agree that the entrepreneur receives all the profits, then this is the so-called. Qard contract (not wise). The above remark highlights the line between the principles of direct investment, Qard and wisdom. In the wise therefore, the owner of the money shares the profits with the partner who works, but he himself bears all the risks of loss. In fact, it is not wrong to consider that the loss also covers the proportionate role of the participants in the business, with the bank losing part of the invested funds, and the "wise man" loses the effort, time, and its intangible as well as certain material investments (if any) . In other words, in case of loss, everyone loses what he has invested. Since the bank gives a certain amount to an enterprise, a private individual, an independent entrepreneur or his client, that he invests that money at his own discretion, as he considers it best, it is necessary to:

• A bank clerk previously seeks an elaborate or study of the intended investment, on the basis of which the bank, after the analysis, may refuse to make the requested loan.
• In case of loss, examination and conscientiousness and business of the client - wise, whether he did everything he could (when making money) to avoid losing. If not, if the loss was due to deliberate neglect, mismanagement, misuse of funds, etc. "Mudarib" is obligated to compensate the bank.

The fundamental question posed by itself is whether a bank - the owner of the capital - should "wait for a loss" or may also need to take measures to control the conscientious business of its client and during the project. The starting principle of wisdom is that one should not seek, expect and emphasize that the owner of the capital participates in this way in the project, but he can in the contract itself set many limitations on the basis of which we distinguish conditional and unconditional wisdom. Conditional clauses involve spatial and time constraints (an entrepreneur cannot use funds outside a zone permitted by a contract, for example, one or several states, after the expiration of a certain period of time, the contract ceases to be valid); may imply that the owner of the capital may suspend an entrepreneur and / or terminate the contract (with the entrepreneur being entitled to a realistic estimated remuneration for work up to that point) and that no merger of capital is allowed with the capital of another project owner of the same or another owner; Fig. Unconditional wisdom implies that an entrepreneur is free to conduct transactions at his discretion and that there are no restrictions in terms of work activities, time, places, customers, and so forth; that he can buy / sell for cash or credit, to appoint a third person to conduct business on his behalf, to move the assets of wise people to another country,

In principle, it is not customary that the mixing of personal capital of mudarbeas with the capital of wise men is the principle of "classical" wisdom, while in modern times "non-classical" wise men become the dominant rule since Islamic banks use their own equity capital together with depositor money. The significance of this innovation for the Islamic financing system is proving immense.

While Mudarabas are a form of "pure" financing, the male is an Islamic form of joint venture. According to some theorists, the most consistent form of a financial instrument is already exposed to Islamic principles. The bank and its client having a certain capital agreeably decide that each party "enters" a business with a role in the capital, to jointly participate in the management of the project, to consider on both capital and labor, and to share the costs necessary for the realization of the project, and finally to share both the gains and losses of joint participation in the business. **Musharak** is, therefore, the term used to describe a partnership formed with some economic and commercial purpose. There are different forms of partnership partners, with different characteristics, for example, unlimited and equal partnership in which partners enjoy full equality (but proportionate to their role) in the areas of capital, management and disposal rights, and in which each partner and executor of work and one who guarantees the other for that job or joint venture with certain limitations where, For example, the partner does not guarantee over the amount invested i.e. and for your partner and so on. Participation in the mule can be either in a new project or as providing additional funds to some existing ones. As with wisdom, the extent of the profit sharing must be agreed upon or concluded at the

time of signing the contract. And not just the size already, in the case of a flywheel, and a way of dividing the profits. Most often, the percentage for managing the project or for participating in the project work is paid out first. Since project owners can leave the right to manage the project only with one of them, and the bank can symbolically participate in the management of a project (for example, estimates that it is not staffed enough) and participate with a minor part in the distribution of profits on this basis. After that, the remaining profit is divided proportionally their money investments. In the event of loss - in addition to the resulting negligence and irresponsibility - they are borne by both parties in the same relationship as their respective roles.

Musharaka was once formed primarily on a short-term basis, and one of the partners was very easy to "withdraw" from this form of business relationship. This withdrawal did not create many problems with regard to the taxation of capital expenditures, the durable nature of business activities and reputation. In modern complex commercial practice, legal regulation and public control tied the mule for a longer period in a way that no partner could easily retreat from it and get back its invested capital. In other words, this is possible only if it settles all of its obligations as a partner under the terms and conditions set forth in the contract. Musharak as a form of joint financing, however, is a form of lending to a financially stronger and more stable partner, banks and as such represents significant assistance to an entrepreneur who has insufficient funds.

Continuous is a contract in which one party undertakes the production of a specific product that can be made only with the consent, supervision and financial support of the other party (the bank) and with a secure agreement on the details, with a certain price and a fixed delivery date. This undertaking involves a process of construction, construction, assembly, or packaging. As a tool for financing pre-delivery, a trademark is a contract where the sale may relate to something that does not exist at the time when the contract is concluded, as opposed to the **murabahe** which is the order of purchase of goods or goods that exist and / or can be found on the market. **Istisna** provides medium-term financing for the production / procurement of certain goods, such as industrial equipment, machinery, merchant ships, oil tankers, fishing boats, locomotives, transport equipment, and the construction of pipelines and gas pipelines, etc. In the Execution, the business is not conditional upon execution by the contractor and this work or part of it can be done by other persons under his control and responsibility. But the control of the undertaking itself in all its affairs related to a specific contracted project by the other party - the financier (the bank) always exists. The price of the funds in the Contest contract can be paid in one of two ways, in advance at once or at a rate during the production of funds. It is permissible to include the clause of a "penal" clause in the Extradition Agreement if the parties so agree.

As with **Murabahe**, the bank buys what its client needs, but it does not sell it anymore, but rents it. This is not a commercial transaction but a form of leasing transaction, although, as a rule, the client undertakes that after the expiration of the time in which he has leased certain equipment, goods or other such assets, he will repurchase (**paying the value of the unamortized par**t). This is implied in situations where the lease term (**fixed by the contract**) is shorter than the economic life of the subject of the contract, and it starts from the real

assumption that the client will then (for example, 5 or 10 years) be financially able to do so and the fact that The bank does not need the equipment that it rented to its client. Of course, after the expiration of the contract, the client has an alternative to return the object of the lease to the lessor and to replace the existing equipment with a new and more modern one. This is usually a practice that tens of thousands of drivers around the world place on the roads every year.

Qard Hasan قرض الحسن is the basic form of a non-interest loan. The Bank lends to the client a certain amount of money, and he is obliged to repay the principal only after the expiration of the due date. In other words, these loans are given without any accompanying conditions that the borrower would probably not be able to fulfill. The Bank usually approves this kind of loan to those clients with whom it has established regular business cooperation on the principles of wise and Murabaha or those who knowingly wants to help in the realization of a job or a specific project. The concept of Card Hasan can and should be understood as an expression of solidarity that opens the possibility for an Islamic bank to succeed in an area where many other agencies or governments have been denied. The advantage of this financial technique is that it is relatively easy to manage, and without high costs. Many Islamic theorists consider this the best method by which individual attitudes towards the common social goal can be modified. They believe that such financial practice can achieve the following:

• Expanding the market through increased purchasing power;

• Creating potential bank clients; encourage people to trust in the bank;

• Which later reflects on easier identification for entry and risk projects;

• Creating better interpersonal relationships between individuals and financial institutions;

• Supporting mutual cooperation, while eliminating one of the basic forms of exploitation;
• unemployment is suppressed.

In addition to the tools listed above and briefly explained, it is worth mentioning that Islamic banks offer all kinds of common banking services, such as cash transfers, exchange of foreign currencies at the current exchange rate, collecting and storing deposits, commissioning, buying and selling assets or handling deposits. In other words, in this field, the Islamic banks offer completely successful, as conventional (except perhaps credit letters where there is a possibility of interest rate) for a fee or a fixed price.

Salam means that the buyer pays in advance for a certain quantity and quality of the product, which can be delivered at a certain date, at an agreed price. This financial technique, similar to the pre-purchase contract, should be used in cases where the seller needs capital before it is able to deliver the goods.

Muqareda technique allows the bank to release the bail - bills with the aim of financing a specific project. Investors who buy mortgages - bills participate in the profits of a project that is funded in this way, but also participate in the risk of unexpectedly low profits or even losses. They have no say in project management and act as shareholders without voting rights.

Figure 5: Example of a Murabahe account

FIXED RATE MURABAHA / COMMODITY MURABAHA

Financing Amount	50,000,000.00		
Financing	9.00%	fixed	
Financing Tenure	5	years	
	60	months equivalent	
Average Monthly Instalment	1,037,917.76		
Total Selling Price	62,275,065.68		
Total Profit	12,275,065.68		
Adjusted Instalment	1,037,918.00	59	months
Adjusted Final Instalment	1,037,903.68	1	month

Month	Scheduled Instalments	Profit Amount	Principal Amount	Principal Outstanding
0				50,000,000.00
1	1,037,918.00	375,000.00	662,918.00	49,337,082.00
2	1,037,918.00	370,028.12	667,889.89	48,669,192.12
3	1,037,918.00	365,018.94	672,899.06	47,996,293.06
4	1,037,918.00	359,972.20	677,945.80	47,318,347.25
5	1,037,918.00	354,887.60	683,030.40	46,635,316.86
6	1,037,918.00	349,764.88	688,153.12	45,947,163.73
7	1,037,918.00	344,603.73	693,314.27	45,253,849.46
8	1,037,918.00	339,403.87	698,514.13	44,555,335.33
9	1,037,918.00	334,165.02	703,752.98	43,851,582.35
10	1,037,918.00	328,886.87	709,031.13	43,142,551.22
11	1,037,918.00	323,569.13	714,348.87	42,428,202.35
12	1,037,918.00	318,211.52	719,706.48	41,708,495.87
13	1,037,918.00	312,813.72	725,104.28	40,983,391.59
14	1,037,918.00	307,375.44	730,542.56	40,252,849.02
15	1,037,918.00	301,896.37	736,021.63	39,516,827.39
16	1,037,918.00	296,376.21	741,541.79	38,775,285.60
17	1,037,918.00	290,814.64	747,103.36	38,028,182.24
18	1,037,918.00	285,211.37	752,706.63	37,275,475.61
19	1,037,918.00	279,566.07	758,351.93	36,517,123.67
20	1,037,918.00	273,878.43	764,039.57	35,753,084.10
21	1,037,918.00	268,148.13	769,769.87	34,983,314.23
22	1,037,918.00	262,374.86	775,543.14	34,207,771.09
23	1,037,918.00	256,558.28	781,359.72	33,426,411.37
24	1,037,918.00	250,698.09	787,219.91	32,639,191.46
25	1,037,918.00	244,793.94	793,124.06	31,846,067.39
26	1,037,918.00	238,845.51	799,072.49	31,046,994.90
27	1,037,918.00	232,852.46	805,065.54	30,241,929.36
28	1,037,918.00	226,814.47	811,103.53	29,430,825.83
29	1,037,918.00	220,731.19	817,186.81	28,613,639.02
30	1,037,918.00	214,602.29	823,315.71	27,790,323.32
31	1,037,918.00	208,427.42	829,490.58	26,960,832.74
32	1,037,918.00	202,206.25	835,711.75	26,125,120.99
33	1,037,918.00	195,938.41	841,979.59	25,283,141.39
34	1,037,918.00	189,623.56	848,294.44	24,434,846.95
35	1,037,918.00	183,261.35	854,656.65	23,580,190.31
36	1,037,918.00	176,851.43	861,066.57	22,719,123.73
37	1,037,918.00	170,393.43	867,524.57	21,851,599.16
38	1,037,918.00	163,886.99	874,031.01	20,977,568.16
39	1,037,918.00	157,331.76	880,586.24	20,096,981.92
40	1,037,918.00	150,727.36	887,190.64	19,209,791.28
41	1,037,918.00	144,073.43	893,844.57	18,315,946.72
42	1,037,918.00	137,369.60	900,548.40	17,415,398.32
43	1,037,918.00	130,615.49	907,302.51	16,508,095.80
44	1,037,918.00	123,810.72	914,107.28	15,593,988.52
45	1,037,918.00	116,954.91	920,963.09	14,673,025.44
46	1,037,918.00	110,047.69	927,870.31	13,745,155.13
47	1,037,918.00	103,088.66	934,829.34	12,810,325.79
48	1,037,918.00	96,077.44	941,840.56	11,868,485.23
49	1,037,918.00	89,013.64	948,904.36	10,919,580.87
50	1,037,918.00	81,896.86	956,021.14	9,963,559.73
51	1,037,918.00	74,726.70	963,191.30	9,000,368.43
52	1,037,918.00	67,502.76	970,415.24	8,029,953.19
53	1,037,918.00	60,224.65	977,693.35	7,052,259.84
54	1,037,918.00	52,891.95	985,026.05	6,067,233.79
55	1,037,918.00	45,504.25	992,413.75	5,074,820.04
56	1,037,918.00	38,061.15	999,856.85	4,074,963.19
57	1,037,918.00	30,562.22	1,007,355.78	3,067,607.42
58	1,037,918.00	23,007.06	1,014,910.94	2,052,696.47
59	1,037,918.00	15,395.22	1,022,522.78	1,030,173.69
60	1,037,903.68	7,729.98	1,030,173.69	0.00
	62,275,065.68	12,275,065.68	50,000,000.00	

Sorce:https://islamicbankers.files.wordpress.com/2007/12/murabaha-sheet.jpg:

Figure 6: Participation of Islamic banking products in total demand for 2013

Use Of Islamic Banking Products-2013[1]

(1) Source: Islamic Development Bank-Islamic Banking and Finance Department Data Center
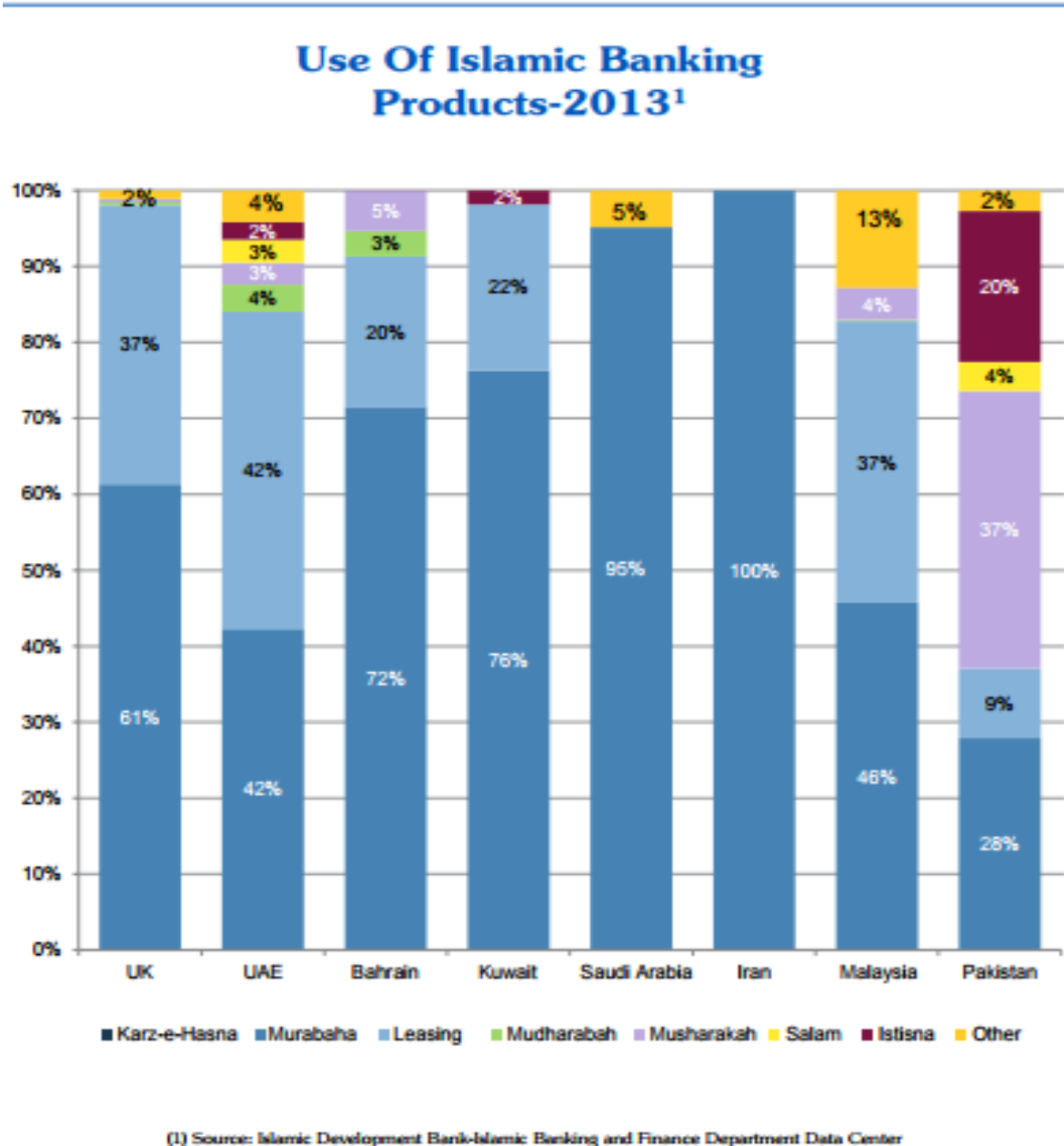
Source: http://tkbb.org.tr/Documents/Yonetmelikler/TKBB_Strateji_Belgesi_Ingilizce.pdf

Prohibited Jobs in Islamic Trade

Islam allows different forms of trade, but also sets certain limitations on the elements that may contain commercial transactions. The same restrictions apply to business transactions in the financial market. They can be divided into five basic groups:

Prohibited Goods, Services and Activities: Islam prohibits the production, trade, consumption and other activities with certain goods and services that are harmful to both the individual and his family, and the society as a whole. Examples of forbidden products, services and activities are alcohol, insecticides, drugs, pork, profits from monopolistic profits, corruption and bribery, abuse, pornography, games of chance, speculation, fraud, terrorism and other products, services and activities prohibited by sharia. The mentioned products, services and activities are considered unethical or immoral

Interest ban (Riba). Islam severely forbids interest and interest rates. In this way, it seeks to prevent injustice by which the creditor transfers all risk to the debtor, which is contrary to the basic teachings of the Qur'an, that is, the principle of Islamic finance, according to which "only in combination of human labor and capital follows a prize", that is, "there is no risk earnings ". This important principle of Islamic finance will be discussed in detail below

Ban on transactions that contain a high degree of uncertainty (**Gharar**): in jobs in which partners do not have sufficient knowledge of the subject of the sale, from the Islamic aspect, they are also prohibited. The same applies to trade in goods that contains the risk for a future buyer. The purpose of the prohibition is that illicit ways contain elements of fraud, which can lead to the illegal appropriation of someone else's property, that is, to conflict and hatred among people. An example of a **Gharar** is the sale: fish in the water; livestock that was not born; butter in milk; fruit that has not grown; Selling goods without the ability of the customer to see, inspect, experience or better meet; sales of products whose delivery will follow after several years; tied or bought two things together; or the sale of goods before we become its owner, the sale of non-existent goods and the like

Forbidden ways of trade: they are related to the types of purchase that Allah's ds. The Prophet (s) has forbidden. This relates to a sale that implies: payment of prices and delivery of goods in the future at the prices that have been determined today (bay-adien-bidien) or the sale of debt for debt. Permitted modes of sale include: delivery of goods today and payment of prices tomorrow, i.e. within three to five days (ba Val al-hal), delivery of goods today and payment of the price of a later date (bai 'muajjal) and payment of the price today and delivery of goods later date. Other prohibited activities: They relate to the "ultimate intention" or "end-user" of certain business activities. They will be allowed if the ultimate intention is not prohibited or the end user is not disputed. An example is the sale of land on which the buyer intends to build a factory in which to produce prohibited products (alcohol), provide prohibited services (nightclub) or prohibit activities or sell grapes to those who intend to produce wine from him.

This also applies to transactions that relate to the above prohibited products, activities and activities. So, for example, it is not allowed to invest in conventional banks that operate with interest. Capital market operations cannot be linked to prohibited products, services, and activities. In addition, **Islamic Fiqh Academy's attitude** is that companies value their main business, whether it is allowed or not.

Challenges Facing Islamic Bankruptcy

Despite the extremely high rate of growth of Islamic finance and banking in general throughout the world, it still faces numerous challenges as an industry.

The lack of a qualified workforce is one of the biggest challenges facing Islamic banking today. Qualified workforce plays a key role in the growth and development of any economy, and this is the case in Islamic finance. There is a big lack of educated bankers and professionals who have knowledge of Islamic law and the right that is needed for a parallel understanding of economics and finance. At present, different universities and training institutes offer courses on Islamic finance, but also face the lack of competent human resources to implement these courses. There is also a huge lack of human resources at the professional level.

There remains a significant shortage of sharia scholars who are well acquainted with Islamic finance. Business schools and religious schools should offer Islamic financial qualifications in cooperation and linking with industry experts to create the next generation of expert scholars. Academic institutions should also be encouraged to establish knowledge centers for Islamic financial systems

Islamic law applies to differences of opinion and interpretation of classical Islamic texts. This leads to different practices and policies adopted in different jurisdictions. This can affect the Islamic Finance industry. Laws on Islamic finance, policies and practices should be standardized and harmonized in the designs to create more unification and consolidation within the industry. This would strengthen the industry from the perspective of Sharia and take advantage of weak and rejected views. In addition, Sharia scientists should adopt these policies and procedures to prevent and mitigate the wider risk of non-compliance.

The lack of public awareness implies a low level of penetration and a lack of critical mass in the Islamic financial industry. This is mainly due to the lack of public awareness and knowledge of Islamic finance. Islamic banks, regulators and governments should undertake mass awareness programs to foster the growth of Islamic finance and create critical mass for industry. There remains a great need for harmonization of the Sharia law with the existing legal framework. This creates great difficulties and challenges in the event of disputes and legal issues, since Islamic financial concepts are not recognized by certain legal frameworks.

There should also be a movement for creating innovative products and a gradual shift from products that are similar to conventional financial products such as the Murabaha product.

