

An Islamic Approach to Contract Management and Financing in Infrastructure Projects

By

Majid Rahmanian Koshkaki

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Graduate School of Engineering
Kyoto University

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Executive Summary

Islamic economics is based on a paradigm which has socio-economic justice as its primary objective. The Islamic economic system is defined by a network of constitutive and regulative rules called shari'ah; the shari'ah is the guide for human action which encompasses every aspect of life - social, political, cultural, and economic. To describe the significance of research subject namely An Islamic Approach to Contract Management and Financing of Infrastructure Projects; it is necessary to describe the advent, development and impact of Islamic Finance and how it is related to the infrastructure development also how the infrastructure and construction plays a crucial role in development of Muslim countries.

Islamic Finance is a relatively new term which denotes engaging in financial and business transactions according to the principles of shari'ah. However, the Islamic financial system has a centuries-old history. In modern history, interest in conducting shari'ah compliant business rose with the first sign of expansion of conventional "interest based" commercial banking into the Muslim world. By 1953, Islamic jurists and economists had developed the first description of an interest-free bank. Nowadays Islamic assets represent about 1% of the global financial market and 10-15% annual growth and number of Muslims in the world; it is expected this ratio increase drastically in the future.

Based on this very brief introduction, the main objective of research is to provide a comprehensive reference of significant topics related to the shari'ah and shari'ah compliance in contract management and financing of projects generally and in infrastructure projects particularly and furthermore, to find a framework to measure shari'ah compliance objectively based on an Islamic approach.

In Chapter 2 and to find out the notion of Shari'ah Compliance; the main challenge to be discovered is: what are the relevant prescriptions in shari'ah? This leads us to the study of Islamic jurisprudence, i.e. the investigation of Islamic texts which are the sources of shari'ah. These texts include the Quran, the traditions, and the *fiqh* books of authoritative scholars filled with casuistry and reasoning by analogy or other type of reasoning. The main challenge in this concern is not "what is laid down in the shari'ah and Islamic legal system and its resources" but "How shari'ah is understood and applied?". The concept of shari'ah as used in religious, legal, political and economic discourse conveys different meanings. In this regard four types of shari'ah could be distinguished: the abstract shari'ah, the classical shari'ah, the historical shari'ah(s), and the contemporary shari'ah(s). The Divine, Abstract shari'ah is God's plan for mankind consisting of his prescriptions for human behavior. The Classical Shari'ah is the body of Islamic rules, principles and cases compiled by religious scholars in search of God's will during the first two centuries after the Messenger. The historical shari'ah(s) include(s) the entire body of all principles, rules,

cases and interpretations developed and transmitted throughout a history of more than one thousand years across the entire Muslim world. The contemporary shari'ah(s) contain the full spectrum of principles, rules, cases and interpretations that are developed and applied at present, throughout the Muslim world. The main concern is to clarify the contemporary shari'ah; however, it is inevitable to briefly introduce the other types. Later in the Chapter 2 the relation between shari'ah and national law of Muslim countries is considered. To find answer to the questions: how national legal systems of Muslim countries have dealt with the shari'ah? And what are the contents of national shari'ah-based law?; the constitutions, national and sub-national laws; such as civil law and commercial law, of 12 main Muslim countries have been investigated. As a result the legal system of Muslim countries is classified into three groups, the main group with a mixed system and two small groups with classical shari'ah system and secular system. Moreover; the Islamic Financial Institution regulatory and supervisory system of Muslim countries could be classified into four shari'ah governance models as; passive approach, minimalist approach, pro-active approach and passive-interventionist approach.

A shari'ah compliant construction contract is defined as a construction contract with its subject matter, agreement, terms and the conditions that embrace the Islamic belief, practice and value system. The main objective of a shari'ah compliant contract is not only to fulfill the demand of the industry but most importantly it is to fulfill obligations of Muslims towards Allah which requires us to identify the halal (lawful) and haram (prohibited) in our everyday dealings. It has been agreed by many scholars that *istisna* is considered as the appropriate shari'ah compliant contract agreement to be used for construction but it does not mean that any contract which is not mentioned in *nussus* is not shari'ah compliant.