Islamic banks are exposed to various risks such as displaced commercial risk (DCR). This leads to the Islamic banks losing profit in order to pay comparable returns to the owners of

investment accounts (IAHs) and depositors. This creates enormous challenges for Islamic banks in creating excess reserves to cover losses and how this is viewed from a regulatory perspective. Islamic banks also face the risk of investing in capital, the risk of a return, the risk of non-compliance with Sharia in the event of a perception of non-compliance and liquidity risk due to the lack of liquid products. Other challenges include the different interests of the owners of investment accounts and shareholders of the Islamic Bank. One of the main questions is that IAH shares the winnings and bears losses, but they do not have the right shareholders. This leads to a lack of transparency in reporting on profits and losses for IAH. Different standards have been issued by IFSB and AAIOFI. However, many jurisdictions have failed to apply these standards. There is also a huge challenge in adopting compliance with Sharia. Different jurisdictions do not regulate or oversee the way of adopting sharia compliance. There should be appropriate criteria for selecting Sharia scientists. Many jurisdictions have begun to adopt central sharia committees to ensure harmonization of sharia compliance within the industry.

Muslim countries have shown a lower level of financial inclusion than other countries in the world. This can be solved by creating a better business model, reforms to increase competition in the banking sector, consumer protection, better credit information and education.

Money and interbank markets for instruments that are compatible with Sharia have not yet been developed in most countries, partly because of the lack of available instruments. There remains a huge lack of a Sharia central banking facility. In addition, many Islamic banks operate under the dual system of the conventional and Islamic banking framework and have great influence on them as a result of conventional banking instruments and conditions. Central banks should adopt more effective instruments and policies for Islamic banks. Many jurisdictions do not have a lender in the last case for Islamic banks. Only 6 of the 24 jurisdictions for Islamic banking have a lender of ultimate solution for Islamic banking.

Regulatory / tax reforms play a key role in the growth of any industry. There remain many tax issues that need to be solved in order to balance the burden between Islamic banks and conventional banks. Some of these issues include the treatment of Islamic finance from income tax, sales tax (for example, value added tax), specific transaction taxes and bilateral tax treaties. International standards can encourage governments and jurisdictions to ease tax reforms. Using a conventional benchmark (Libor) creates a negative perception among investors who tend to link the Islamic financial system to the conventional financial system due to the use of a benchmark based on interests. In addition, Islamic banks are placed at the mercy of the movements in conventional money markets using a conventional benchmark based on interests.

Market Position and Role of the Banking System in the Global Financial Market

The Islamic financial[45] sector has recorded remarkably high growth rates for years, with the total assets of this sector, i.e. assets held by Islamic banks, investment funds and insurance companies, estimated in 2013 to USD 1.8 trillion. Compared to the assets of conventional banks, whose assets are estimated at more than $ 70 trillion, insurance companies at $ 20 trillion

and investment funds, active Islamic financial institutions account for less than one percent of total assets in the global financial market? By the number of participants, the number of transactions executed and the value of assets, Islamic banking systems are in the midst of a global financial market.

Graph 1: The structure of the Islamic financial market
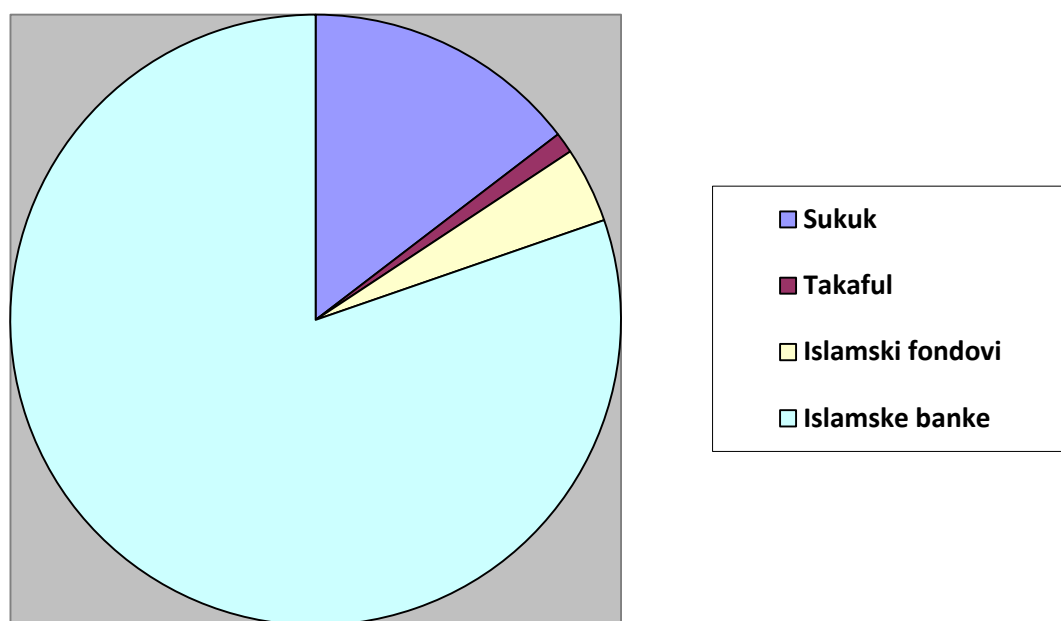
Source: Mauro F., Caristi P., Couderc S., Di Maria A., Ho L., Grewal B.K., Masciantonio S., Ongena S., Zaher S., 2013., *Islamic finance in Europe,* European Central Bank, occasional paper series No 146, str.19

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[45]Mauro F., Caristi P., Couderc S., Di Maria A., Ho L., Grewal B.K., Masciantonio S., Ongena S., Zaher S., 2013., *Islamic finance in Europe,* European Central Bank, occasional paper series No 146, str.18

More than 80% of the Islamic financial system refers to banking activity, followed by the market of **Sukuka** with 14.6%, while **Takaful**[46] in bandage and makes slightly more than 1% of the Islamic financial market. The largest concentration of assets is in the Gulf States, where more than 410 billion USD are located in the assets of Islamic banks. In Asia, Islamic banks have $ 144.8 billion, while total assets of Islamic banks in Europe and North America are estimated at $ 42.9 billion.

The largest emerging banking market is Iran with 42.7% share, followed by Saudi Arabia with 12.2%, Malaysia with 10% and United Arab Emirates with 8%. In Asia, where the majority of the Muslim population lives, only 15% of the value of assets of Islamic financial institutions is concentrated. Indonesia, a country with a large Muslim population, has a relatively small and underdeveloped Islamic banking market. In the countries of sub-Saharan Africa, about 1% of the assets of Islamic banks are concentrated.

In addition to Iran and Sudan, in which, according to the state and religious authorities, the financial system is fully adapted to the principles of sharia, in other Islamic countries of the MECs, in which coexisting conventional and Islamic financial systems, is still based on the value of assets, primacy on the side of conventional banks. Namely, apart from the banking market of Bangladesh, where 65% of the value of the property is concentrated in the assets of Islamic banks, the value of assets held by Islamic banks in the financial markets of other OIC members is well below the value of the assets of conventional banks[47].

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[46]Mauro F., Caristi P., Couderc S., Di Maria A., Ho L., Grewal B.K., Masciantonio S., Ongena S., Zaher S., 2013., *Islamic finance in Europe,* European Central Bank, occasional paper series No 146, str.19
[47]OIC, 2012. *Islamic finance in OIC member countries,* Statistical, Economic and Social Research and Training Centre for Islamic Countries, str.4

Term Takafula

All human activities are at risk of loss and unforeseen events. In order to alleviate this burden on individuals, what we now call insurance has existed since at least 215 BC. This concept has been practiced in various forms for more than 1400 years. It originates from the Arabic word **Kafalah**, which means "guaranteeing one another" or "joint guarantee". The concept is in line with the principles of compensation and shared responsibility among the community. Takaful was created within the ancient Arab tribes as a joint responsibility that obligated those who committed crimes against members of another tribe to compensate victims or their descendants. This principle was later extended to many layers of life, including the trade in seas, in which participants contributed to the fund to cover anyone in a group that suffered accidents on the sea routes. In modern conventional insurance, the insurance provider (insurance company) sells the policy and invests a property benefit in favor of its shareholders, who are not necessarily insured. Therefore, there is a clear disagreement between the insured and the shareholders. Payments to insured persons may vary depending on the financial effect, but the minimum positive return is always agreed upon. Takaful is usually called Islamic insurance; this is because of the apparent similarity between the contract on coffee (guarantee) and insurance. However, **takafu**l is based on the principle of cooperation and on the principle of separation of assets and operations of shareholders, which is the ownership of Takaful (Insurance) fund and business of the insured. Muslim lawyers conclude that insurance in Islam should be based on

principles of reciprocity and co-operation, including elements of shared responsibility, common indemnity, common interest and solidarity. In such a case, insured persons are joint investors with a **takaful** operator, who acts as a wise man - a manager or an entrepreneurial insurance agent. Owners of insurance share in the profit of an investment association, as well as losses. Positive returns of policies are not legally guaranteed, as any guaranteed guarantee of profit would be similar to receiving interest and offend the ban on interest.

For some time, conventional insurance has been considered incompatible with sharia, which prohibits excessive uncertainty in operations and investments in interest-bearing assets. Both are inherent factors in conventional insurance. However, **takaful** agrees with the sharia (which points to the principles of compensation and shared responsibility among the community) and approved by Muslim scholars. Now there are general, health's and family (life) **Takaful** plans for Muslim communities.

Islamic Insurance requires each participant to contribute to a fund used to support each other, with each participant providing sufficient amounts to cover the expected demand way:

Owners of insurance cooperate among themselves for their common good. Each insurer pays part of the contribution as a donation to help those in need. Losses are divided, and commitments are spreading according to the community association system. Uncertainty is eliminated in terms of subscription and fees. It is not required to take advantage of the benefits at the cost of others. Theoretically, Takaful is perceived as co-operative insurance, whereby members contribute to a certain amount of money in a common pool. The purpose of this system is not profit, but to support the principle of "we carry goods to one another".

In modern business, one of the ways to reduce the risk of loss due to an accident is insurance. The concept of insurance in which resources are combined to help the poor does not necessarily have to be contrary to Islamic principles. Some important differences differ from conventional insurance from Takaful:

• Conventional insurance includes elements of excessive uncertainty (**Gharar)** in an insurance contract;

• Gambling (**Maisir**) as a result of the presence of excessive uncertainty that relies on future outcomes;
• Interest (Riba) in the investment activities of conventional insurance companies;
• Conventional insurance companies are motivated by the desire for profit for shareholders;
• The conventional insurance system may be subject to exploitation. For example, it is possible to charge a high premium (especially in monopoly situations) with the full benefit of such a business going to the company.

The key difference between Takaful and conventional insurance is based on the way risk assessment and handling is handled, as well as how it is managed by Takaful Fund. Further differences are also present in the relationship between the operator (under conventional insurance using terms: the insurer) and the participants (under the conventional insured or insured). Takaful business is also different from conventional insurance where insurance

owners, and not shareholders, only benefit from the profits earned by Takaful and investment assets.

All participants (insured) agree to guarantee one another and, instead of paying premiums, contribute to a joint fund or pool. Group of collected contributions is created by Takaful Fund. The amount of contributions each participant makes is based on the type of coverage they require and on their own personal circumstances. As in conventional insurance, policy (Takaful contract) determines the nature of the risk and the coverage period. The Takaful Fund managers and administers on behalf of the Participants by Takaful Operator who charges a contracted cost to cover costs. These costs include the costs of sales and marketing, insurance and damage management. All participant receivables are paid from the Takaful Fund and all remaining surpluses, after provisioning of the probable costs of future receivables and other reserves, belong to the participants in the fund rather than to the Takaful operator and may be distributed to the participants in the form of dividends or cash distribution, alternatively in reducing future contributions.

There are different models of Takaful according to the nature of the relationship between the company and the participants. There are Vakals (Agencies), wise men and their combination. In a Sudan **Takaful** model, each insured is a shareholder in it. An operator starts a business on behalf of the participant and no separate entity manages it. Sherry experts consider this a more desirable way. In other Islamic countries, the legal framework does not allow such arrangement and Takaful companies to work as separate subjects based on wise men (in Malaysia) and **Vakals** (in the Middle East). In the wisdom model that is mostly applied in the Asia-Pacific region, insured persons get all available profits only on their assets. The Sharia Committee of such a company approves the exchange ratio for each year in advance, most of the costs are charged to shareholders. In the wakeboard model, the surplus of the insured's investments - without management fee or cost - goes to insurance. Shareholders collect a wage fee and this covers most of the operating costs. The fee is fixed annually in advance with consultations with the company's supervisory board. Management fee refers to performance.

As Islamic finance continues to expand, it is likely to be a major takeoff of other products, such as pensions, education, marriage and health plans of Takaful. There is also a huge space for Takaful's mortgage. Islamic principles are strongly emphasized in Takaful on economic, ethical, moral and social dimensions, in order to improve equality and fairness for the good of society as a whole. In modern society, insurance has become a necessity in the field of trade and industry. Life insurance has become the most effective means of mobilizing savings, capital formation and long-term investment, as well as providing age and grievances in the event of the death of individuals. In the west, the insurance sector is the largest for insurance in Islamic countries, because Muslims believe insurance is non-Islamic. Therefore, the development of Islamic insurance requires extensive education of the Muslim public, in addition to the development of resources and expertise, the legal framework for this, the alignment of practices, the development of new instruments harmonized with Sharia, the accounting standards and arrangements for **Retakaful**.

Graph 2: Growth of the global Islamic insurance market

Source:https://www.celent.com/insights/984032433
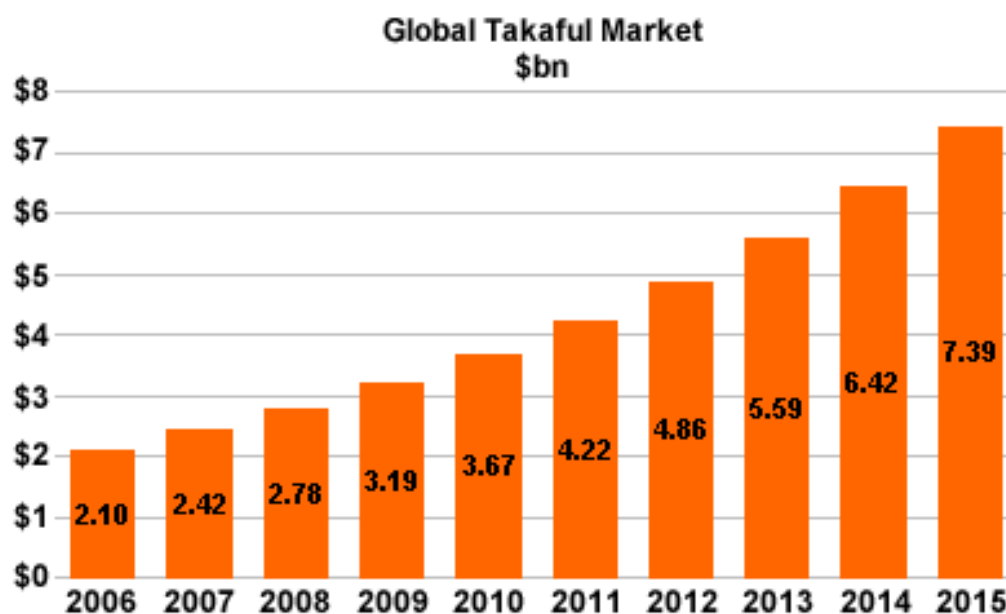
Third Generation Finance – concept of Islamic banking in Latin America

The importance of **Islamic Banking** - **Third Generation Finance (**TGF) as a form of international movement of capital is reflected in positive effects that have on the economic development of the host country. In modern conditions of globalization there is the view that FDI get the role of the key levers of economic development. The advantage of TGF in relation to other forms of capital flows is reflected primarily in additional resources such as technology, Managerial and organizational knowledge, access to foreign markets, etc.

Also, TGF enhances economic development of the host country through improvement of the factors of economic growth, life standard and prosperity of the country as follows:

-By transferring capital without IMF conditions (which directly increases its Potentials of growth),
-By transferring new technologies and business practices according to ethical Conduct, based on real assets,
-By improving the quality of human resources through the training of the local workforce,
-By supporting and expanding exports of industrial products (halal product) and by increasing the efficiency of the national economy, directly and indirectly.

The potential benefit that the recipient country can achieve by implementing TGF, this research is observing them from the macro and micro aspects. Macro aspect benefits of TGF is primarily reflected in: improvement in the trade and payment balance of the country, faster and more efficient matching of the domestic economy on to world markets, improvement of supply at the domestic market, increase in the number of employed people, living according the Islamic rules, accordance with the spirit ... etc. By observing it from the micro aspect, recipient companies achieve the following benefits: Partnership in company, Joint Venture, they come faster and cheaper to modern technology, create conditions for expansion of business cooperation with foreign partners and on third markets, participation of Profit & Loss Sharing, introduce contemporary organization of work and acquire more contemporary knowledge in the field of market research and promote financial justice.

What is TGF- Islamic Banking (TGF)?

Islamic Banking is a system of banking that is in accordance with the spirit, character and value system of Islam and is guided by Sharia principles. Central to this form of banking is that money itself has no intrinsic value and cannot increase on its own. In order to increase money must be used in a productive manner, so invest in real goods. **Creating money from money alone is prohibited, therefore interest is not allowed.**

The Benefits of Islamic Banking (TGF)

• Based on real assets.
• Profit & Loss Sharing.
• Partnership in company, Joint Venture.
• Promote financial justice.
• Development based on useful things for people and nature.

Why THIRD GENERATION FINANCE (Islamic Banking)?

The principles of 'Islamic Banking' are based on the balance between well-being and prosperity. That means: not only a company has to flourish, also you as a person. This banking system is therefore tailor-made for every step. Focus not only on quantity, but also on quality. "Islamic Banking" based on equality, risk sharing and ethical conduct, in particular preventing infringement of the rights of others.

Thrd Generation Finance- ISLAMIC BANKING IN SURINAM

BACKGROUND

In 2017 was open the first Islamic bank in the entire South American region, Trust bank Amana in Suriname. They guided this conventional bank through the journey of transformation into a fully-fledged Islamic bank. The Bank services included advising on sharia governance and product development, legal support, human resources, IT solutions, accounting, Treasury, risk management, and marketing and communications support.

OUTCOMES

The project was quite complex, due to the novelty of the concept of Islamic banking in the entire South American region and the absence of Islamic banking regulations from the Central bank of Suriname. The bank was able to overcome the challenges thanks to the remarkable commitment of the Trust bank management team, the support from the government and regulators in Suriname, and the acceptance of the public.

Trust bank Amana, together with its international partner Islamic Corporation for the Development of the Private Sector (ICD), are offering financing capital to the private sector for the development of Micro, Small and Medium Enterprises (MSMEs). It concerns financial services in which prosperity, equality and partnership between entrepreneur and bank are the Ultimate goals of development-oriented initiatives. MSMEs are crucial for the economic and social development of emerging markets. They play an important role in economies: creating jobs and generating income, promoting economic growth, social stability and contributing to the development of a dynamic private sector.

Access to financial services is essential in developing a dynamic MSME sector in every economy. As a result of a number of factors including limited access to financing, Trust bank Amana[48] wants to use Islamic Finance to stimulate development.

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[48] https://www.trustbankamanah.com/media-en/understanding-islamic-finance-theory-and-practice

The transformation from Trust bank (conventional) to Trust bank Amana (Islamic banking) takes place in 2 phases:

• At the transition (1st phase) The Bank offer options such as savings, investments and loans. The second phase involves expanding the possibilities to complete the service, whereby products and services such as current account, internet banking, credit cards etc. are offered.

Third Generation Finance- ISLAMIC BANKING IN BRAZIL

Brazil's sheer market size could be a strong draw49. "Brazil ... has a large and well-regulated financial market and legal system that could provide the tools with which to build local sharia-

compliant financing structures," says Glen Roberts, chair of the SNR Denton law firm's Islamic finance and investment practice.

"Brazil is also appealing because the country itself has a significant agricultural sector that should be appealing to sovereign funds from Saudi Arabia, Qatar and elsewhere in the GCC that are investing for food security in the Gulf region." **Qatar** leads Middle Eastern investors in Brazil. Last October, **Qatar Holding invested $ 2.7 billion to take a 5% stake in Banco Santander's Brazilian** unit.

Qatar's investment agency earlier in 2010 was eyeing a minority stake in Petro bras, Brazil's state-controlled oil company, after already acquiring a $300 million stake in Brazil's Vale, the world's largest iron ore producer. Brazil, on the other hand, has become
one of the world's largest exporters of halal foods and has hosted several Islamic finance events to educate local market players.

According to Monem Salam, director of Islamic investing at Saturna Capital, Islamic finance could prove beneficial for microfinance. "As poverty is prevalent in most South American countries, rather than implementing an interest-based micro lending program that charges well above usurious rates,

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49 www.financialislam.com/news/islamic-finance-in-latin-america.

one could look into an Islamic micro-finance program, sharing in the profits of the small business owners until they can buy out the partner," he says.

"The opportunities for the [Islamic] financial institutions are in serving as a commercial bridge between Latin America and the Islamic markets in the Gulf and Islamic Asia," says Roberts. "For Latin American markets, the introduction of Islamic financial institutions will likely expand the sources of capital available to the region, which is crucial for development."

Brazil already boasts a good level of trade flow with Islamic countries. Trade flow growth over the last 10 years has been above 400%.

A good example of this is the export of Halal certified chicken. According to the Brazilian Aviculture Union (Ubabef), Brazil exported 1.48 billion tons of chicken to Middle Eastern countries in 2013.

The good results are the consequence of a partnership in which the Brazilian market respects and complies with the requirements of the Islamic market. The good news is that the goal of transforming Brazil into an economic and financial hub in South America for Islamic finance investors now seems to be coming increasingly within reach, as illustrated by a number of recent initiatives.

Sharia Compliant Equity Fund

In the first week of June, one of the largest Brazilian[50] fund managers created, after three years of study, an investment fund specifically for Islamic investors. It is an equity portfolio with underlying assets which observe the Sharia law. Reports indicate the fund manager invested one year of careful work to build a premium portfolio, which is mostly concentrated on Brazilian commodities and the mining, oil and gas sectors. In addition to these being sectors that respect Islamic principles, this manager believes such stocks would have a positive outlook in the long term. Construction and public services are also part of the portfolio. The manager has signed a partnership with the Islamic Bank of Asia, which helped define the rules for the fund and analyzed whether the asset composition of the fund was Sharia compliant.

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[50]https://www.eurekahedge.com/Research/News/1180/Brazil-and-Recent-Deve lopments-in-Islamic-Finance-Initiatives.

Third Generation Finance – concept of Islamic banking in Germany Case study.

1. Branches: Branches in Berlin, Frankfurt, Cologne, Mannheim and Munich. KT Bank, a part of Kuwait Finance House.

KT **Bank**, a part of Kuwait Finance House. They offer a service to open an Account. Highlights: Online Banking Option Available.

Business Account • Participation Account • Online / Mobile Banking • Investment Loan

Islamic bank in Germany and in the Eurozone support your business where it is important - at the financial base.

The functionality of your KT Business Account is as efficient as it is flexible. They offer you online banking, Maestro, and many more practical benefits for day-to-day operations and for good business conscience. One can also benefit from their special corporate client service by their competent consultants.

2. Business Account in different currencies.

They provide business account services in below currencies:

- **Euro**

- **TRY – Turkish Lira**

- **USD – United States Dollar**

- **GBP – British Pound**

- **CHF – Swiss Franc**

- **SAR – Saudi Arabian Riyal**

- **KWD – Kuwaiti Dinar**

- **AED – United Arab Emirates Dirham**

- **JPY – Japanese Yen**

- **QAR – Qatari Riyal**

3. KT Participation Account

Deposits with profit participation. Bank and business are now investing together.

Build sustainable business assets.

The deposit business is coined by the idea of profit-sharing. For a solid build-up of business assets, they offer their KT Participation Account with fixed terms of 3 to 36 months. Due to the Islam-compliance, specified returns for the deposits cannot be confirmed.

Together to Profitable Returns.

With your deposit, you participate in the success of the underlying financing portfolio. At contract inception, an allocation formula (e. g. with a participation rate of 85%) is agreed. The profit then achieved is shared between you and us in accordance with this allocation formula after deduction of the fixed product-related costs. In the mentioned concrete example, you gain 85% and the KT Bank gains 15 % of the achieved profit. We strive for returns that are aligned with the market.

The advantages of the KT Participation Account:

- Stable and interest-independent returns
- Safe profit sharing
- Above-average profits

4. Certificates

Here are certificates of the most popular products of KT Bank AG. They were issued by Ethics Council.

Certificates

- KT Participation Account

- KT Real Estate Financing

- KT Instalment Loan
- KT Car Financing
- KT Business Loan

5. Online-/ Mobile Banking & PSD2

Banking around the clock. Online and via App.

Banking anytime and everywhere

We are open around the clock – the KT Online Banking and the KT Mobile Banking App allow you to conveniently manage your bank accounts and transactions whenever and where you want – digitally, safe and easy. Whether you login to your online banking at home or manage your transactions via app while on the move - you have access to your accounts independently of business hours or location.

The advantages of the KT Online Banking and KT Mobile Banking:

- Banking 24/7
- Flexibility anywhere, anytime
- 0, - costs
- Digitally, safe and easy

Essential functions:

- All KT Bank accounts at a glance (Current Account, Participation Account, a.s.o.)
- Easy opening of additional KT Bank accounts with a few clicks
- SEPA credit transfers or international transfers
- Current exchange rates and precious metal prices
- Buying and selling foreign exchange and precious metals during business

KT Bank Account Change App Essential functions:

- Automatic determination of your payment partners and standing orders on the basis of your former account data
- Creation of sample letters to inform your payment partners
- Free-of-charge shipping service
- Template for closure of your former account

- Everything in view due to intelligent auto-categorization

The most important aspects:

- Two-factor authentication for online and mobile banking
- Third-party-provider (TPP) access
- More security & faster banking – online and via App
- Enhanced consumer protection

6.KT Investment Loan

With our investment loans we provide the appropriate foundations for the financing of your business and thus satisfy its individual investment needs.

Following examination of the application, instead of remitting the money to you, we grant you authorisation to buy the respectable capital goods in our name.

Direct payment will be made by us to the vendor concerned. You will receive a separate invoice from us. You then pay the total amount back to us very conveniently in manageable instalments. The term of your investment loan can be varied to suit the liquidity planning of your business.

Chap. III:

Analysis of the influence of Islamic banking (Third Generation Finances) on the economic indicators of the development of Iran and Saudi Arabia

An overview of the political and economic situation in Iran

The Iranian economy receded rapidly in 2016, according to estimates by the World Bank; it grew by about 6.4%. The latest data available for the first half of the Iranian calendar year (end of March 2017) indicate that the Iranian economy grew at an accelerated pace of 9.2% (annually) in the second quarter.

Iran is the second-largest economy in the Middle East and North Africa region, after Saudi Arabia, with an estimated GDP of $ 412.2 billion for 2016. Also, the second is the size when taking into account the number of inhabitants, after Egypt, and it is estimated that 78.8 million people live in Iran in 2015.

Iran is in second place by natural gas reserves and is fourth in proven reserves of crude oil. Economic activities and revenues of the government continue to depend heavily on oil revenues and therefore remain unstable. The Iranian authorities have adopted a comprehensive strategy that includes market-based and development-related reforms, which is maintained in the form of a twentieth-year government vision document and sixth five-year development plan for the period 2016 to 2021. The six-year development plan consists of three pillars, which is the development of an elastic economy, advances in science and technology and the promotion of cultural heritage.

 On the economic plan, the development plan envisages an annual rate of economic growth of 8% and the reform of state-owned enterprises, the financial and banking sector and the distribution and management of oil revenues among the main priorities of the government during the five-year reform period.

The Iranian government has implemented a major reform of the subsidized program on key factors such as oil products, water, electricity and bread, resulting in a moderate improvement in cost efficiency and economic activity. Total indirect subsidies, estimated at an equivalent of 27% of GDP in 2007/08 (approximately $ 72.2 billion), were replaced by a direct money transfer program for Iranian households.

The second phase of subsidy reform started in spring 2014, which includes a gradual adjustment of fuel prices, as previously predicted, and greater targeting of cash transfers to low income households. About 3 million high income households have already been removed from the list of recipients of cash transfers. As a result, it is estimated that the costs of the Targeted Subsidy Organization (TSO) are reduced to 3.4% of GDP in 2016, from 4.2% in 2014.

After a reduction of nearly 2% in 2015, the Iranian economy is rapidly rising backward in 2016, at an estimated 6.4%. The latest data available for the first half of the year show that the Iranian economy grew at an accelerated pace of 9.2% in the second quarter, compared to July and September 2016, showing an increase of 5.2% in first quarter. This led to an increase in total growth in the first half of 2016 to 7.4%, while the net oil GDP increased by only 0.9%. Despite the dominance of the oil sector, thanks to the positive impact of the implemented joint comprehensive plan of action on oil production and exports, there are signs of dynamism in the non-oil sector.

The unemployment rate returned to a three-year maximum of 12.7% (3.3 million unemployed), in the second quarter of 2016 despite a high growth rate in this period. This increase is largely proof of an increase in the labor force participation rate to 40.4%, compared to 35.4% in the period January-March 2014. The unemployment rate of men and women of 21.8% and 10.4% points out employment growth in the field of employment in relation to 2015.

Poverty has been estimated to have fallen from 13.1% to 8.1% between 2008 and 2013. This was probably due to the universal money transfer program at the end of 2010 that preceded the abolition of subsidies on energy and bread. The outlook is such that the program has more than compensations for the likely increase in the cost of energy for a smaller part of households, which contributes to a positive increase in consumption in other 40% of the population, although total consumption growth between 2009 and 2013 was negative[50]. Both the external and budgetary balance is improving in 2016. The Iranian surplus in the current account was a strong incentive due to the strong growth of oil exports. It is estimated that the surplus of the current account has increased to 6.5% of GDP in 2016 from 2.7% in 2015, which is strongly used by the removal of oil sanctions and the recovery of exports. The budget deficit of the central government has been reduced to around 1.5% of GDP from 1.9% in 2015[51].

The previously mentioned data regarding the current political and economic situation in Iran, as well as many other data that more closely describe the state of the Iranian economy in a descriptive way, will be shown in the tables and charts that are attached. The data sources that follow will be listed in the footnote.

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[50] www.worldbank.org
[51] https://tradingeconomics.com/iran/ I World Islamic Banking Competitiveness Report 2016

An overview of the political and economic situation in Saudi Arabia

Saudi Arabia is based on an oil-based economy with strong government controls over major economic activities. It owns about 16% of proven world oil reserves, ranked as the largest oil exporter, and has a leading role in OPEK. Oil sector accounts are approximately 87% of budget revenues, 42% of GDP, and 90% of export revenues. Saudi Arabia encourages the growth of the private sector in order to expand its economy and employ more Saudi citizens. More than 6 million foreign workers play an important role in the Saudi economy, especially in the oil and services sectors; at the same time, however, Riad is struggling to reduce unemployment among its citizens. Saudi officials are particularly focused on the employment of their many young

people, who generally lack the education and technical skills that the private sector requires In 2015, the resulting budget deficit is estimated at 13% of GDP, and the Kingdom faces a deficit of one billion $ 87 in 2016, which will be financed by the sale of bonds and the reduction in reserves. Some of these deforestation plans include the introduction of value added tax and the reduction of subsidies on electricity, water, and petroleum products. In January 2016, the Crown Prince and Deputy Prime Minister Muhammad bin Salman announced that Saudi Arabia intends to publish a list of its state-owned oil companies, Aramco - another move to increase revenue and investment. The government has also taken steps to privatize and diversify the economy closer to the dawn of a reduced oil market. Historically, Saudi Arabia is focused on diversifying efforts to produce electricity, telecommunications, natural gas and petrochemical sectors. More recently, the government has come to investors with expanding the role of the private sector in health, education and tourism. Laws protecting private property are subject to Islamic practices. The slow and non-transparent judiciary is not independent and must coordinate its decisions with the executive. Despite some earlier attempts to hold responsible officials responsible, corruption remains a serious problem, and there is low transparency in the functioning of the government, such as blurring around state budgets and financial practices.

Saudi citizens or citizens of the Gulf Cooperation Council and corporations pay 2.5% for a religious tax mandate under Islamic law. The general tax burden amounts to 4.6% of total domestic revenue. Government spending accounted for 39% of total production (GDP) over the past three years, while budget deficits averaged 4.6% of GDP. Public debt is equivalent to 5.8% of GDP. Trade is important for the economy of Saudi Arabia; the value of exports and imports taken together amounts to 73% of GDP[52]. The average applied tariff rate is 3 %. Foreign investments shown by the government and state-owned companies distort the economy. Direct purchase of shares in Saudi companies listed on the stock exchange is allowed since 2015, thus opening the market to foreign institutional investors. The previously mentioned data regarding the current political and economic situation in Saudi Arabia, as well as many other data that more closely depict the situation of the Saudi economy in a descriptive way, will be shown in the tables and charts that are attached. The data sources that follow will be listed in the footnote.

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[52]https://tradingeconomics.com/Saudi/World Islamic Banking Competitiveness Report 2016

Introductory analysis time series and panel data

"*All models are wrong, but some are useful*" is a famous quote often attributed to the British statistician George E. P. Box. (President of the American Statistical Association in 1978 and of the Institute of Mathematical Statistics in 1979).

Many people in the field of statistics try to develop theoretical models aiming to predict the behavior of a certain process, for instance the selling trend of a product or the number of tourists in a city. Thus, the idea of this quote is that every single model will be wrong, meaning

that it will never represent the exact real behavior. Having said that, even if a model cannot describe exactly the reality it could be very helpful if it is close enough.

Introductory analysis of time series

The starting term in the analysis of time series is the time series. Put simply, the time series represents an ordered set of observations. In doing so, the arrangement is made in relation to time, usually at the same time intervals. So we are talking about monthly price movements, annual level of production, quarterly exports, daily temperature, etc. However, quantitative analysis of developments in financial markets requires the modeling of high frequency time series whose data occur at irregular intervals over time (changes in stock prices on stock exchanges, etc.).

Analysis of time series is statistical discipline, but its application is based on principles that differ from the usual assumptions of the theory of statistical conclusion. Namely, the basic notion in the theory of statistical conclusion is a simple random sample, which implies a set of n independent and equally distributed random variables. In the analysis of time series, a set of random variables is also considered, which, however, are assumed to be interdependent, and most often correlated. What is of interest in the analysis of time series is precisely the examination of the nature and degree of correlation of random variables over time.

Depending on how data is recorded, time series can be interrupted and continuous. As can be deduced from the division itself, intermittent time series are a series of observations occurring at certain moments over time. Continuous time series are those whose data we can find out at any time. This division is conditional, because from an uninterrupted time series we can form an interrupt using the following two methods:

• Method of a systematic sample; the method of time aggregation.

Depending on whether the statistical properties change over time or not, the time series can be stationary or non-stationary. The time series is stationary if its movement is predictable over time, that is, it exhibits a similar pattern of behavior over time. Otherwise, the time series is non-stationary.

Economic time series have at least one of the following properties[53]:

• The existence of a trend;

• The existence of a seasonal component;

• The existence of a structural breakdown;

• Existence of unstable variance.

The basic goals of the time series analysis are:

• Description of the time series;

• Explanation of the time series;

• Prediction of the time series.

The purpose of describing the time series is to provide information on the basic properties of the time series[54]**. At this stage of the analysis we get answers to the following questions**:

• Is the time series stationary or not?

• Is there specificity in the movement of the time series or not?

• Is the time series normally distributed?

• Is it necessary to transform the time series?

The goal of explaining the time series is to select an econometric model that describes its movement in a satisfactory way. The choice and rating of the model depends on whether the analysis of time series is one-dimensional or multi-dimensional. In a one-dimensional analysis, the time series is modeled exclusively on the basis of its own dynamics. A multi-dimensional analysis consists in the use of a relevant set of time series that have the role of explanatory variables.

According to the selected criterion and the estimated model from the second phase, the forecast of the future movement of the time series is realized, which is of interest for the setting up and realization of a credible economic policy. Also, based on the estimated model, different economic policy measures can be simulated. For example, how will the prices respond to the devaluation of the currency of 7%. In the forecasting process, it is recommended to use a number of evaluated models and, of course, the use of sound logic.

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[52]Mlenović Z., Nojković A., 2012, Applied analysis of time series, p.2
[53]ladenović Z., Nojković A., 2012, Applied Time Series Analysis, p.4
[54]ladenović Z., Nojković A., 2012, Applied analysis of time series, p.5

In the analysis of time series, the tags are often used, which we will now explain.
1. Xt - value of time series at time t. Index t can indicate month, quarter, year, etc.
2. Xn (h) - predicted value of the period in advance based on the first n data. This forecast is an estimate of the unknown level of the time series in the period n + h, Xn+ h.
3. en (h) = Xn + h - Xn (h) - forecast error

4. First-order delay operator L: $LX_t = X_{t-1}$. Using this operator, the level of the time series is moved for a period of time. A moment in a time that is past one period for the present moment is called the first-order delay.

5. The first-order differential operator, Δ, is defined as follows: $\Delta X_t = X_t - X_{t-1}$. The first difference or the first difference is used. The use of this operator creates a difference in the level of the time series in two successive periods or moments.

6. An operator of the order differential k, Δk, applied to X_t, gives the following result: $\Delta k\, X_t = X_t - X_{t-k}$. The seasonal differential operator is often used. This operator is applied in the analysis of quarterly and monthly data with a pronounced seasonal component.

The basic concepts of time series analysis are[55]:

• Random process; • time series; • stationary; • ergodicity.

The purpose of the application of the municipal methods is the realization of the first goal in the analysis of the time series - a description of the time series. Using these methods, we get the first information about the nature of the time series and whether it needs to be transformed before the second goal is achieved - an explanation of the movement of the time series. There are numerous methods that can be used at this stage. Usually they are grouped in the following way:

• Graphical display of the time series;

• Summary indicators;

• Time series transformation methods;

• The time series equalization method.

The goal of the graphic representation of the time series[55] is its visual overview. The time series data is plotted in a coordinate system in which the moments in time are on the x-axis, while the time series values are given on the y-axis. The x-axis should indicate the frequency of the occurrence of data (year, month, day, etc.), while the corresponding units of measure should be recorded on the y-axis. For example, if the index of the e-manufacturing industry is considered, then it is necessary to indicate whether it is a chain or a base index. Based on the graphic representation of the time series, it can be concluded whether the time series exhibits a tendency of growth or decline, whether there are pronounced seasonal variations and whether it   is   characterized   by   an   unstable   variance.

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[55]Mladenović Z., Nojković A., 2012. Applied analysis of time series, p.14

The summarized indicators aim at understanding the empirical distribution of the given time series. This is relevant in order to determine whether the empirical distribution can be well approximated by the normal distribution. If the normal distribution does not represent a sufficiently good frame for the given empirical distribution, then it is necessary to determine why there is a deviation from the normality.

The aim of applying the transformation method is to obtain a time series with the following properties:

• The time series has an empirical distribution which is symmetrical and normal;
• The time series has a stable level and variability.

The symmetry of the distribution and stabilization of the time series is often achieved using the Boxes and Coke transformations. This transformation, in most cases, is reduced to the logarithm of the initial data. Bearing in mind that a greater number of economic time series has a growing trend, that is, their empirical distribution is asymmetric to the right, it is possible that the degree of asymmetry is reduced by logging.

Methods for balancing the time series are based on the traditional understanding that the time series can be presented as the sum of the long-term component and short-term variations. In addition, the long-term component reflects the basic flow of the series, while short-term variations indicate random fluctuations. The purpose of applying these methods is to isolate the long-term tendency in the movement of the time series, which is achieved by eliminating random variations. Leveling methods can be divided into two groups:

• Regression method;
• moving average methods.

Table 8: Example of a time series

Minimum Wage, Unemployment, and Related Data for Puerto Rico

obsno	year	avgmin	avgcov	unemp	gnp
1	1950	0.20	20.1	15.4	878.7
2	1951	0.21	20.7	16.0	925.0
3	1952	0.23	22.6	14.8	1015.9
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
37	1986	3.35	58.1	18.9	4281.6
38	1987	3.35	58.2	16.8	4496.7

Source: Author's View

1.2 The Concept of Data Panel Analysis

Tests in Research

- Education Research   - Clinical Research - Financial Research - Health Research

Panel or longitudinal data are a combination of comparative data and time series - Observations of a given random variable in a given time period for all observation units. For example, a set of observations on the consumption of all individual CEE countries for the period 2011-2012.

A data panel can be created by a researcher in two ways:
• Observation - primary data (based on periodic survey surveys) or secondary (by pairing existing periodic statistical data)
• Experiment (example of experimental data panel formation - Examination of the existence of a significant difference in the results of the exam from the aspect of the application of three methods of teaching statistics)

Depending on the panel's character, two data structures can be identified:

• "Long" panel series - typically a small number of comparative observations observed over a longer period of time, characteristic of macroeconomic and financial analysis
• "Short" panel series - typically a large number of comparative observations observed over a short period of time, characteristic of microeconomic and sociological research

Benefits of using the data panel in econometric analysis:
• Contain more information: have greater variability, less collinearity, give more degrees of freedom

• Enable analysis of individual effects

• Include information on the timing of events

• Provide control over problematic sequences of data structures that result from non-experimental research

Table 9: Example - the impact of marital status on earnings (4 respondents, 6 years)

```
      +---------------------------+         +---------------------------+
      | id    time    wage   marr |         | id    time    wage   marr |
      |---------------------------|         |---------------------------|
  1.  |  1      1     1000      0 |    13.  |  3      1     2900      0 |
  2.  |  1      2     1050      0 |    14.  |  3      2     3000      0 |
  3.  |  1      3      950      0 |    15.  |  3      3     3100      0 |
  4.  |  1      4     1000      0 |    16.  |  3      4     3500      1 |
  5.  |  1      5     1100      0 |    17.  |  3      5     3450      1 |
  6.  |  1      6      900      0 |    18.  |  3      6     3550      1 |
      |---------------------------|         |---------------------------|
  7.  |  2      1     2000      0 |    19.  |  4      1     3950      0 |
  8.  |  2      2     1950      0 |    20.  |  4      2     4050      0 |
  9.  |  2      3     2000      0 |    21.  |  4      3     4000      0 |
 10.  |  2      4     2000      0 |    22.  |  4      4     4500      1 |
 11.  |  2      5     1950      0 |    23.  |  4      5     4600      1 |
 12.  |  2      6     2100      0 |    24.  |  4      6     4400      1 |
      |---------------------------|         +---------------------------+
```

Source: Author's View

1.3 A Simple linear Regression Model

Let's look at the model of the following form:

Yi = β0 + β Xi + εi, and = 1,2 ..., n

in which Y denotes the dependent variable, X is an independent variable, and is an index, and n is the number of observations.

This model represents a simple linear regression model if a random error εi meets the following assumptions:

1. E (εi) = 0, for each i;

2. E (εi) = V (εi) = σ2, for each i;

 j);≠3. E (εi εj) = cov (εi εj) = 0, for each i and j (i

4. εi: N (0, σ2);

5. cov (Xi εj) = 0, for each i and j.

1.4 Multiple Linear Regression (MLR)

Multiple linear regression (MLR), also known simply as multiple regression, is a statistical technique that uses several explanatory variables to predict the outcome of a response variable. The goal of multiple linear regressions (MLR) is to model the linear relationship between the explanatory (independent) variables and response (dependent) variable. In essence, multiple regressions are the extension of ordinary least squares (OLS) regression that involves more than one explanatory variable. The Formula for Multiple Linear Regression Is

$$yi=β0+β1xi1+β2xi2+...+βpxip+ϵ$$

Where, for i=n observations: yi=dependent variable xi=expanatory variables β0=y-intercept (constant term) βp=slope coefficients for each explanatory variableϵ=the model's error term (also known as the residuals). Explaining Multiple Linear Regression The multiple regression models are based on the following assumptions: There is a linear relationship between the dependent variables and the independent variables.

The independent variables are not too highly correlated with each other. yi observations are selected independently and randomly from the population. 30 Residuals should be normally distributed with a mean of 0 and variance σ.

The coefficient of determination (R-squared) is a statistical metric that is used to measure how much of the variation in outcome can be explained by the variation in the independent variables. R2 always increases as more predictors are added to the MLR model even though the predictors may not be related to the outcome variable. R^2 by itself can›t thus be used to identify which predictors should be included in a model and which should be excluded. R2 can only be between 0 and 1, where 0 indicates that the outcome cannot be predicted by any of the independent variables and 1 indicates that the outcome can be predicted without error from the independent variables. When interpreting the results of a multiple regression, beta coefficients are valid while holding all other variables constant ("all else equal"). The output from a multiple regression can be displayed horizontally as an equation, or vertically in table form. Multiple regressions are based on the assumption that there is a linear relationship between both the dependent and independent variables.

It also assumes no major correlation between the independent variables. • First, you need to be sure; the dependent variable has a linear relationship to the independent variable. How to check that? Make sure that the XY scatterplot is linear. What is scatterplot? This is a graphic tool that displays the relationship between two variables. Actually, one of the basics steps in regression modeling is to plot your data on a scatter plot. To make the things clear, let's see an example: The following table shows the monthly sales and advertising costs for last year by a business software company. These relationships are expressed mathematically in terms of a correlation coefficient (known also as a correlation). Correlations are indicators of the strength of the relationship between the independent and dependent variable.

They can be in the range from –1 to +1. A positive correlation means that if the independent variable gets bigger, the dependent variable tends to get bigger. The larger the absolute value of the correlation coefficient, the stronger the linear relationship. • The second condition you need, a simple linear regression to be appropriate is: for each value of X, the likelihood distribution of Y has the same standard deviation σ. When this condition is fulfilled, the variability of the residuals will be comparatively constant across all values of X. You can check this with the help of residual plot. The residual plot is a graph that represents the residuals on the vertical axis and the independent variable on the horizontal axis. If the points are randomly dispersed around the horizontal axis, linear regression models are appropriate for the data. If not, non-linear models are more appropriate. Here is an example of a residual plot:

Source: http://www.intellspot.com/linear-regression-models
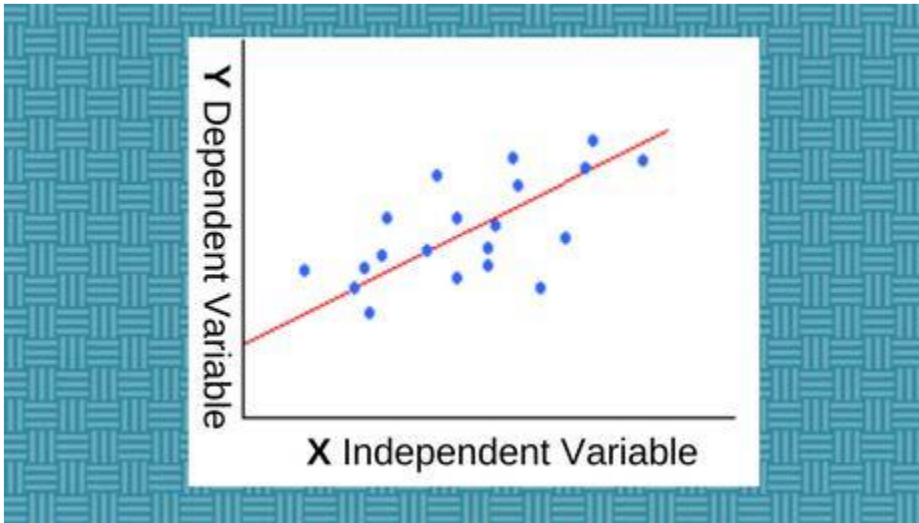
The following formula is a multiple linear regression model.

$$Y = B0 + B1\ X1 + B2\ X2 + \ldots BpXp$$

Where: X1, X2 … Xp – the value of the independent variable, Y – the value of the dependent variable. B0 – is a constant (shows the value of Y when the value of X=0) B1,B2 , Bp – the regression coefficient (shows how much Y changes for each unit change in X) This model is linear because it is linear in the parameters B0 , B1 , B2 and … B p

1.5 Methodologies in empirical analysis

Most economic models in the literature dealing with empirical analyzes (and which are reviewed) are set in a very stereotypical way, forms

Y = A + B1 * X + B2 * D + B3 * Z

Where are:

• Y - dependent variable

• X - a set (vector) of explanatory (independent) variables of key interest for your research

• D - a set of artificial (dummy) variables

• Z - set of control variables

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• Z - set of control variables

The general algorithm for setting up the model is in principle reduced to the identification of these three groups of variables

Control variables represent all those variables that it is reasonable to assume that they have a systematic influence on the dependent variable, and do not belong to the explanatory variables of primary interest for research.

How to identify them?

• Common sense economic logic (with good argumentation it passes the review)
• Based on literature (with adequate reference passes the review and without detailed argumentation)

• **Why are they significant?**

• From the point of view of econometric estimation, it is not possible to guarantee the reliability and robustness of the evaluated results, if there is a reasonable doubt that variables that have a systematic impact on the dependent variable are not included in the model.

• Omission of relevant variables from the model from the point of view of empirical analysis. Represents potentially the "worst" mistake that can be made!!!

• Of course, in reality it is not possible to include all the relevant variables, but the key ones must certainly be found in the model.

• What would be the control variables in case of unemployment?

Let the model $Y = A + B1 * X + B2 * D + B3 * Z$

The coefficients of models A, B1, B2, B3 are unknown

Econometrics basically serves to:

• Impartially evaluate unknown values of coefficients: grade (A) = a, grade (B1) = b1, grade (B2) = b2, grade (B3) = b3

• reliably tests whether the estimated values of A, B1, B2 or B3 are statistically different from 0.

It is important to note that the reliability of the tests is more problematic, because it requires that the coefficient is evaluated impartially, as well as that the standard error of the coefficient is "correctly" evaluated.

In practice, the key problem of econometric evaluation is adequate verification of the obtained results, i.e. confirmation of the robustness of the obtained results.

Robustness is a magic word for reviewers in today's academic research practice.

Robustness in principle means that the key results of your empirical analysis are consistent in the sense that they do not change significantly by adding or subtracting control variables, reducing the sample, changing the estimation technique, etc. ...

Why can the results of empirical analysis in econometrics be a reason for reviewers to doubt?

Typical problems that may jeopardize the validity of econometric assessment are:

1. Omission of essential variables from the model (already mentioned)

2. Insufficient number of observations in the sample

3. Autocorrelation - occurs in the analysis of time series as a consequence of the "inertia" of some economic variables, most often nominally expressed, eg, nominally expressed GDP, asset value, etc.

4. Heteroskedasticity - occurs in the analysis of comparative data as a consequence of different intensity of volatility of the same variable in different units of observation, eg, volatility of GDP growth in Eastern and Western European countries

5. Multicollinearity - occurs in situations where the correlation of independent variables is "harmful" high

Basic econometric estimation methods cannot cope with these problems, and the implications for estimation can be summarized in the following table

	Impartiality of assessment Problem	Reliability of statistical test
Inadequate model specification Variables are uncorrelated	✘, unless all independent	✘
Insufficient number of observations	✔, provided that a small	✘

Number of coefficients		
Autocorrelation, heteroskedasticity	✓✗	
Multi co-linearity	✗	✗

Although, strictly theoretically, the methodology should be operationalized independently of the available data, it is clear that in reality the availability of data is an important aspect of methodological "fine tuning".

How much "data" is enough for reliable econometric estimation?

It is first necessary to distinguish between the terms data and observation.

Data in the strict sense is any measurement of dependent and independent variables, and in econometrics "data" is an observation of the overall relationship of dependent and independent variables

For example, an ordered pair (Y, X, D, Z) represents only one observation of the relationship between Y and (X, D, Z) and effectively contains four data.

The minimum observations necessary for reliable econometric assessment is 30!

But ... assuming that the number of unknown coefficients being estimated is relatively small (up to 5-6).

Even if you evaluate only one parameter, the minimum observation is still 30.

If the number of coefficients to be assessed is greater than 5-6, the informal rule is "for each unknown coefficient to be assessed, it is desirable to have a minimum of 5 observations"

For example, if the model
$$Y = A + B1 * X1 + B2 * X2 + B3 * X3 + B4 * X4 + B5 * X5 + B6 * X6 + B7 * X7 + B8 * X8 + B9 * X9$$
Preferably, the sample contains at least 50 observations.

Once you have set up and evaluated the model, it is up to you to convince the reviewer that the evaluation results are robust.

In practice, robustness analysis involves a kind of "output mining", which comes down to the following:

1. Evaluate a basic model that contains only key explanatory and possibly one or two key control or artificial variables

2. Evaluate extended models that gradually include other control variables

3. Evaluate extended models in which one control variable is alternately included and excluded

4. Evaluate basic and extended models based on one or more subsamples

5. Evaluate all the same with another estimation technique

Final robustness test result - 30 - 40 output tables J (in software, for example, it takes about 15 minutes to list all these tables)

Of course, in reality, absolute robustness will not be confirmed, there will be those output tables that are not in line with the desired results.

Choose the combination of output tables that best supports your expected results - it's true that it's a kind of fake result, but it's very effective on reviewers (assuming most results do confirm robustness, of course; if robustness isn't confirmed, don't fake the results) .

Based on the general problem, define research questions or hypotheses in the style: Does the economic phenomenon X affect the phenomenon Y, e.g. whether labor market flexibility affects unemployment

2. Select one or more related economic variables that quantitatively determine the values of Y, e.g. unemployment rate, youth unemployment rate, etc., which become dependent variables in the model

3. Choose one to two variables (no more) that quantitatively determine the values of X, eg composite labor market flexibility index, which become the main explanatory variables

4. Form a basic empirical model of the form $Y = A + B1 * X1$ or

$Y = A + B1 * X1 + B2 * X2$, in our case

Unemployment rate = A + B * composite labor market indicator

Identify potential control and artificial variables by which the model can be extended

6. Check the number of available observations in the sample for insight into the maximum possible number of control and artificial variables that can be included in the model without compromising the reliability of econometric estimation

7. Form a table with observations and visually check for extreme values between the observations of the dependent and explanatory variables - if any, study how and why they occurred and isolate them with an additional artificial variable

Define specific research questions (if any) and appropriate model modifications

8. Form a quasi-final extended model of the form $Y = A + B1 * X + B2 * D + B3 * Z$, which will include all adequate artificial and control variables

9. Evaluate models in all versions

10. Perform output mining

11. Once you have decided which tables to keep in the final presentation of the paper, revise the methodology so that only the final model remains (eg remove those control variables, if any, that disrupt your results)

At the time of today's hyper production of scientific papers, there is a good chance that someone has already empirically analyzed the basic relationship of dependent and independent variables that are the focus of your research, which can be a significant limitation in the conceptual originality of scientific work.

Defining specific research questions is an elegant way to overcome this limitation.

Examples of specific research questions that can be tested:

Is there a difference between the influence of one variable on another at the regional level, e.g. whether the impact of indebtedness on GDP growth in Europe is greater than in Asia

Is there a difference between the influence of one variable on another at the level of the industry, e.g. whether the impact of indebtedness on profitability is greater in industry than in agriculture

Is there a difference between the influence of one variable on another at the level of different economic regimes, e.g. whether the impact of the budget deficit on the current deficit is more pronounced in countries with a fixed or flexible exchange rate (or developed and underdeveloped countries).

Is there a difference between the influences of one variable on another if a critical value is breached (so-called threshold), e.g. whether indebtedness changes the direction of the impact on GDP growth if the debt of an individual country exceeds the average value of debt at the level of the corresponding group of countries.

Is there a difference between the influence of one variable on another at the sub period level, e.g. whether the movement of exchange rates before and after the crisis had a different impact on trade relations

The standard procedure for the operationalization of research hypotheses and questions in economics is, therefore, most often reduced to setting up an empirical model of the form:

$$Y(i, t) = A + B1 * X(i, t) + B2 * D(i, t) + B3 * Z(i, t) ...$$

$$... \text{Optional} + B4 * Y(i, t-1) + B5 * X(i, t-1)$$

Where are:
• Y - dependent variable
• X - a set (vector) of explanatory (independent) variables of key interest for your research
• D - a set of artificial (dummy) variables
• Z - set of control variables
• $Y(i, t)$, $X(i, t-1)$ - first late dependent and explanatory variables
• The specification of the empirical econometric model we have considered is a typical methodological framework for empirical research in economics (macroeconomics, finance, and business economics).
• On the other hand, borderline economics such as management, although thematically based on economics, in the domain of empirical research more often use methodological equipment that is close to the template of research methodology used in typical social sciences such as sociology, pedagogy or psychology. Methods and methodological and interpretive terminology)
• WHY?
• Let's go back to the very beginning...

Adapted to the natural sciences Adapted to the social sciences

1. Defining the problem 1. Defining the problem

2. Operationalization of research questions or hypotheses 2. (3-4) Operationalization of research questions or hypotheses

3. Defining the research methodology (setting the model) 3. Defining the research methodology (setting the model)

4. Data collection 4. Data collection

5. Data analysis (hypothesis testing) 5. Data analysis (hypothesis testing)

6. Interpretation of results 6. Interpretation of results

7. Verification of results - replication 7. Verification of results - robustness

You try to ask research questions, ie hypotheses, so that they can be easily quantitatively operationalized through research methodology, and which can be easily explicitly analyzed and tested by statistical and econometric methods of analysis - thus reducing arbitrariness in interpreting results and reducing room for reviewer's validity.

Review of literature

There are a number of empirical studies in relation to determinants that determine the performance of the bank. Most were developed in developed countries, while a small number of them provide evidence from developed countries. From the earliest studies that attempt to determine the main determinants of the performance and profitability of the bank are the studies of Shorta (1979) and Bourke (1989). Since then, we have other researchers like Molyneux and Thorton (1992), Demirguc and Huizinga (1999), Abreu and Mendes (2002), Staikouras and Wood (2004), Althanasoglou et al. (2006) Micco et al. (2007) and Pasiouras and Kosmidou (2007), whose studies were concerned with the research of variables related to the profitability of the bank.

Bourke (1989) suggested that there is a positive link between liquidity and profitability, while some studies suggest that smaller amounts of funds in the service of liquid investment can result in higher profitability (e.g. Eichengreen and Gibson 2001 and Molyneux and Thorton 1992).

Molyneux and Thorton (1992) studied performance banks in 18 European countries over the period 1986-1989 and found a significant positive link between return on equity capital (ROE) and state ownership, concentration of the bank and the level of interest rates in each of these countries. On the other hand, Bashir (2000), studied the performance of Islamic banks in 8 Middle Eastern countries in the period from 1993 to 1998. He reported on a significant positive link between the impact of loans on the asset's coefficient and performance of the bank and concluded that foreign-owned banks were more profitable than those that were not.

Halkos and Salamouris (2004) deal with the situation in Greece and the study showed that banks with large assets are more profitable. Regarding the European banking industry, Bikker (1999) also suggests a positive relationship between the size and the efficiency of the bank.

Kosmidou (2008), studied determinants regarding the performance of 23 Greek banks in the period from 1990-2002. In his study, return on average assets (ROAA) was taken as the measure of performance of the bank, while the ratio of costs and income, capital to total assets, bank loans, short-term financing, loan loss reserves and total bank assets were taken as internal determinants. On the other hand, it used the annual GDP change, the inflation rate, the growth of cash, the capitalization of the stock market in total assets, total GDP assets, and the level of

concentration as an external determinant of the banking effect. The obtained results suggest a link between ROAA and banks with good capital and a lower rate in relation to cost-income ratio. Also, the size and growth of GDP were positively linked to the performance of the bank, while inflation had a negative impact on the same. Studies by Delis and Papanikolau (2009) have found that bank size, industrial concentration and investment environment have a positive impact on bank efficiency.

Ben Naceur and Goaled (2001) used data from Tunisia for the period from 1980-1995 in order to check the determinant concerning the performance of Tunisian banks. Results

Their studies have shown that the work and productivity of capital, the high level of deposit accounts in relation to assets, and the strengthened capital have a positive effect on the performance of banks.

Guru et al. (2002), they had a focus in Malaysia. Factors influencing the performance and profitability of 17 Malaysian commercial banks in the period from 1986-1995 were investigated. As internal factors, the adequacy of capital, liquidity and management costs, as an external size of the bank, ownership and external economic conditions, are taken. The results indicated that management costs had a significant positive impact on the profitability of the bank and at the same time they suggested that high interest rates lead to a decrease in profitability. In contrast, inflation has a positive impact on the performance of the bank.

Ahmed and Khababa (1999) investigated the determinants of the banking sector in Saudi Arabia. As profitability measures, ROA, REA and percentage change in earnings per share. Studies have found that business risk and size of the bank are the main determinants of Saudi Arabian banks' performance.

Akhtr et al. (2011) as a sample taken by the Islamic Bank in Pakistan in the period 2006-2009. Using multivariate regression models, they came to the conclusion that the degree of transmission and the capital adequacy ratio have a significant positive impact on the performance of the bank. On the other hand, the size of the bank has had a negative impact on its performance.

Srairi (2009) studied the impact of bank characteristics, macroeconomic factors and financial structure on the profitability of conventional and Islamic commercial banks operating in the GCC countries (Gulf Cooperation Council)56 for the period 1999-2006. The results showed that the profitability of both of them is influenced by operational efficiency, adequate capital and credit risk. Empirical results have shown that macroeconomic variables with the exclusion of inflation rates positively affect profit.

Olson and Zoubi (2008) used 26 financial relationships / parameters for the comparison between Islamic and conventional banks in the GCC countries in the period 2000-2005.

They suggested that Islamic banks were less efficient and operate at higher risk in comparison with the conventional banks.

Chong and Liu (2008), investigated whether Islamic banking differs from conventional using Malaysian data. Empirical findings suggested that Islamic deposits do not differ much from the conventional ones.

Haron (2004), explored the effect of the determinant of profit on the performance of Islamic banks. He found that internal factors such as liquidity, total costs and percentage of participation in the winnings between the bank and the borrower, as well as external factors in the form of interest rates, market share, income of money and the size of the bank, are firmly linked to the income and profitability of the Islamic Bank.

_____

[56]Global Economy and finance Journal / vol. 5. No.1

Conclusion

The World Bank Group works with Islamic Banking - Third Generation Finance (TGF). It reduces poverty, expand access to finance, develop the financial sector and build the stability and resilience of the financial sector in client countries. Third Generation Finance has emerged as an effective tool for financing development around the world, including non-Muslim countries.

The main financial markets reveal solid evidence that Third Generation Finance has already been included in the global financial system and have the potential to help address the challenge of ending extreme poverty and fostering a common prosperity. Third Generation Finance industry has expanded rapidly over the past decade, growing by 10-12% annually.

Today, *the total worth of the IFSI increased to an estimated USD 2.44 trillion in 2019 (from USD 2.19 trillion in 2018). The IFSI sustained its growth momentum in 2019, recording a growth rate of 11.4% year-on-year (y-o-y) based on significant improvement across the three segments of the IFSI, especially Islamic banking and the ICM. There was also an improvement in the resilience of the IFSI based on satisfactory financial stability indicators and compliance with most international regulatory requirements, especially when compared with previous years' performance, conventional peers, and assessment criteria used by international standard-setting bodies.*

Although the duration and full extent of the damage brought about by the pandemic, as well as the span and form of future economic recovery, remain unclear, the consequential macroeconomic shock to the global financial system is indisputably the greatest since the 2007–8 Global Financial Crisis (GFC). The current global economic shock is also exacerbated by the oil price volatility that has been evident since the first quarter of 2020 due to a delay by the OPEC+ coalition (Organization of the Petroleum Exporting Countries and 10 other oil exporting countries led by Russia) to agree to a deal on possible oil production cuts. Both shocks will obviously have a devastating effect on global economic activities, as well as on various growth forecasts for 2020 and, perhaps, beyond. The International Monetary Fund (IMF), in its June 2020 World Economic Outlook, projects that global growth will be -4.9% in 2020, contrary to its -3% growth projection made three months earlier.

This performance of the IFSI in 2019 projected a sense of optimism for 2020 based on, among other factors, the expected depressed but relatively

stable prices of oil and other export commodities, improved regulatory and investment environment in most jurisdictions with a significant Islamic finance presence. However, the combined effects of the shock from the COVID-19 pandemic and oil price volatility, as well as the financial services industry's vulnerability to factors such as global trade wars, economic sanctions and political blockades, will test the strength and resilience of the IFSI in 2020.

With Third Generation Finance institutions seeking to expand into emerging markets in Africa and Asia. Latin America could be next. Potential is also high in Argentina, Venezuela, Panama, Colombia, Paraguay and Trinidad & Tobago, countries which all have local Muslim communities that would happily embrace Islamic banking services. The surveillance of the short term ensures from the national country that the thing is going well, in the foreign direct investment there is vigilance, but from the outside, there is no coincidence, the agreement of the common interests. So, the common interests are what produce the greatest benefit for the Third Generation Finance, then the **Foreign Direct Investment**, which is thinking only of the benefit for the foreign investor residing outside, even if it is operating here, he is residing outside. Also,

1. The development of the country in all aspects, contributes to a developed and stable banking and financial sector.
2. In developed countries, the banking and financial sector is stable and developed, thanks to regulated laws and markets.
3. The existence of a two-way relationship between growth and finance
4. The literature review has enumerated the predominant role of Islamic banking in the growth of gross domestic production of the nation's especially the developing nations.

In this connection, the present study has empirically analyzed and found the existence of the linear relationship between the dependent (GDP) and independent variables (Saving and Total Investment) having addressed the issues of OLS assumptions except serial correlation.
Though it an important issue, it is not creating a serious issue in cross section data where as it is the serious issue in time serious analysis.

Hence, it is concluded that there is a positive relationship between saving **and gross domestic production at level in both Countries Iran and Saudi Saudi Arabia but there is a negative relationship between Total Investment and gross domestic production at level and at 1st difference as shown in the Regression Equations during research period from 1980 to 2020.** The results obtained in this study can be important Provide the basis for analyzing the success of economic policies.

The Regression Equations for Iran:

$$GDP\_I = 167.59 + 13.73\ SAVING\_I - 11.21\ TOTALINVESTMENT\_I + \epsilon$$

Not Significant   Not Significant

DGDP_I = 10.02 + 7.80 DSAVING_I- 9.57 DTOTALINVESTMENT_I +Є

Not Significant   Not Significant

The Regression Equations for Saudi Arabia:

GDP_S = -597.11 + 6.28 SAVING_S+ 32.66TOTALINVESTMENT_S + Є

Significant   Significant

DGDP_S = 17.63 + 3.55 DSAVING_S--3.84 DTOTALINVESTMENT_S + Є

Significant   Significant at 10%

5. **Test Results and Discussions of Analyses of data (time series) for both Countries Iran and Saudi Arabia in period from 1980 to 2020 are shown in appendices from 1 and 2.**

PRACTICAL PART

"Anyone who tries to analyse a time series without plotting it first is asking for trouble"
Chatfield (2004)

All models are wrong, but some are useful" is a famous quote often attributed to the British statistician George E. P. Box. (President of the American Statistical Association in 1978 and of the Institute of Mathematical Statistics in 1979).

Data & Methodology

In the present study the secondary data was used to analyse the impact of Islamic banking on the gross domestic production of Iran and Saudi Arabia during the study period 1980 to 2020.

The data has been retrieved from the IMF website. The analysis was performed by using software econometric views (E-Views .9). The hypotheses have been tested using simple linear and multiple regressions addressing the issues of ordinary least square assumptions.

$$\gamma = \alpha + b_1\chi_1 + b_2\chi_2 + \text{\euro}$$

Where γ the dependent variable gross domestic production (GDP) is, α is the intercept of γ. b1, b2 is the slope coefficient and χ_1, χ_2 are the independent variables saving and total investment. The error term is denoted as $\text{\euro}$. The result of the regression analysis is presented below

years	GDP_I	SAVING_I	TOTALINVESTMENT_I	GDP_S	SAVING_S	TOTALINVESTMENT_S
1980	93.531	36.588	36.588	164.54	46.129	20.926
1981	101.451	31.586	31.586	184.291	42.578	20.172
1982	127.557	25.084	25.084	153.24	25.661	20.706
1983	155.942	31.214	31.214	129.181	8.747	21.637
1984	160.074	24.169	24.169	119.631	12.159	27.545
1985	179.718	22.062	22.062	103.894	5.007	21.453
1986	208.782	19.466	19.466	86.886	3.15	19.46
1987	276.875	16.112	16.112	85.581	4.899	17.718
1988	318.601	18.304	18.304	88.138	12.154	19.689
1989	379.167	25.296	25.296	95.217	9.441	19.445
1990	575.265	32.758	32.758	117.473	12.154	15.684
1991	302.498	45.437	45.437	132.047	-0.847	19.986
1992	49.423	43.966	43.966	136.905	10.023	22.964
1993	65.03	30.473	30.473	132.791	12.069	25.055
1994	82.405	22.182	22.182	134.995	12.599	20.357
1995	115.703	32.606	29.704	143.152	16.571	20.286
1996	157.347	40.052	36.727	158.451	19	18.571
1997	185.727	37.472	36.281	165.742	18.962	18.778
1998	208.928	34.579	35.622	146.775	14.002	22.949
1999	277.095	36.669	34.291	161.717	21.768	21.514
2000	365.946	41.007	37.417	189.515	26.871	19.317
2001	334.323	42.661	40.804	184.137	24.703	19.623
2002	129.778	45.101	41.908	189.606	25.955	19.693
2003	152.973	47.649	46.299	215.808	32.489	19.493
2004	186.857	48.113	46.67	258.742	39.933	19.865
2005	228.18	47.744	41.39	328.206	47.594	20.175
2006	270.333	47.839	40.613	376.398	48.5	22.215
2007	351.769	50.539	41.581	415.687	48.925	26.473
2008	406.212	48.433	43.452	519.797	52.752	27.296
2009	410.557	44.257	42.116	429.098	36.599	31.715
2010	482.384	44.931	40.71	528.207	43.564	30.926

2011	577.214	49.052	38.606	671.239	50.596	26.971
2012	389.199	47.544	41.528	735.975	48.929	26.542
2013	396.408	47.911	41.22	746.647	44.61	26.47
2014	423.409	43.605	40.399	756.35	38.502	28.751
2015	375.404	35.241	34.911	654.27	26.458	35.127
2016	404.445	37.56	33.534	644.936	27.232	30.933
2017	430.709	39.524	35.704	688.586	30.382	28.862
2018	446.105	42.785	38.689	786.522	33.426	24.23
2019	458.5	38.153	40.829	779.289	29.302	24.911
2020	463.077	36.226	39.583	783.337	29.923	28.423

Appendix No. 1: Statistical Data Analyzes of Iran

Test Results and Discussion for Iran

To interpret the results of simple linear regression, Breusch- Godfrey Serial Correlation LM Test, Heteroskedasticity: Breusch-Pagan-Godfrey and Jarque-Bera-Normality Test, Stability Test and draw a conclusion.

The hypotheses have been tested using simple linear regression addressing the issues of ordinary least square assumptions.

$$\gamma = \alpha + b_1 c_1 + b_2 c_2 + \varepsilon$$

Where γ the dependent variable gross domestic production (**GDP_Iran**) is, α is the intercept of γ b1 and b2 are the slope coefficients and c1 and c2 are the independents variables such as **Saving_Iran and Total Investment_Iran**.The error term is denoted as ε. The result of the regression analysis is presented below.

Testable Hypothesis

H0= the independents variables such as **Saving Iran and Total Investment Iran**are not significantly influencing the dependent variable gross domestic production.

Ha= the independent variables are significantly influencing the dependent variable gross domestic production.

H01= No cross-section dependence (correlation) in residuals

Ha1= Cross-section dependence (correlation) in residuals

H02= No heteroskedasticity is found in residuals

Ha2= Heteroskedasticity is found in residuals

The Regression Equations:

DGDP_I = 10.02 + 7.80 DSAVING_I - 9.57 DTOTALINVESTMENT_I +€

Not Significant   Not Significant

Results and Discussion

Coefficient of Determination Adj– R^2=0.0075

P – Value of "F" Statistic = 0.3280

P – Value of SAVING_I Independent Variable=0.1922

P – Value of TOTAL INVESTMENT_IVariable=0.1382

P – Value of Obs *R- Squared: Breusch – Godfrey Serial

Correlation LM Test= 0.1057

P – Value of Obs *R- Squared: Heteroskedasticity: Breusch – Godfrey Test

=0.0785

P – Value of Jarque-Bera – Normality Test = 0.000

The above results were obtained from data analysis. It shows that coefficient of Determination Adj– R^2= 0.0075 which means the independent variable **Saving_Iran and Total Investment_Iran** are explaining the GDP in Iran by 0.75 %. The P – value of F-Statistic is 0.328 indicates the model is not fit for the overall population. It is ensured that the independent variable **Saving_Iran** is not significantly influencing the dependent variable GDP with p-value of 0.1922 larger than 5%. Hence the null hypothesis H0 is not rejected. Also, the independent variable **Total Investment Iran** is not significantly influencing the dependent variable GDP with p-value of 0.1382 larger than 5%.

The P – Value of Breusch – Godfrey Serial Correlation LM Test is 0.1057. It is larger than 5% and the null hypothesis H01 is rejected, which means the data series is not suffering from serial correlation.

The P – Value of Obs *R- Squared: Heteroskedasticity: Breusch – Godfrey Test 0.0785 is understood that the heteroskedasticity is not found since the p-value is larger than 5% and null hypothesis H02 is not rejected.

The P – Value of Jarque-Bera – Normality Test 0.000 is smaller than

5%, hence the null hypothesis is H03 rejected which means that the residuals are not normally distributed.

The three variables GDP_Iran, Saving_Iran and Total Investment_Iran are not stationary (they have unit roots) at level and they became stationary (they have no unit roots) after first difference. But the Variables **(GDP_Iran, Saving_Iran and Total Investment_Iran)** are cointegrated.

Regression Analysis – GDP_Iran, Saving_Iran and Total Investment_Iran

1. A: **Graphical investigation**

   Graphical investigation shows all variables (GDP_Iran, Saving_Iran and Total Investment_Iran) are not stationary and have unit root at level

GDP_I

SAVING_I

TOTALINVESTMENT_I

1. A : **Graphical investigation**
Graphical investigation shows all variables(1ˢᵗ deference GDP_Iran, 1ˢᵗ deference   Saving_Iran
and 1ˢᵗ deference   Total Investment_Iran) are stationary and have no unit root at level

DGDP_I

DSAVING_I

DTOTALINVESTMENT_I
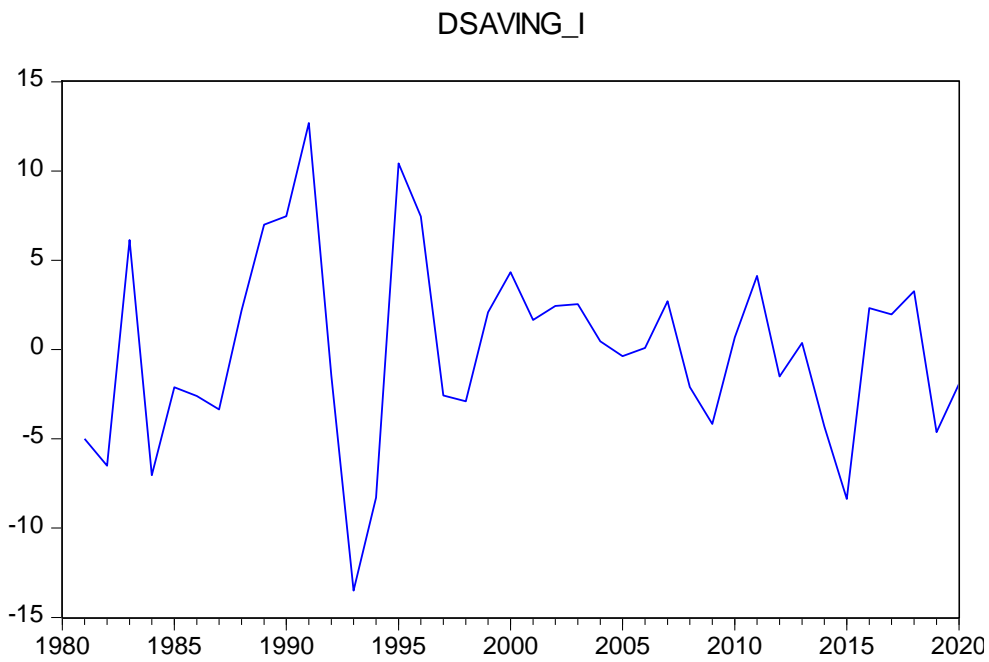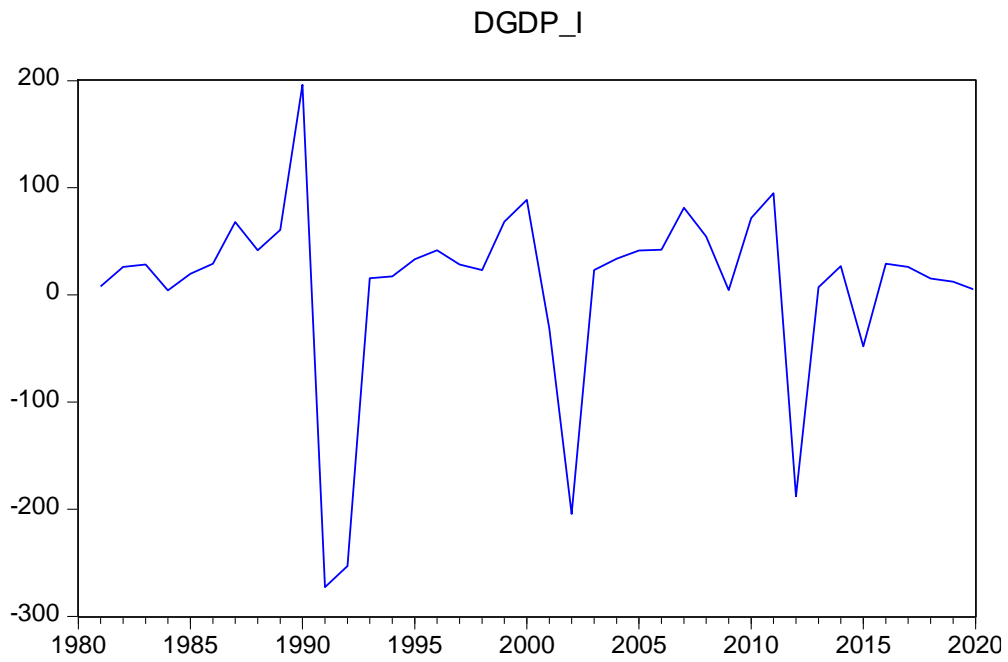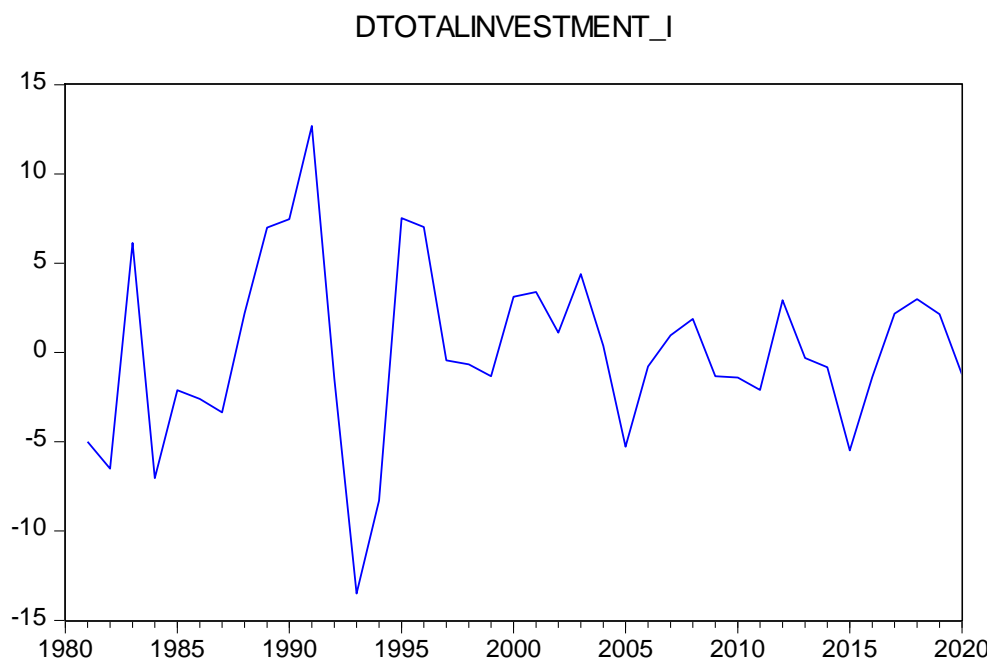
1. B : CORRELOGRAM **investigation**

CORRELOGRAM **investigation shows all variables (GDP_Iran, Saving_Iran and Total Investment_Iran) are not stationary and have unit root at level**

GDP_Iran

Date: 09/01/20   Time: 12:08

Sample: 1980 2020

Included observations: 41

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |******|	. |******|	1	0.770	0.770	26.108	0.000
. |**** |	**| . |	2	0.492	-0.246	37.053	0.000
. |** |	. |*. |	3	0.324	0.108	41.925	0.000
. |*. |	.*| . |	4	0.172	-0.156	43.328	0.000

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Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*. |	. | . |	5	0.076	0.070	43.609	0.000
. | . |	. | . |	6	0.055	0.038	43.761	0.000
. | . |	. | . |	7	0.055	0.017	43.918	0.000
. |*. |	. |*. |	8	0.086	0.091	44.316	0.000
. |*. |	. |*. |	9	0.177	0.161	46.049	0.000
. |** |	. |*. |	10	0.270	0.093	50.194	0.000
. |** |	.*| . |	11	0.270	-0.082	54.494	0.000
. |*. |	**| . |	12	0.125	-0.281	55.449	0.000
. | . |	. | . |	13	-0.016	-0.000	55.466	0.000
.*| . |	.*| . |	14	-0.131	-0.124	56.594	0.000
**| . |	. | . |	15	-0.208	0.030	59.531	0.000
**| . |	. | . |	16	-0.223	-0.028	63.052	0.000
.*| . |	. | . |	17	-0.182	0.067	65.487	0.000
.*| . |	. | . |	18	-0.134	-0.025	66.853	0.000
.*| . |	. | . |	19	-0.080	-0.015	67.361	0.000
. | . |	. | . |	20	-0.009	-0.013	67.368	0.000

Saving_Iran

Date: 09/02/20   Time: 15:12

Sample: 1980 2020

Included observations: 41

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |******|	. |******|	1	0.852	0.852	32.011	0.000
. |***** |	**| . |	2	0.633	-0.340	50.142	0.000
. |**** |	. |** |	3	0.516	0.340	62.488	0.000
. |**** |	. | . |	4	0.490	0.061	73.937	0.000
. |*** |	. | . |	5	0.466	-0.027	84.589	0.000
. |*** |	. | . |	6	0.399	-0.048	92.593	0.000
. |** |	. | . |	7	0.305	-0.056	97.419	0.000

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|** |	.| . |	8	0.219	-0.056	99.987	0.000
.|*. |	.*| . |	9	0.146	-0.085	101.16	0.000
.|*. |	.|*. |	10	0.107	0.082	101.81	0.000
.|*. |	.| . |	11	0.090	-0.028	102.28	0.000
.| . |	.*| . |	12	0.045	-0.110	102.41	0.000
.| . |	.*| . |	13	-0.051	-0.146	102.57	0.000
.*| . |	.| . |	14	-0.136	0.034	103.79	0.000
.*| . |	.*| . |	15	-0.177	-0.073	105.91	0.000
**| . |	.*| . |	16	-0.216	-0.157	109.19	0.000
**| . |	.*| . |	17	-0.284	-0.086	115.14	0.000
***| . |	.| . |	18	-0.349	-0.012	124.50	0.000
***| . |	.| . |	19	-0.375	-0.009	135.76	0.000
***| . |	.|*. |	20	-0.350	0.091	146.02	0.000

Total Investment_Iran

Date: 09/02/20   Time: 15:14

Sample: 1980 2020

Included observations: 41

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|******|	.|******|	1	0.814	0.814	29.170	0.000
.|**** |	***| . |	2	0.524	-0.407	41.593	0.000
.|** |	.|** |	3	0.346	0.271	47.134	0.000
.|** |	.|*. |	4	0.303	0.094	51.508	0.000
.|** |	.|*. |	5	0.325	0.077	56.675	0.000
.|** |	.*| . |	6	0.307	-0.086	61.427	0.000
.|** |	.| . |	7	0.226	-0.035	64.080	0.000
.|*. |	.|*. |	8	0.158	0.084	65.405	0.000
.|*. |	.*| . |	9	0.099	-0.150	65.949	0.000
.|*. |	.|*. |	10	0.089	0.153	66.395	0.000
.|*. |	.| . |	11	0.123	0.029	67.285	0.000
.|*. |	.*| . |	12	0.116	-0.135	68.109	0.000

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. | . |	**| . |	13	-0.003	-0.264	68.109	0.000
.*| . |	. |*. |	14	-0.137	0.079	69.339	0.000
.*| . |	. | . |	15	-0.189	0.020	71.768	0.000
.*| . |	**| . |	16	-0.199	-0.265	74.568	0.000
**| . |	. | . |	17	-0.213	0.013	77.894	0.000
**| . |	. | . |	18	-0.258	-0.051	82.983	0.000
**| . |	. | . |	19	-0.304	-0.011	90.372	0.000
**| . |	. | . |	20	-0.294	-0.001	97.605	0.000

1. B: CORRELOGRAM **investigation**
   CORRELOGRAM **investigation shows all variables (1st deference GDP_Iran, 1st deference Saving_Iran and 1st deference Total Investment_Iran) are stationary and have no unit root at level**

GDP_Iran

Date: 09/01/20 Time: 12:09

Sample: 1980 2020

Included observations: 40

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*. |	. |*. |	1	0.122	0.122	0.6460	0.422
**| . |	**| . |	2	-0.279	-0.298	4.0833	0.130
. | . |	. | . |	3	-0.025	0.063	4.1107	0.250
.*| . |	**| . |	4	-0.142	-0.258	5.0471	0.282
.*| . |	.*| . |	5	-0.178	-0.118	6.5746	0.254
.*| . |	.*| . |	6	-0.073	-0.178	6.8388	0.336
. | . |	.*| . |	7	-0.032	-0.121	6.8920	0.440
.*| . |	**| . |	8	-0.134	-0.292	7.8297	0.450
.*| . |	**| . |	9	-0.081	-0.232	8.1882	0.515
. |*** |	. |** |	10	0.418	0.279	17.965	0.056

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
.|** |	.| . |	11	0.257	0.008	21.777	0.026
.*| . |	.*| . |	12	-0.174	-0.099	23.595	0.023
. | . |	. | . |	13	-0.043	-0.040	23.711	0.034
. | . |	.*| . |	14	-0.055	-0.094	23.906	0.047
.*| . |	. | . |	15	-0.127	-0.021	24.987	0.050
.*| . |	.*| . |	16	-0.108	-0.196	25.801	0.057
. | . |	. | . |	17	0.014	-0.014	25.815	0.078
. | . |	.*| . |	18	0.010	-0.067	25.823	0.104
.*| . |	.*| . |	19	-0.126	-0.146	27.091	0.103
. |*. |	.*| . |	20	0.133	-0.089	28.575	0.096

Saving_Iran

Date: 09/02/20   Time: 15:18

Sample: 1980 2020

Included observations: 40

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |** |	. |** |	1	0.240	0.240	2.4724	0.116
**| . |	***| . |	2	-0.343	-0.425	7.6871	0.021
**| . |	.*| . |	3	-0.310	-0.118	12.055	0.007
. | . |	. | . |	4	-0.013	-0.035	12.063	0.017
. |*. |	. | . |	5	0.145	-0.004	13.074	0.023
. |*. |	. | . |	6	0.094	0.004	13.514	0.036
. | . |	. | . |	7	-0.024	-0.009	13.543	0.060
. | . |	. | . |	8	-0.040	0.028	13.628	0.092
.*| . |	.*| . |	9	-0.111	-0.134	14.300	0.112
.*| . |	. | . |	10	-0.072	-0.027	14.588	0.148
. |*. |	. | . |	11	0.100	0.069	15.168	0.175
. |*. |	. |*. |	12	0.180	0.077	17.116	0.145
. | . |	.*| . |	13	-0.045	-0.109	17.242	0.188
.*| . |	. | . |	14	-0.161	-0.002	18.913	0.168
. | . |	. |*. |	15	0.002	0.087	18.914	0.218

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*. |	. | . |	16	0.107	-0.014	19.708	0.234
. | . |	.*| . |	17	-0.015	-0.087	19.724	0.289
.*| . |	.*| . |	18	-0.138	-0.080	21.183	0.270
.*| . |	.*| . |	19	-0.174	-0.165	23.599	0.212
. | . |	.*| . |	20	-0.060	-0.112	23.904	0.247

Total Investment_Iran

Date: 09/02/20   Time: 15:17

Sample: 1980 2020

Included observations: 40

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |** |	. |** |	1	0.282	0.282	3.4328	0.064
**| . |	***| . |	2	-0.285	-0.397	7.0316	0.030
***| . |	.*| . |	3	-0.368	-0.185	13.185	0.004
.*| . |	.*| . |	4	-0.158	-0.106	14.345	0.006
. |*. |	. | . |	5	0.104	0.009	14.865	0.011
. |*. |	. | . |	6	0.150	-0.034	15.981	0.014
. | . |	.*| . |	7	-0.035	-0.130	16.043	0.025
. | . |	. | . |	8	-0.035	0.072	16.108	0.041
.*| . |	.*| . |	9	-0.127	-0.200	16.986	0.049
.*| . |	.*| . |	10	-0.145	-0.125	18.166	0.052
. |*. |	. |*. |	11	0.089	0.095	18.626	0.068
. |** |	. |*. |	12	0.305	0.178	24.191	0.019
. | . |	.*| . |	13	0.067	-0.152	24.474	0.027
**| . |	.*| . |	14	-0.211	-0.106	27.350	0.017
.*| . |	. |*. |	15	-0.130	0.170	28.487	0.019
. | . |	.*| . |	16	-0.025	-0.132	28.531	0.027
. |*. |	. | . |	17	0.087	-0.042	29.089	0.034
. | . |	. | . |	18	0.023	-0.057	29.130	0.047
.*| . |	.*| . |	19	-0.147	-0.128	30.867	0.042

		20	-0.091	-0.109	31.558	0.048
.*| . |	.*| . |					

1. C: Augmented Dickey-Fuller unit root Test

Augmented Dickey-Fuller unit root Test **investigation shows all variables (GDP_Iran, Saving_Iran and Total Investment_Iran) are not stationary and have unit root at level**

GDP_Iran

Null Hypothesis: GDP_I has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.066014	0.2589
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP_I)

Method: Least Squares

Date: 09/01/20   Time: 12:11

Sample (adjusted): 1981 2020

Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP_I(-1)	-0.198546	0.096101	-2.066014	0.0457
C	65.03917	30.26937	2.148680	0.0381
R-squared	0.100983	Mean dependent var		9.238650

Adjusted R-squared	0.077325	S.D. dependent var	89.98033
S.E. of regression	86.43147	Akaike info criterion	11.80529
Sum squared resid	283875.2	Schwarz criterion	11.88973
Log likelihood	-234.1057	Hannan-Quinn criter.	11.83582
F-statistic	4.268412	Durbin-Watson stat	1.608848
Prob(F-statistic)	0.045694		

Saving_Iran

Null Hypothesis: SAVING_I has a unit root

Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.620130	0.4628
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SAVING_I)

Method: Least Squares

Date: 09/02/20   Time: 15:21

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SAVING_I(-1)	-0.138212	0.085309	-1.620130	0.1144
D(SAVING_I(-1))	0.360283	0.149137	2.415777	0.0212
D(SAVING_I(-2))	-0.335070	0.157160	-2.132028	0.0403

C	5.477801	3.279090	1.670524	0.1040

R-squared	0.283420	Mean dependent var	0.293211
Adjusted R-squared	0.220193	S.D. dependent var	5.275824
S.E. of regression	4.658906	Akaike info criterion	6.014739
Sum squared resid	737.9837	Schwarz criterion	6.187116
Log likelihood	-110.2800	Hannan-Quinn criter.	6.076070
F-statistic	4.482542	Durbin-Watson stat	1.945911
Prob(F-statistic)	0.009346		

Total Investment Iran

Null Hypothesis: TOTALINVESTMENT_I has a unit root

Exogenous: Constant

Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.955100	0.3046
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TOTALINVESTMENT_I)

Method: Least Squares

Date: 09/02/20   Time: 15:22

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTALINVESTMENT_I(-1)	-0.191089	0.097739	-1.955100	0.0588

D(TOTALINVESTMENT_I(-1))	0.426262	0.149543	2.850439	0.0074
D(TOTALINVESTMENT_I(-2))	-0.257713	0.160406	-1.606627	0.1174
C	7.018079	3.498351	2.006111	0.0529

R-squared	0.297831	Mean dependent var	0.381553
Adjusted R-squared	0.235875	S.D. dependent var	4.875674
S.E. of regression	4.262034	Akaike info criterion	5.836671
Sum squared resid	617.6079	Schwarz criterion	6.009048
Log likelihood	-106.8967	Hannan-Quinn criter.	5.898002
F-statistic	4.807127	Durbin-Watson stat	1.924517
Prob(F-statistic)	0.006756		

1. C : Augmented Dickey-Fuller unit root Test

   Augmented Dickey-Fuller unit root Test **investigation shows all variables (1st difference GDP_Iran, 1st difference Saving_Iran and 1st difference Total Investment_Iran) are stationary and have no unit root.**

GDP_Iran

Null Hypothesis: D(GDP_I) has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.332980	0.0001
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP_I,2)

Method: Least Squares

Date: 09/01/20   Time: 12:14

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP_I(-1))	-1.139259	0.213625	-5.332980	0.0000
D(GDP_I(-1),2)	0.298354	0.161257	1.850174	0.0727
C	10.10282	14.72395	0.686149	0.4971

R-squared	0.488926	Mean dependent var		-0.566553
Adjusted R-squared	0.459722	S.D. dependent var		122.3446
S.E. of regression	89.92774	Akaike info criterion		11.91155
Sum squared resid	283044.9	Schwarz criterion		12.04083
Log likelihood	-223.3194	Hannan-Quinn criter.		11.95754
F-statistic	16.74161	Durbin-Watson stat		1.963573
Prob(F-statistic)	0.000008			

Null Hypothesis: D(DGDP_I) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.477185	0.0006
Test critical values:	1% level	-4.296729	
	5% level	-3.568379	
	10% level	-3.218382	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DGDP_I,2)

Method: Least Squares

Date: 09/02/20   Time: 15:33

Sample (adjusted): 1991 2020

Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DGDP_I(-1))	-7.796091	1.423376	-5.477185	0.0000
D(DGDP_I(-1),2)	6.062567	1.338691	4.528727	0.0002
D(DGDP_I(-2),2)	5.103573	1.225391	4.164852	0.0005
D(DGDP_I(-3),2)	4.322745	1.062164	4.069754	0.0007
D(DGDP_I(-4),2)	3.436182	0.889340	3.863744	0.0010
D(DGDP_I(-5),2)	2.627955	0.698659	3.761427	0.0013
D(DGDP_I(-6),2)	1.905906	0.515926	3.694150	0.0015
D(DGDP_I(-7),2)	1.208533	0.322734	3.744666	0.0014
D(DGDP_I(-8),2)	0.670524	0.183411	3.655851	0.0017
C	-70.67879	53.92818	-1.310610	0.2056
@TREND("1980")	2.255845	2.003131	1.126160	0.2741

R-squared	0.878637	Mean dependent var	-4.778333
Adjusted R-squared	0.814762	S.D. dependent var	218.4988
S.E. of regression	94.04043	Akaike info criterion	12.20190
Sum squared resid	168028.4	Schwarz criterion	12.71567
Log likelihood	-172.0285	Hannan-Quinn criter.	12.36626
F-statistic	13.75550	Durbin-Watson stat	1.110676
Prob(F-statistic)	0.000001		

Null Hypothesis: D(DGDP_I) has a unit root

Exogenous: None

Lag Length: 8 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.395291	0.0000
Test critical values:	1% level	-2.644302	
	5% level	-1.952473	
	10% level	-1.610211	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DGDP_I,2)

Method: Least Squares

Date: 09/02/20   Time: 15:33

Sample (adjusted): 1991 2020

Included observations: 30 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DGDP_I(-1))	-7.606391	1.409820	-5.395291	0.0000
D(DGDP_I(-1),2)	5.895471	1.326486	4.444426	0.0002
D(DGDP_I(-2),2)	4.962482	1.214719	4.085291	0.0005
D(DGDP_I(-3),2)	4.218162	1.053602	4.003564	0.0006
D(DGDP_I(-4),2)	3.360415	0.882489	3.807883	0.0010
D(DGDP_I(-5),2)	2.579246	0.693592	3.718679	0.0013
D(DGDP_I(-6),2)	1.875231	0.512434	3.659459	0.0015
D(DGDP_I(-7),2)	1.195721	0.320696	3.728515	0.0012
D(DGDP_I(-8),2)	0.660649	0.182593	3.618153	0.0016

R-squared	0.866835	Mean dependent var	-4.778333
Adjusted R-squared	0.816106	S.D. dependent var	218.4988
S.E. of regression	93.69860	Akaike info criterion	12.16137
Sum squared resid	184368.0	Schwarz criterion	12.58173
Log likelihood	-173.4205	Hannan-Quinn criter.	12.29585
Durbin-Watson stat	1.050180		

Saving Iran

Null Hypothesis: D(SAVING_I) has a unit root

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.011539	0.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SAVING_I,2)

Method: Least Squares

Date: 09/02/20   Time: 15:29

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SAVING_I(-1))	-1.112677	0.185090	-6.011539	0.0000
D(SAVING_I(-1),2)	0.428105	0.149650	2.860699	0.0071
C	0.308515	0.773744	0.398730	0.6925

R-squared	0.515914	Mean dependent var	0.120395
Adjusted R-squared	0.488252	S.D. dependent var	6.662075
S.E. of regression	4.765820	Akaike info criterion	6.036473
Sum squared resid	794.9565	Schwarz criterion	6.165756
Log likelihood	-111.6930	Hannan-Quinn criter.	6.082471
F-statistic	18.65059	Durbin-Watson stat	2.000718
Prob(F-statistic)	0.000003		

Null Hypothesis: D(DGDP_S) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.340716	0.0000
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DGDP_S,2)

Method: Least Squares

Date: 09/02/20   Time: 15:36

Sample (adjusted): 1987 2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DGDP_S(-1))	-4.511558	0.711522	-6.340716	0.0000
D(DGDP_S(-1),2)	2.751028	0.620886	4.430813	0.0001
D(DGDP_S(-2),2)	2.063511	0.510204	4.044483	0.0004
D(DGDP_S(-3),2)	1.353232	0.355679	3.804647	0.0007
D(DGDP_S(-4),2)	0.657561	0.187890	3.499717	0.0016
C	26.32971	21.93682	1.200252	0.2405
@TREND("1980")	-1.014643	0.864267	-1.173992	0.2506

R-squared	0.828260	Mean dependent var	0.369176
Adjusted R-squared	0.790095	S.D. dependent var	105.5593
S.E. of regression	48.36236	Akaike info criterion	10.77656

Sum squared resid	63150.78	Schwarz criterion	11.09081
Log likelihood	-176.2015	Hannan-Quinn criter.	10.88373
F-statistic	21.70239	Durbin-Watson stat	2.179253
Prob(F-statistic)	0.000000		

Null Hypothesis: D(DGDP_S) has a unit root

Exogenous: None

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.282751	0.0000
Test critical values:	1% level	-2.634731	
	5% level	-1.951000	
	10% level	-1.610907	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DGDP_S,2)

Method: Least Squares

Date: 09/02/20   Time: 15:36

Sample (adjusted): 1987 2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DGDP_S(-1))	-4.360446	0.694035	-6.282751	0.0000
D(DGDP_S(-1),2)	2.619696	0.605725	4.324891	0.0002
D(DGDP_S(-2),2)	1.947268	0.496386	3.922887	0.0005
D(DGDP_S(-3),2)	1.270447	0.345425	3.677925	0.0010
D(DGDP_S(-4),2)	0.617737	0.182754	3.380155	0.0021
R-squared	0.818917	Mean dependent var		0.369176

Adjusted R-squared	0.793940	S.D. dependent var	105.5593
S.E. of regression	47.91747	Akaike info criterion	10.71189
Sum squared resid	66586.42	Schwarz criterion	10.93635
Log likelihood	-177.1021	Hannan-Quinn criter.	10.78844
Durbin-Watson stat	2.096251		

Total Investment_Iran

Null Hypothesis: D(TOTALINVESTMENT_I) has a unit root

Exogenous: Constant

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.678303	0.0000
Test critical values:	1% level	-3.615588	
	5% level	-2.941145	
	10% level	-2.609066	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TOTALINVESTMENT_I,2)

Method: Least Squares

Date: 09/02/20   Time: 15:30

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOTALINVESTMENT_I(-1))	-1.024378	0.180402	-5.678303	0.0000
D(TOTALINVESTMENT_I(-1),2)	0.392609	0.150534	2.608108	0.0133
C	0.313692	0.719608	0.435921	0.6656

R-squared	0.485851	Mean dependent var	0.138316
Adjusted R-squared	0.456471	S.D. dependent var	6.009609
S.E. of regression	4.430549	Akaike info criterion	5.890581
Sum squared resid	687.0418	Schwarz criterion	6.019864
Log likelihood	-108.9210	Hannan-Quinn criter.	5.936579
F-statistic	16.53682	Durbin-Watson stat	2.019060
Prob(F-statistic)	0.000009		

Null Hypothesis: D(TOTALINVESTMENT_I) has a unit root

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.585558	0.0003
Test critical values:	1% level	-4.219126	
	5% level	-3.533083	
	10% level	-3.198312	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TOTALINVESTMENT_I,2)

Method: Least Squares

Date: 09/02/20   Time: 15:37

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOTALINVESTMENT_I(-1))	-1.021966	0.182966	-5.585558	0.0000
D(TOTALINVESTMENT_I(-1),2)	0.390515	0.152685	2.557647	0.0152

C	0.745005	1.604248	0.464395	0.6453
@TREND("1980")	-0.020070	0.066494	-0.301834	0.7646

R-squared	0.487225	Mean dependent var	0.138316
Adjusted R-squared	0.441980	S.D. dependent var	6.009609
S.E. of regression	4.489222	Akaike info criterion	5.940536
Sum squared resid	685.2058	Schwarz criterion	6.112914
Log likelihood	-108.8702	Hannan-Quinn criter.	6.001867
F-statistic	10.76863	Durbin-Watson stat	2.023592
Prob(F-statistic)	0.000040		

Null Hypothesis: D(TOTALINVESTMENT_I) has a unit root

Exogenous: None

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.730705	0.0000
Test critical values:	1% level	-2.627238	
	5% level	-1.949856	
	10% level	-1.611469	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TOTALINVESTMENT_I,2)

Method: Least Squares

Date: 09/02/20   Time: 15:38

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.

D(TOTALINVESTMENT_I(-1))	-1.021404	0.178234	-5.730705	0.0000
D(TOTALINVESTMENT_I(-1),2)	0.392832	0.148830	2.639467	0.0122

R-squared	0.483059	Mean dependent var	0.138316
Adjusted R-squared	0.468700	S.D. dependent var	6.009609
S.E. of regression	4.380424	Akaike info criterion	5.843364
Sum squared resid	690.7720	Schwarz criterion	5.929553
Log likelihood	-109.0239	Hannan-Quinn criter.	5.874029
Durbin-Watson stat	2.014529		

Regression

1a. Method: Least Squares at level

Dependent Variable: GDP_I

Method: Least Squares

Date: 09/01/20   Time: 12:06

Sample: 1980 2020

Included observations: 41

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SAVING_I	13.73671	7.922439	1.733900	0.0910
TOTALINVESTMENT_I	-11.21619	9.472713	-1.184052	0.2437
C	167.5983	100.9572	1.660093	0.1051

R-squared	0.132030	Mean dependent var	285.4854
Adjusted R-squared	0.086348	S.D. dependent var	145.0184
S.E. of regression	138.6160	Akaike info criterion	12.77165
Sum squared resid	730147.4	Schwarz criterion	12.89703
Log likelihood	-258.8188	Hannan-Quinn criter.	12.81731
F-statistic	2.890165	Durbin-Watson stat	0.445145
Prob(F-statistic)	0.067856		

The Regression Equations:

GDP_I = 167.59+ 13.73 SAVING_I- 11.21 TOTALINVESTMENT_I +€

<pre>
                    Not Significant   Not Significant
</pre>

1b. Method: Least Squares at 1st difference of variables

Dependent Variable: DGDP_I

Method: Least Squares

Date: 09/02/20   Time: 15:44

Sample (adjusted): 1981 2020

Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DSAVING_I	7.806005	5.876141	1.328424	0.1922
DTOTALINVESTMENT_I	-9.572745	6.317058	-1.515380	0.1382
C	10.02605	14.18270	0.706921	0.4840

R-squared	0.058471	Mean dependent var		9.238650
Adjusted R-squared	0.007578	S.D. dependent var		89.98033
S.E. of regression	89.63876	Akaike info criterion		11.90149
Sum squared resid	297299.0	Schwarz criterion		12.02816
Log likelihood	-235.0298	Hannan-Quinn criter.		11.94729
F-statistic	1.148890	Durbin-Watson stat		1.699875
Prob(F-statistic)	0.328038			

The Regression Equations:

DGDP_I = 10.02 + 7.80 DSAVING_I- 9.57 DTOTALINVESTMENT_I +€

<pre>
                        Not Significant   Not Significant
</pre>

2. Breusch-Godfrey Serial Correlation LM Test: H0 = No Serial Correlation, while Obs*R-squared **P-Value > 5%**

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.215163	Prob. F(2,35)	0.1242
Obs*R-squared	4.494334	Prob. Chi-Square(2)	0.1057

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 09/02/20   Time: 15:54

Sample: 1981 2020

Included observations: 40

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DSAVING_I	1.329210	5.732630	0.231867	0.8180
DTOTALINVESTMENT_I	-0.345179	6.264783	-0.055098	0.9564
C	-0.427383	13.74174	-0.031101	0.9754
RESID(-1)	0.178643	0.172366	1.036419	0.3071
RESID(-2)	-0.320996	0.174260	-1.842054	0.0740

R-squared	0.112358	Mean dependent var	-1.90E-15
Adjusted R-squared	0.010914	S.D. dependent var	87.31009
S.E. of regression	86.83235	Akaike info criterion	11.88230
Sum squared resid	263895.0	Schwarz criterion	12.09341
Log likelihood	-232.6461	Hannan-Quinn criter.	11.95863
F-statistic	1.107582	Durbin-Watson stat	1.926383
Prob(F-statistic)	0.368443		

3. Heteroskedasticity Test: Breusch-Pagan-Godfrey H0 =No Heteroskedasticity, while Obs*R-squared **P- Value > 5%**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.697469	Prob. F(2,37)	0.0806
Obs*R-squared	5.090171	Prob. Chi-Square(2)	0.0785
Scaled explained SS	12.01515	Prob. Chi-Square(2)	0.0025

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 09/02/20   Time: 16:03

Sample: 1981 2020

Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7335.802	2683.127	2.734050	0.0095
DSAVING_I	-13.63364	1111.667	-0.012264	0.9903
DTOTALINVESTMENT_I	1289.474	1195.081	1.078985	0.2876

R-squared	0.127254	Mean dependent var	7432.475
Adjusted R-squared	0.080079	S.D. dependent var	17680.84
S.E. of regression	16958.14	Akaike info criterion	22.38692
Sum squared resid	1.06E+10	Schwarz criterion	22.51359
Log likelihood	-444.7384	Hannan-Quinn criter.	22.43272
F-statistic	2.697469	Durbin-Watson stat	1.206893
Prob(F-statistic)	0.080616		

4. Jarque-Bera Normality test. Result p=0.0000. Residuals are not normal distributed

Series: Residuals	
Sample 1981 2020	
Observations 40	
Mean	-1.90e-15
Median	18.06565
Maximum	199.2554
Minimum	-265.6999
Std. Dev.	87.31009
Skewness	-1.617716
Kurtosis	6.517514
Jarque-Bera	38.06820
Probability	0.000000
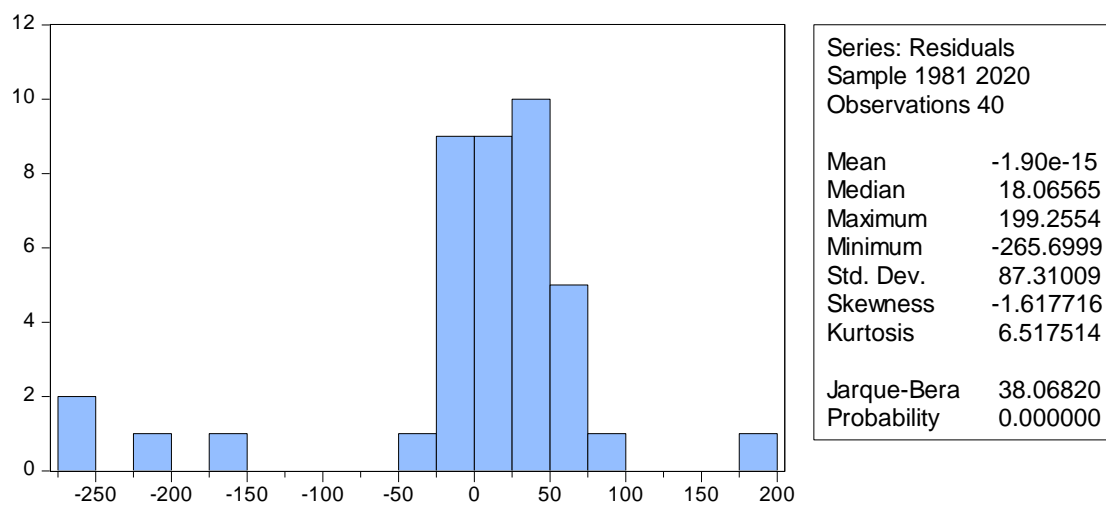
5. Residuals Stability test/ Result: Stabil
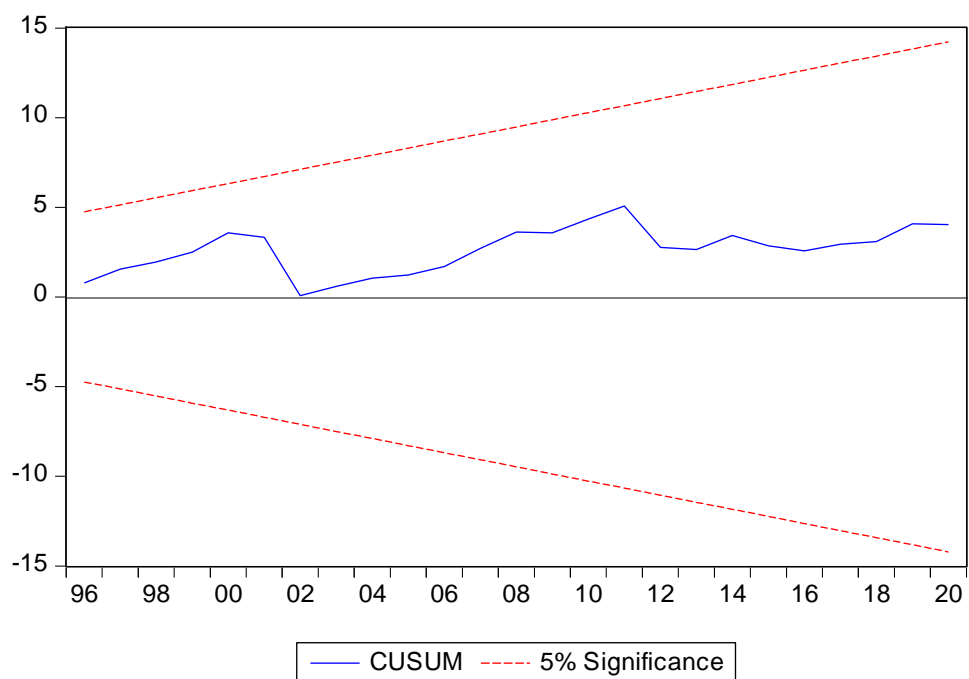
6. The Variables (DGDP_i, DSAVING_IandDTOTALINVESTMENT_I) are cointegrated (long run association according Johansen cointegration test-Pedroni Residual Cointegration Test). We can run restricted VAR (VECM –Model) and We have to run

Date: 09/02/20   Time: 16:08

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Trend assumption: Linear deterministic trend

Series: DGDP_I DSAVING_I DTOTALINVESTMENT_I

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.586706	81.97084	29.79707	0.0000
At most 1 *	0.536440	48.39417	15.49471	0.0000
At most 2 *	0.396320	19.17900	3.841466	0.0000

 Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

 * denotes rejection of the hypothesis at the 0.05 level

 **MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.586706	33.57668	21.13162	0.0006
At most 1 *	0.536440	29.21516	14.26460	0.0001
At most 2 *	0.396320	19.17900	3.841466	0.0000

 Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

DGDP_I	DSAVING_I	DTOTALINVEST MENT_I
0.005987	-0.284537	0.057069
-0.012403	-0.368970	0.343577
0.008439	-0.478619	0.620907

Unrestricted Adjustment Coefficients (alpha):

D(DGDP_I)	1.904962	72.06717	-35.70949
D(DSAVING_I)	4.903528	-0.241673	-0.172050
D(DTOTALINVE STMENT_I)	3.507636	-1.635925	-1.333062

1 Cointegrating Equation(s):   Log likelihood   -432.5745

Normalized cointegrating coefficients (standard error in parentheses)

DGDP_I	DSAVING_I	DTOTALINVEST MENT_I
1.000000	-47.52187	9.531329
	(16.2038)	(17.2571)

Adjustment coefficients (standard error in parentheses)

D(DGDP_I)	0.011406
	(0.11839)
D(DSAVING_I)	0.029360
	(0.00431)
D(DTOTALINVE STMENT_I)	0.021002
	(0.00444)

2 Cointegrating Equation(s):   Log likelihood   -417.9669

Normalized cointegrating coefficients (standard error in parentheses)

DGDP_I	DSAVING_I	DTOTALINVESTMENT_I
1.000000	0.000000	-13.36704
		(3.32527)
0.000000	1.000000	-0.481849
		(0.09638)

Adjustment coefficients (standard error in parentheses)

D(DGDP_I)	-0.882431	-27.13266
	(0.21049)	(7.12111)
D(DSAVING_I)	0.032357	-1.306063
	(0.00990)	(0.33504)
D(DTOTALINVESTMENT_I)	0.041292	-0.394443
	(0.00943)	(0.31895)

Appendix No. 2: Statistical Data Analyzes of Saudi Arabia

Test Results and Discussion for Saudi Arabia

To interpret the results of simple linear regression, Breusch- Godfrey Serial Correlation LM Test, Heteroskedasticity: Breusch-Pagan-Godfrey and Jarque-Bera-Normality Test, Stability Test and draw a conclusion.

The hypotheses have been tested using simple linear regression addressing the issues of ordinary least square assumptions.

$$\gamma = \alpha + b1c1 + b2c2 + \mathbb{C}$$

Where γ the dependent variable gross domestic production (**GDP_Saudi**) is, α is the intercept of γ b1 and b2 are the slope coefficients and c1 and c2 are the independents variables such as **Saving_Saudi and Total Investment_Saudi**. The error term is denoted as $\mathbb{C}$. The result of the regression analysis is presented below.

Testable Hypothesis

H0= the independents variables such as **Saving_Saudi and Total Investment_Saudi** are not significantly influencing the dependent variable gross domestic production.

Ha= the independent variables are significantly influencing the dependent variable gross domestic production.

H01= No cross-section dependence (correlation) in residuals

Ha1= Cross-section dependence (correlation) in residuals

H02= No heteroskedasticity is found in residuals

Ha2= Hheteroskedasticity is found in residuals

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The Regression Equations:

> DGDP_S = 17.63 + 3.55 DSAVING_S- 3.84 DTOTALINVESTMENT_S + Є
>
> Significant   Significant at 10%

Results and Discussion

Coefficient of Determination Adj– R^2=0.3992

P – Value of "F" Statistic = 0.0000

P – Value of SAVING_S Independent Variable=0.0002

P – Value of TOTAL INVESTMENTS Variable=0.0642

P – Value of Obs *R- Squared: Breusch – Godfrey Serial

Correlation LM Test= 0.5398

P – Value of Obs *R- Squared: Heteroskedasticity: Breusch – Godfrey

Test =0.6684

P – Value of Jarque-Bera – Normality Test = 0.1484

The above results were obtained from data analysis. It shows that coefficient of Determination Adj– R^2= 0.3992 which means the independent variable **Saving_Saudi and Total Investment_Saudi** are explaining the GDP in Saudi by 39.92 %. The P – value of F-Statistic is 0.0000 indicates the model is fit for the overall population. It is ensured that the independent variable **Saving_Saudi** is significantly influencing the dependent variable GDP with p-value of 0.0002 smaller than 5%. Hence the null hypothesis H0 is rejected. Also the independent variable **Total Investment_Saudi** is at significantly influencing the dependent variable GDP with p-value of 0.0642 smaller than 10 %.

The P – Value of Breusch – Godfrey Serial Correlation LM Test is 0.5398. It is larger than 5% and the null hypothesis H01 is rejected, which means the data series is not suffering from serial correlation.

The P – Value of Obs *R- Squared: Heteroskedasticity: Breusch – Godfrey Test 0.6684 is understood that the heteroskedasticity is not found since the p-value is larger than 5% and null hypothesis H02 is not rejected.

The P – Value of Jarque-Bera – Normality Test 0.1484 is larger than

5%, hence the null hypothesis H03 is not rejected which means that the residuals are normally distributed.

The three variables GDP_Saudi, Saving_Saudi and Total Investment_Saudi are not stationary (they have unit roots) at level and they became stationary (they have no unit roots) after first difference. But the Variables **(GDP_ Saudi, Saving_ Saudi and Total Investment_ Saudi)** are cointegrated.

Regression Analysis–GDP_Saudi, Saving_Saudi and Total Investment_Saudi

1. A : **Graphical investigation**

Graphical investigation shows all variables(GDP_ Saudi, Saving_ Saudi and Total Investment_ Saudi) are not stationary and have unit root at level

GDP_S

SAVING_S

TOTALINVESTMENT_S

Graphical investigation

Graphical investigation shows all variables (1ˢᵗ deference GDP_ Saudi, 1ˢᵗ deference Saving_ Saudi and 1ˢᵗ deference   Total Investment_ Saudi) are stationary and have no unit root at level

DGDP_S

DSAVING_S

DTOTALINVESTMENT_S

1. B: CORRELOGRAM investigation

CORRELOGRAM **investigation shows all variables (GDP_ Saudi, Saving_ Saudi and Total Investment_ Saudi) are not stationary and have unit root at level**

GDP_ Saudi

Date: 09/02/20   Time: 16:23

Sample: 1980 2020

Included observations: 41

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*******	. |*******	1	0.936	0.936	38.652	0.000
. |******|	.*| . |	2	0.866	-0.092	72.520	0.000
. |******|	.*| . |	3	0.788	-0.086	101.36	0.000
. |***** |	. | . |	4	0.724	0.070	126.36	0.000
. |***** |	. | . |	5	0.665	-0.004	148.05	0.000
. |**** |	.*| . |	6	0.600	-0.103	166.20	0.000
. |**** |	**| . |	7	0.501	-0.316	179.21	0.000
. |*** |	.*| . |	8	0.394	-0.093	187.52	0.000
. |** |	.*| . |	9	0.286	-0.078	192.01	0.000
. |*. |	. | . |	10	0.191	-0.016	194.08	0.000
. |*. |	. |*. |	11	0.120	0.099	194.94	0.000
. | . |	. |*. |	12	0.065	0.075	195.19	0.000
. | . |	.*| . |	13	-0.009	-0.165	195.20	0.000
.*| . |	. |*. |	14	-0.069	0.126	195.51	0.000
.*| . |	. | . |	15	-0.124	0.026	196.54	0.000
.*| . |	.*| . |	16	-0.172	-0.103	198.63	0.000
**| . |	. | . |	17	-0.208	-0.064	201.82	0.000
**| . |	. | . |	18	-0.238	-0.053	206.17	0.000
**| . |	. | . |	19	-0.266	-0.002	211.84	0.000
**| . |	.*| . |	20	-0.291	-0.089	218.93	0.000

Saving_ Saudi

Date: 09/02/20   Time: 16:25

Sample: 1980 2020

Included observations: 41

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |******|	. |******|	1	0.879	0.879	34.019	0.000
. |***** |	.*| . |	2	0.745	-0.118	59.110	0.000
. |***** |	. | . |	3	0.640	0.052	78.110	0.000
. |**** |	. | . |	4	0.566	0.062	93.386	0.000
. |*** |	.*| . |	5	0.479	-0.111	104.63	0.000
. |*** |	. |*. |	6	0.418	0.088	113.41	0.000
. |** |	.*| . |	7	0.335	-0.156	119.23	0.000
. |** |	.*| . |	8	0.240	-0.092	122.32	0.000
. |*. |	**| . |	9	0.108	-0.232	122.96	0.000
. | . |	. | . |	10	0.001	-0.017	122.96	0.000
.*| . |	. | . |	11	-0.071	0.031	123.25	0.000
.*| . |	. | . |	12	-0.118	-0.022	124.10	0.000
.*| . |	.*| . |	13	-0.192	-0.138	126.43	0.000
**| . |	. | . |	14	-0.254	-0.022	130.64	0.000
**| . |	. |*. |	15	-0.287	0.078	136.23	0.000
**| . |	.*| . |	16	-0.335	-0.160	144.16	0.000
***| . |	. | . |	17	-0.383	-0.008	154.95	0.000
***| . |	. | . |	18	-0.396	0.012	166.96	0.000
***| . |	.*| . |	19	-0.418	-0.177	180.97	0.000
***| . |	. | . |	20	-0.436	0.008	196.95	0.000

Total Investment_ Saudi

Date: 09/02/20   Time: 16:27

Sample: 1980 2020

Included observations: 41

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |******	. |******	1	0.770	0.770	26.159	0.000
. |****	.*| .	2	0.566	-0.067	40.653	0.000
. |***	. | .	3	0.441	0.067	49.674	0.000
. |***	. |*.	4	0.412	0.162	57.767	0.000
. |***	. |*.	5	0.445	0.170	67.447	0.000
. |***	.*| .	6	0.358	-0.203	73.904	0.000
. |**	. |*.	7	0.297	0.089	78.476	0.000
. |**	. | .	8	0.224	-0.064	81.154	0.000
. |*.	.*| .	9	0.149	-0.100	82.379	0.000
. | .	.*| .	10	0.053	-0.180	82.536	0.000
. | .	. | .	11	-0.042	-0.034	82.639	0.000
.*| .	.*| .	12	-0.136	-0.198	83.768	0.000
.*| .	. |*.	13	-0.146	0.111	85.111	0.000
.*| .	. |*.	14	-0.102	0.090	85.786	0.000
.*| .	. | .	15	-0.104	-0.031	86.518	0.000
.*| .	. |*.	16	-0.094	0.100	87.135	0.000
.*| .	. | .	17	-0.115	0.070	88.109	0.000
.*| .	**| .	18	-0.194	-0.264	90.983	0.000
**| .	.*| .	19	-0.267	-0.112	96.688	0.000
**| .	. | .	20	-0.289	0.044	103.71	0.000

1. B: CORRELOGRAM **investigation**

    CORRELOGRAM **investigation shows all variables (1ˢᵗdeference GDP_Saudi, 1ˢᵗ deference Saving_ Saudi and 1ˢᵗ deference Total Investment_ Saudi) are stationary and have no unit root at level**

GDP_ Saudi

Date: 09/02/20 Time: 16:24

Sample: 1980 2020

Included observations: 40

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*.		. |*.		1	0.175	0.175	1.3161	0.251
. | .		. | .		2	-0.033	-0.065	1.3630	0.506
. | .		. | .		3	-0.029	-0.012	1.4002	0.705
. | .		. | .		4	-0.050	-0.046	1.5150	0.824
. | .		. | .		5	-0.008	0.008	1.5179	0.911
. |**		. |**		6	0.330	0.337	6.8850	0.332
. |*.		. | .		7	0.117	-0.006	7.5814	0.371
. | .		. | .		8	-0.001	0.003	7.5815	0.475
**| .		**| .		9	-0.210	-0.231	9.9718	0.353
. | .		. |*.		10	-0.019	0.100	9.9927	0.441
. | .		. | .		11	0.018	0.018	10.012	0.529
. | .		.*| .		12	-0.005	-0.130	10.014	0.615
. | .		. | .		13	-0.004	-0.043	10.015	0.693
. | .		. | .		14	0.011	-0.008	10.023	0.761
. | .		. |*.		15	-0.010	0.183	10.030	0.818
. | .		. | .		16	-0.017	-0.063	10.050	0.864
. | .		. | .		17	-0.014	-0.041	10.066	0.901
. | .		. | .		18	-0.026	-0.050	10.118	0.928
.*| .		. | .		19	-0.084	-0.018	10.676	0.934
.*| .		. | .		20	-0.077	-0.032	11.176	0.942

Saving_ Saudi

Date: 09/02/20   Time: 16:25

Sample: 1980 2020

Included observations: 40

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |*.		. |*.		1	0.094	0.094	0.3820	0.537
. | .		. | .		2	0.025	0.016	0.4092	0.815

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. | . |	. | . |	3	0.025	0.022	0.4385	0.932
. | . |	. | . |	4	0.040	0.035	0.5116	0.972
. | . |	. | . |	5	-0.048	-0.057	0.6229	0.987
. |*. |	. |*. |	6	0.110	0.119	1.2181	0.976
. | . |	. | . |	7	0.039	0.018	1.2966	0.989
. |*. |	. |*. |	8	0.114	0.109	1.9843	0.981
.*| . |	.*| . |	9	-0.095	-0.123	2.4766	0.982
.*| . |	.*| . |	10	-0.183	-0.187	4.3572	0.930
. | . |	. |*. |	11	0.030	0.079	4.4082	0.956
. | . |	. | . |	12	0.001	-0.016	4.4083	0.975
.*| . |	. | . |	13	-0.067	-0.044	4.6854	0.981
.*| . |	.*| . |	14	-0.140	-0.173	5.9472	0.968
. | . |	. | . |	15	0.040	0.069	6.0524	0.979
. | . |	. | . |	16	-0.009	0.043	6.0583	0.987
.*| . |	.*| . |	17	-0.161	-0.154	7.9508	0.968
. |*. |	. |*. |	18	0.110	0.197	8.8763	0.963
.*| . |	**| . |	19	-0.098	-0.225	9.6369	0.961
.*| . |	.*| . |	20	-0.145	-0.092	11.412	0.935

Total Investment_ Saudi

Date: 09/02/20   Time: 16:28

Sample: 1980 2020

Included observations: 40

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. | . |	. | . |	1	-0.015	-0.015	0.0100	0.920
.*| . |	.*| . |	2	-0.177	-0.177	1.3915	0.499
**| . |	**| . |	3	-0.299	-0.315	5.4632	0.141
.*| . |	**| . |	4	-0.140	-0.229	6.3814	0.172
. |*. |	. | . |	5	0.171	0.026	7.7901	0.168
. | . |	.*| . |	6	0.017	-0.153	7.8042	0.253

. | . |	. | . |	7	0.046	-0.050	7.9122	0.340
. | . |	. | . |	8	0.012	0.024	7.9196	0.441
. | . |	. | . |	9	0.039	0.063	8.0007	0.534
.*| . |	.*| . |	10	-0.100	-0.117	8.5662	0.574
. | . |	. | . |	11	0.010	0.060	8.5721	0.661
.*| . |	.*| . |	12	-0.119	-0.138	9.4209	0.667
.*| . |	**| . |	13	-0.105	-0.218	10.104	0.685
. |*. |	. | . |	14	0.142	0.027	11.403	0.654
. | . |	.*| . |	15	-0.001	-0.119	11.403	0.724
. | . |	.*| . |	16	0.067	-0.106	11.718	0.763
. |*. |	. |** |	17	0.141	0.220	13.169	0.725
. | . |	. |*. |	18	0.013	0.126	13.181	0.781
.*| . |	.*| . |	19	-0.131	-0.119	14.558	0.750
.*| . |	. | . |	20	-0.175	-0.033	17.142	0.644

1. C : Augmented Dickey-Fuller unit root Test

Augmented Dickey-Fuller unit root Test **investigation shows all variables (GDP Saudi, Saving_Saudi and Total Investment_Saudi) are not stationary and have unit root at level**

GDP_Saudi

Null Hypothesis: GDP_S has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.705865	0.9908
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(GDP_S)

Method: Least Squares

Date: 09/02/20   Time: 16:40

Sample (adjusted): 1981 2020

Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP_S(-1)	0.021339	0.030231	0.705865	0.4846
C	8.673532	12.09755	0.716966	0.4778

R-squared	0.012942	Mean dependent var		15.46993
Adjusted R-squared	-0.013033	S.D. dependent var		46.02317
S.E. of regression	46.32212	Akaike info criterion		10.55782
Sum squared resid	81538.06	Schwarz criterion		10.64227
Log likelihood	-209.1565	Hannan-Quinn criter.		10.58836
F-statistic	0.498245	Durbin-Watson stat		1.706483
Prob(F-statistic)	0.484578			

Saving_Saudi

Null Hypothesis: SAVING_S has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.719285	0.4141
Test critical values:	1% level	-3.605593	

229

5% level	-2.936942
10% level	-2.606857

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(SAVING_S)

Method: Least Squares

Date: 09/02/20   Time: 16:41

Sample (adjusted): 1981 2020

Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SAVING_S(-1)	-0.120619	0.070157	-1.719285	0.0937
C	2.801958	2.156451	1.299338	0.2017

R-squared	0.072174	Mean dependent var	-0.405150
Adjusted R-squared	0.047757	S.D. dependent var	7.012480
S.E. of regression	6.842983	Akaike info criterion	6.733031
Sum squared resid	1779.404	Schwarz criterion	6.817475
Log likelihood	-132.6606	Hannan-Quinn criter.	6.763564
F-statistic	2.955940	Durbin-Watson stat	1.726547
Prob(F-statistic)	0.093700		

Total Investment_Saudi

Null Hypothesis: TOTALINVESTMENT_S has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*

Augmented Dickey-Fuller test statistic		-1.992229	0.2889

Test critical values:	1% level	-3.605593
	5% level	-2.936942
	10% level	-2.606857

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(TOTALINVESTMENT_S)

Method: Least Squares

Date: 09/02/20   Time: 16:42

Sample (adjusted): 1981 2020

Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TOTALINVESTMENT_S(-1)	-0.202245	0.101517	-1.992229	0.0536
C	4.861717	2.389011	2.035033	0.0489

R-squared	0.094569	Mean dependent var	0.187425
Adjusted R-squared	0.070742	S.D. dependent var	2.951888
S.E. of regression	2.845562	Akaike info criterion	4.978105
Sum squared resid	307.6944	Schwarz criterion	5.062549
Log likelihood	-97.56209	Hannan-Quinn criter.	5.008637
F-statistic	3.968978	Durbin-Watson stat	1.809548
Prob(F-statistic)	0.053566		

1. C: Augmented Dickey-Fuller unit root Test
   Augmented Dickey-Fuller unit root Test**investigation shows all variables (1st difference GDP_ Saudi, 1st difference Saving_ Saudi and 1st difference Total Investment_ Saudi) are stationary and have no unit root.**

GDP_Saudi

Null Hypothesis: DGDP_S has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.092788	0.0002
Test critical values:	1% level	-3.610453	
	5% level	-2.938987	
	10% level	-2.607932	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DGDP_S)

Method: Least Squares

Date: 09/02/20   Time: 16:35

Sample (adjusted): 1982 2020

Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DGDP_S(-1)	-0.824908	0.161976	-5.092788	0.0000
C	12.60022	7.874033	1.600224	0.1181

R-squared	0.412106	Mean dependent var	-0.402641
Adjusted R-squared	0.396217	S.D. dependent var	59.86407
S.E. of regression	46.51648	Akaike info criterion	10.56741
Sum squared resid	80059.96	Schwarz criterion	10.65272
Log likelihood	-204.0645	Hannan-Quinn criter.	10.59802
F-statistic	25.93648	Durbin-Watson stat	1.943784
Prob(F-statistic)	0.000011		

Null Hypothesis: D(DGDP_S) has a unit root

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.340716	0.0000
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DGDP_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:44

Sample (adjusted): 1987 2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DGDP_S(-1))	-4.511558	0.711522	-6.340716	0.0000
D(DGDP_S(-1),2)	2.751028	0.620886	4.430813	0.0001
D(DGDP_S(-2),2)	2.063511	0.510204	4.044483	0.0004
D(DGDP_S(-3),2)	1.353232	0.355679	3.804647	0.0007
D(DGDP_S(-4),2)	0.657561	0.187890	3.499717	0.0016
C	26.32971	21.93682	1.200252	0.2405
@TREND("1980")	-1.014643	0.864267	-1.173992	0.2506

R-squared	0.828260	Mean dependent var	0.369176
Adjusted R-squared	0.790095	S.D. dependent var	105.5593
S.E. of regression	48.36236	Akaike info criterion	10.77656

Sum squared resid	63150.78	Schwarz criterion	11.09081
Log likelihood	-176.2015	Hannan-Quinn criter.	10.88373
F-statistic	21.70239	Durbin-Watson stat	2.179253
Prob(F-statistic)	0.000000		

Null Hypothesis: D(DGDP_S) has a unit root

Exogenous: None

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.282751	0.0000
Test critical values:	1% level	-2.634731	
	5% level	-1.951000	
	10% level	-1.610907	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DGDP_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:45

Sample (adjusted): 1987 2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DGDP_S(-1))	-4.360446	0.694035	-6.282751	0.0000
D(DGDP_S(-1),2)	2.619696	0.605725	4.324891	0.0002
D(DGDP_S(-2),2)	1.947268	0.496386	3.922887	0.0005
D(DGDP_S(-3),2)	1.270447	0.345425	3.677925	0.0010
D(DGDP_S(-4),2)	0.617737	0.182754	3.380155	0.0021
R-squared	0.818917	Mean dependent var		0.369176

Adjusted R-squared	0.793940	S.D. dependent var		105.5593
S.E. of regression	47.91747	Akaike info criterion		10.71189
Sum squared resid	66586.42	Schwarz criterion		10.93635
Log likelihood	-177.1021	Hannan-Quinn criter.		10.78844
Durbin-Watson stat	2.096251			

Saving_Saudi

Null Hypothesis: D(DSAVING_S) has a unit root

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.682833	0.0000
Test critical values:	1% level	-3.621023	
	5% level	-2.943427	
	10% level	-2.610263	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DSAVING_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:46

Sample (adjusted): 1984 2020

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DSAVING_S(-1))	-2.057973	0.267866	-7.682833	0.0000
D(DSAVING_S(-1),2)	0.369687	0.153932	2.401626	0.0219
C	0.777793	1.290671	0.602626	0.5508

R-squared	0.787451	Mean dependent var		0.128162

Adjusted R-squared	0.774948	S.D. dependent var	16.52357
S.E. of regression	7.838721	Akaike info criterion	7.033633
Sum squared resid	2089.149	Schwarz criterion	7.164248
Log likelihood	-127.1222	Hannan-Quinn criter.	7.079681
F-statistic	62.98159	Durbin-Watson stat	1.991043
Prob(F-statistic)	0.000000		

Null Hypothesis: D(DSAVING_S) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.796476	0.0000
Test critical values:	1% level	-4.226815	
	5% level	-3.536601	
	10% level	-3.200320	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DSAVING_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:47

Sample (adjusted): 1984 2020

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DSAVING_S(-1))	-2.089547	0.268012	-7.796476	0.0000
D(DSAVING_S(-1),2)	0.379769	0.153456	2.474777	0.0186
C	3.848631	2.962610	1.299068	0.2029
@TREND("1980")	-0.139164	0.120982	-1.150287	0.2583

R-squared	0.795645	Mean dependent var	0.128162
Adjusted R-squared	0.777067	S.D. dependent var	16.52357
S.E. of regression	7.801732	Akaike info criterion	7.048374
Sum squared resid	2008.612	Schwarz criterion	7.222528
Log likelihood	-126.3949	Hannan-Quinn criter.	7.109772
F-statistic	42.82786	Durbin-Watson stat	2.029929
Prob(F-statistic)	0.000000		

Null Hypothesis: D(DSAVING_S) has a unit root

Exogenous: None

Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-7.732023	0.0000
Test critical values:	1% level	-2.628961	
	5% level	-1.950117	
	10% level	-1.611339	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DSAVING_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:47

Sample (adjusted): 1984 2020

Included observations: 37 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DSAVING_S(-1))	-2.049158	0.265022	-7.732023	0.0000
D(DSAVING_S(-1),2)	0.365825	0.152393	2.400540	0.0218

R-squared	0.785181	Mean dependent var		0.128162
Adjusted R-squared	0.779043	S.D. dependent var		16.52357
S.E. of regression	7.767079	Akaike info criterion		6.990204
Sum squared resid	2111.463	Schwarz criterion		7.077280
Log likelihood	-127.3188	Hannan-Quinn criter.		7.020902
Durbin-Watson stat	1.977692			

Total Investment_Saudi

Null Hypothesis: D(DTOTALINVESTMENT_S) has a unit root

Exogenous: Constant

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.735150	0.0005
Test critical values:	1% level	-3.639407	
	5% level	-2.951125	
	10% level	-2.614300	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DTOTALINVESTMENT_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:48

Sample (adjusted): 1987 2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DTOTALINVESTMENT_S(-1))	-3.783832	0.799094	-4.735150	0.0001

D(DTOTALINVESTMENT_S(-1),2)	2.035779	0.670951	3.034171	0.0052
D(DTOTALINVESTMENT_S(-2),2)	1.395365	0.518606	2.690607	0.0119
D(DTOTALINVESTMENT_S(-3),2)	0.731713	0.356631	2.051737	0.0497
D(DTOTALINVESTMENT_S(-4),2)	0.164207	0.186850	0.878818	0.3870
C	0.009322	0.545600	0.017086	0.9865

R-squared	0.790989	Mean dependent var	-0.037294
Adjusted R-squared	0.753666	S.D. dependent var	6.363528
S.E. of regression	3.158352	Akaike info criterion	5.296763
Sum squared resid	279.3052	Schwarz criterion	5.566121
Log likelihood	-84.04497	Hannan-Quinn criter.	5.388621
F-statistic	21.19285	Durbin-Watson stat	2.082082
Prob(F-statistic)	0.000000		

Null Hypothesis: D(DTOTALINVESTMENT_S) has a unit root

Exogenous: Constant, Linear Trend

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.690635	0.0034
Test critical values:	1% level	-4.252879	
	5% level	-3.548490	
	10% level	-3.207094	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DTOTALINVESTMENT_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:48

Sample (adjusted): 1987 2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DTOTALINVESTMENT_S(-1))	-3.816647	0.813674	-4.690635	0.0001
D(DTOTALINVESTMENT_S(-1),2)	2.059350	0.682493	3.017394	0.0055
D(DTOTALINVESTMENT_S(-2),2)	1.412517	0.527360	2.678469	0.0124
D(DTOTALINVESTMENT_S(-3),2)	0.741300	0.362345	2.045840	0.0506
D(DTOTALINVESTMENT_S(-4),2)	0.165471	0.189552	0.872960	0.3904
C	0.620517	1.434749	0.432492	0.6688
@TREND("1980")	-0.026081	0.056486	-0.461727	0.6480

R-squared	0.792626	Mean dependent var		-0.037294
Adjusted R-squared	0.746543	S.D. dependent var		6.363528
S.E. of regression	3.203685	Akaike info criterion		5.347721
Sum squared resid	277.1171	Schwarz criterion		5.661972
Log likelihood	-83.91126	Hannan-Quinn criter.		5.454890
F-statistic	17.19997	Durbin-Watson stat		2.082299
Prob(F-statistic)	0.000000			

Null Hypothesis: D(DTOTALINVESTMENT_S) has a unit root

Exogenous: None

Lag Length: 4 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.829760	0.0000
Test critical values:	1% level	-2.634731	
	5% level	-1.951000	
	10% level	-1.610907	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation

Dependent Variable: D(DTOTALINVESTMENT_S,2)

Method: Least Squares

Date: 09/02/20   Time: 16:49

Sample (adjusted): 1987 2020

Included observations: 34 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DTOTALINVESTMENT_S(-1))	-3.784697	0.783620	-4.829760	0.0000
D(DTOTALINVESTMENT_S(-1),2)	2.036591	0.657629	3.096869	0.0043
D(DTOTALINVESTMENT_S(-2),2)	1.395867	0.508771	2.743607	0.0103
D(DTOTALINVESTMENT_S(-3),2)	0.731941	0.350184	2.090161	0.0455
D(DTOTALINVESTMENT_S(-4),2)	0.164227	0.183598	0.894493	0.3784

R-squared	0.790987	Mean dependent var		-0.037294
Adjusted R-squared	0.762157	S.D. dependent var		6.363528
S.E. of regression	3.103436	Akaike info criterion		5.237950
Sum squared resid	279.3081	Schwarz criterion		5.462414
Log likelihood	-84.04514	Hannan-Quinn criter.		5.314499
Durbin-Watson stat	2.081978			

Regression

1a. Method: Least Squares at level

Dependent Variable: GDP_S

Method: Least Squares

Date: 09/02/20   Time: 16:54

Sample: 1980 2020

Included observations: 41

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SAVING_S	6.288132	1.674187	3.755930	0.0006
TOTALINVESTMENT_S	32.66744	5.729579	5.701542	0.0000
C	-597.1191	123.8361	-4.821852	0.0000

R-squared	0.671660	Mean dependent var		329.8293
Adjusted R-squared	0.654379	S.D. dependent var		252.9128
S.E. of regression	148.6864	Akaike info criterion		12.91191
Sum squared resid	840090.2	Schwarz criterion		13.03729
Log likelihood	-261.6942	Hannan-Quinn criter.		12.95757
F-statistic	38.86680	Durbin-Watson stat		0.565052
Prob(F-statistic)	0.000000			

The Regression Equations:

GDP_S = -597.11 + 6.28 SAVING_S+ 32.66TOTALINVESTMENT_S + Є

Significant   Significant

1b. Method: Least Squares at 1st difference of variables

Dependent Variable: DGDP_S

Method: Least Squares

Date: 09/02/20   Time: 16:57

Sample (adjusted): 1981 2020

Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DSAVING_S	3.556113	0.849121	4.187994	0.0002
DTOTALINVESTMENT_S	-3.848352	2.017164	-1.907803	0.0642
C	17.63196	5.656791	3.116955	0.0035

R-squared	0.430062	Mean dependent var		15.46993
Adjusted R-squared	0.399254	S.D. dependent var		46.02317

S.E. of regression	35.67154	Akaike info criterion	10.05862
Sum squared resid	47080.96	Schwarz criterion	10.18529
Log likelihood	-198.1724	Hannan-Quinn criter.	10.10442
F-statistic	13.95967	Durbin-Watson stat	1.320005
Prob(F-statistic)	0.000030		

DGDP_S = 17.63 + 3.55 DSAVING_S--3.84 DTOTALINVESTMENT_S + ∈

Significant   Significant at 10%

2. Breusch-Godfrey Serial Correlation LM Test: H1 = has Serial Correlation, while Obs*R-squared P-Value < 5%

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.111359	Prob. F(2,35)	0.0571
Obs*R-squared	6.038144	Prob. Chi-Square(2)	0.0488

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 09/02/20   Time: 17:02

Sample: 1981 2020

Included observations: 40

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DSAVING_S	0.384073	0.822448	0.466987	0.6434
DTOTALINVESTMENT_S	-1.666180	2.031005	-0.820372	0.4176
C	0.409475	5.361814	0.076369	0.9396
RESID(-1)	0.349071	0.171648	2.033645	0.0496

RESID(-2)	0.156439	0.172239	0.908268	0.3699

R-squared	0.150954	Mean dependent var	-1.55E-15
Adjusted R-squared	0.053920	S.D. dependent var	34.74484
S.E. of regression	33.79515	Akaike info criterion	9.994980
Sum squared resid	39973.92	Schwarz criterion	10.20609
Log likelihood	-194.8996	Hannan-Quinn criter.	10.07131
F-statistic	1.555679	Durbin-Watson stat	2.085555
Prob(F-statistic)	0.207779		

2.1 REMOVING of Serial Correlation with one period LAG of GDP

Breusch-Godfrey Serial Correlation LM Test: H0 = No Serial Correlation, while Obs*R-squared **P- Value > 5%**

Dependent Variable: DGDP_S

Method: Least Squares

Date: 09/03/20   Time: 12:26

Sample (adjusted): 1982 2020

Included observations: 39 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DSAVING_S	3.794390	0.808980	4.690337	0.0000
DTOTALINVESTMENT_S	-4.399018	1.923735	-2.286706	0.0284
LAGDGDP_S	0.302426	0.119353	2.533892	0.0159
C	12.75497	5.699093	2.238071	0.0317

R-squared	0.519787	Mean dependent var	15.36015
Adjusted R-squared	0.478626	S.D. dependent var	46.61950
S.E. of regression	33.66219	Akaike info criterion	9.967542
Sum squared resid	39660.00	Schwarz criterion	10.13816
Log likelihood	-190.3671	Hannan-Quinn criter.	10.02876
F-statistic	12.62811	Durbin-Watson stat	1.981126
Prob(F-statistic)	0.000009		

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.540238	Prob. F(2,33)	0.5877
Obs*R-squared	1.236442	Prob. Chi-Square(2)	0.5389

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 09/03/20   Time: 12:26

Sample: 1982 2020

Included observations: 39

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DSAVING_S	0.147229	0.831987	0.176960	0.8606
DTOTALINVESTMENT_S	-0.325631	1.994825	-0.163238	0.8713
LAGDGDP_S	-0.017030	0.166016	-0.102582	0.9189
C	0.273390	6.079769	0.044967	0.9644
RESID(-1)	0.031724	0.242428	0.130860	0.8967
RESID(-2)	0.187198	0.180254	1.038525	0.3066

R-squared	0.031704	Mean dependent var	1.43E-15
Adjusted R-squared	-0.115008	S.D. dependent var	32.30610
S.E. of regression	34.11328	Akaike info criterion	10.03789
Sum squared resid	38402.63	Schwarz criterion	10.29382
Log likelihood	-189.7388	Hannan-Quinn criter.	10.12972
F-statistic	0.216095	Durbin-Watson stat	2.012296
Prob(F-statistic)	0.953166		

3. Heteroskedasticity Test: Breusch-Pagan-Godfrey H0 =No Heteroskedasticity, while Obs*R-squared **P- Value > 5%**

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.380289	Prob. F(2,37)	0.6863
Obs*R-squared	0.805684	Prob. Chi-Square(2)	0.6684
Scaled explained SS	0.591029	Prob. Chi-Square(2)	0.7441

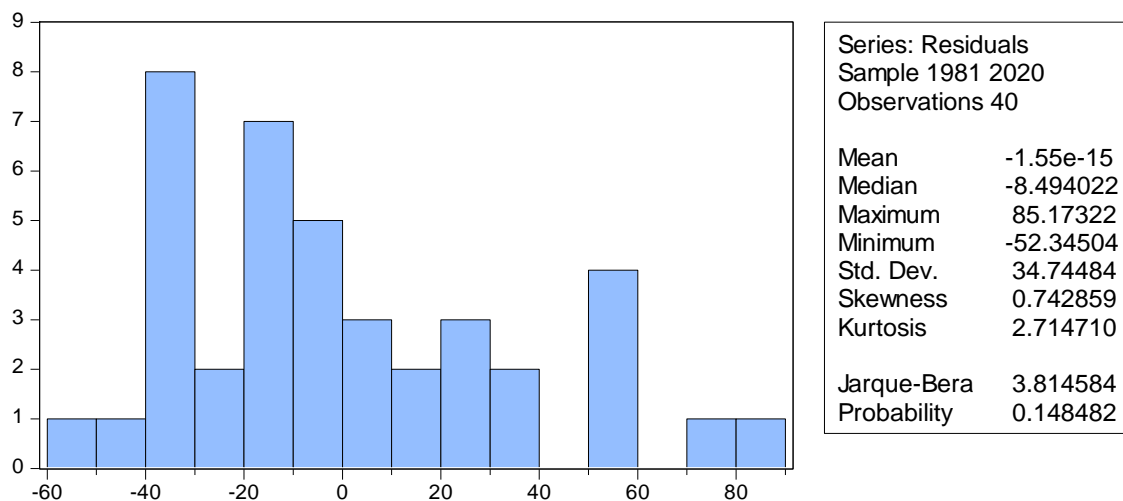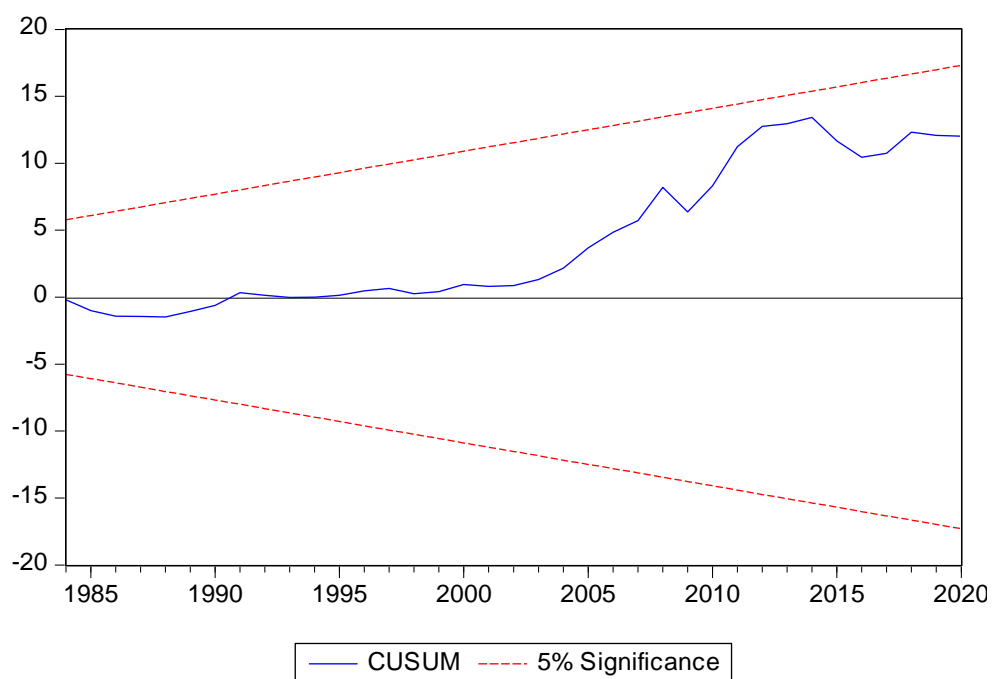Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 09/02/20   Time: 17:05

Sample: 1981 2020

Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1193.806	251.5589	4.745632	0.0000
DSAVING_S	19.53679	37.76061	0.517386	0.6080
DTOTALINVESTMENT_S	-47.30533	89.70378	-0.527350	0.6011

R-squared	0.020142	Mean dependent var	1177.024
Adjusted R-squared	-0.032823	S.D. dependent var	1560.912
S.E. of regression	1586.322	Akaike info criterion	17.64826
Sum squared resid	93107436	Schwarz criterion	17.77493
Log likelihood	-349.9652	Hannan-Quinn criter.	17.69406
F-statistic	0.380289	Durbin-Watson stat	1.389687
Prob(F-statistic)	0.686305		

4. Jarque-Bera Normality test. Result p > 0.0000. Residuals are normal distributed

Series: Residuals	
Sample 1981 2020	
Observations 40	
Mean	-1.55e-15
Median	-8.494022
Maximum	85.17322
Minimum	-52.34504
Std. Dev.	34.74484
Skewness	0.742859
Kurtosis	2.714710
Jarque-Bera	3.814584
Probability	0.148482

5. Residuals Stability test/ Result: Stabil

6. The Variables (DGDP_S, DSAVING_SandDTOTALINVESTMENT_S) are cointegrated (long run association according Johansen cointegration test-Pedroni Residual Cointegration Test). We can run restricted VAR (VECM –Model)

Date: 09/02/20   Time: 17:09

Sample (adjusted): 1983 2020

Included observations: 38 after adjustments

Trend assumption: Linear deterministic trend

Series: DGDP_S DSAVING_S DTOTALINVESTMENT_S

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.511810	53.40834	29.79707	0.0000
At most 1 *	0.369544	26.16042	15.49471	0.0009
At most 2 *	0.203175	8.630590	3.841466	0.0033

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.511810	27.24792	21.13162	0.0061
At most 1 *	0.369544	17.52983	14.26460	0.0147
At most 2 *	0.203175	8.630590	3.841466	0.0033

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegrating Coefficients (normalized by b'*S11*b=I):

DGDP_S	DSAVING_S	DTOTALINVEST MENT_S
0.015017	-0.002963	-0.385128
0.000695	0.192893	0.284977
0.032871	-0.151865	0.243504

Unrestricted Adjustment Coefficients (alpha):

D(DGDP_S)	-21.87214	-7.986009	-19.08723
D(DSAVING_S)	-3.643813	-3.603065	-0.694998
D(DTOTALINVE STMENT_S)	2.392757	-0.933337	0.180225

1 Cointegrating Equation(s): Log likelihood -410.0463

Normalized cointegrating coefficients (standard error in parentheses)

DGDP_S	DSAVING_S	DTOTALINVEST MENT_S
1.000000	-0.197314	-25.64584
	(2.31697)	(6.03702)

Adjustment coefficients (standard error in parentheses)

D(DGDP_S)	-0.328458
	(0.12865)
D(DSAVING_S)	-0.054720
	(0.01852)
D(DTOTALINVE STMENT_S)	0.035932
	(0.00738)

2 Cointegrating Equation(s): Log likelihood -401.2814

Normalized cointegrating coefficients (standard error in parentheses)

	DGDP_S	DSAVING_S	DTOTALINVEST MENT_S
	1.000000	0.000000	-25.33632
			(5.82897)
	0.000000	1.000000	1.568690
			(0.60714)

Adjustment coefficients (standard error in parentheses)

D(DGDP_S)	-0.334009	-1.475634
	(0.12708)	(1.63082)
D(DSAVING_S)	-0.057224	-0.684208
	(0.01596)	(0.20480)
D(DTOTALINVE STMENT_S)	0.035284	-0.187124
	(0.00698)	(0.08953)

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List of Abbreviations

AAOIFI - Organization for Accountability and Audit of Islamic Financial Institutions
DCEI - Deka Convergence European Indicator
DIC - Dubai Islamic Bank
EBA - European Banking Authority
ECB - European Central Bank
EIOPA - European Insurance and Occupational Pension Authority
EKI - European Currency Unit
EMFC - European Monetary Cooperation Fund
EMS - European Monetary System
EMU - European Monetary Union
EONIA - Euro Overnight Index Average
ESCB - European System of Central Banks
ESMA - European Securities and Exchange Commission
EU - European Union
EURIBOR - European Interbank Rate
Fed - Federal Reserves of the United States
FSA - Financial Services Act
GDP - Gross domestic product
HOV – Securities
IDB - Islamic Development Bank
IFCI - Islamic Finance Country Index
IFSB - Islamic Financial Services Board
ISD - Investment Services Directive
ISRA - International Academy for Sharia Research in Islamic Finance
MBS - Mortgage-backed Securities
MIFID - Markets in Financial Instruments Directive
IMF - International Monetary Fund
NBS - National Bank of Serbia - Central Bank of Serbia
NPL - Non-performing loan
REFI - Reference interest rate
ROA - Return on Asset
ROE - Return on Equity
ROI - Return on Investment
RICE - Return on Capital Employed
SAC - Shariah Advisory Council
SAMA - Saudi Arabian Monetary Agency

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