In Chapter 3 the main topic is risk and risk management. It is impossible to understand the Islamic approach to risk without understanding the notion of *gharar*. *Gharar* is one of the controversial topics in Islamic transactions. It is translated as uncertainty and risk but the precise meaning of *Gharar* is itself uncertain. There are several hadiths related to the prohibition of *gharar* and those could be categorized in 3 groups; (1) Non or incomplete ownership (2) Nonexistence of the object (3) Extra stipulation. Every type of risk or uncertainty is not prohibited in Islam. Risk associated with normal economic transactions, i.e. value-adding and wealth-creating activities is inevitable for the society well-being and acceptable. Only when risk is a tool or mediator to make one party profits at the expense of the other or risk associated with "eating wealth for nothing", where no net additional wealth is created; it becomes *gharar* and so it is prohibited. As Suwailem believes this type of *gharar* could be modeled as a zero-sum game. This approach to measure *gharar* is criticized by some other scholars as a non-comprehensive. To make a more comprehensive measure of *gharar*, The typical example of *gharar* narrated by a lot of jurists is considered. As Ibn Taimiyya narrated; when a slave runs away, or a camel or a horse is lost, his owner

would sell it conditional on risk, so the buyer pays much less than its worth. If he gets it, the seller would complain: you have ‘gambled’ me and got the good with a low price. If not, the buyer would complain: you’ve gambled me and got the price I paid for nothing. This example is modeled through a game theoretic tool to be compared with another transaction known as ja’alah to investigate any correlation between notion of gharar and risk management in Islam with some economic variables such as Pareto efficiency, commutative justice, zero-sum payoff, and attitude toward risk. To get a more comprehensive result two other controversial topics are also modeled carefully. Firstly the Options and its shari’ah equivalent urbun are modeled and compared. Then the same method is applied for insurance and takaful which is considered to be shari’ah compliant. Through a comparative study among insurance and takaful the main points of difference are investigated. Finally regarding to the all cases some propositions are offered to be used as a measure for gharar and Islamic risk allocation and risk management in contracts. As follow;

Proposition 1 The preferable risk attitude from the Islamic point of view is the risk aversion of both engaged parties in a contract. Therefore, when both parties are risk averse, the contract contains no gharar and when one party is risk taker and the other risk averse; it could be a gharar case.

Proposition 2 When there is no balance between liability and return for any party, the risk allocation could not be shari’ah compliant. The contrary result is not always correct.

Proposition 3 The Pareto efficiency and symmetry of information are not the main concerns in a shari’ah compliant risk management.

Chapter 4, discuss about contract management in infrastructure projects which are indispensable for a developing country like Iran. Infrastructure construction projects are highly sensitive against hazards and risks. Risks shall be clearly identified, categorized, evaluated and allocated according to the construction contract.

Among different topics included in a contract, risk management and risk allocation is the main concern in standard forms of contract such as FIDIC and the variety of FIDIC books are well-known for a well balanced risk allocation according to the project type. The appropriate contract shall be selected according to the each party’s ability to bear the risks. It is very crucial that no party should accept any risk which cannot bear it.

To evaluate the situation of risk management in Iranian construction projects the starting point is expected to be the topic of risk and risk allocation in Iran’s standard forms of construction contracts with a special attention to the Islamic approach and notion of gharar based on the results of previous chapters. To make a better understanding of risk allocation in Iran’s standard contracts; the FIDIC is concerned to be a base point. In a word by word comparison between Iran EPC 84 and FIDIC Yellow Book, some main topics

are emphasized and then based on these topics the risk allocation has been compared between Iran EPC 84 and three main FIDIC forms of contract. Generally the risk allocation in Iran EPC 84 is more similar to FIDIC Yellow. However, in some sub-clauses it creates a high liability and risk for the Contractor which is not in a balance with his return and could be considered an excessive risk and gharar. The other main topic which is also very important based on the comparison made between standard contracts, is the breach and termination of contract. The main idea and general views about breach and efficient remedies for breach is argued and the Islamic view point has been discussed. Finally, a comparison between another Iran's standard forms of contract namely Iran 4311 and FIDIC Redbook from the breach and termination point of view has been made. The results denote that in Iran 4311 merely the Contractors' breach has been considered and some liquidated damages have been predicted or the Decision Making process is defined. On the other hand, there is no penalty for the Employer's breach according to the Iran 4311 and the Employer has the right to terminate the Contract in case of the Contractor's breach. While in FIDIC Redbook right and obligation are more balanced and both the Employer and the contractor are entitled to get some damages in case of the other party's breach. The imbalance between right and obligation is a gharar case and can make the Contract invalid according to the shari'ah. Also the optional termination of contract for the Employer which is available in both forms is discussed in more details. The results in accordance with the previous results shows an unfair risk allocation and imbalance between liability and return in Iran 4311 compared with FIDIC Redbook. As a result, the standard forms of construction contracts used in Iran are not shari'ah compliant from the risk and risk allocation point of view compared with FIDIC ones.

In Chapter 5, the Islamic Financial Market model is formulated which decides simultaneously quasi-interests in both deposit market and financing market to analyze the impact of recent development of the Islamic Finance to infrastructure projects focusing the two-sided character of the Islamic Finance. When depositors have additional utility to save their fund in the Islamic Bank rather than in conventional bank, it revealed that the quasi-interest of the Islamic Bank in both deposit and financing market will be lower than the interests of conventional bank, through comparative statics analysis of market equilibrium. It also indicated that the more competitive the market becomes, the difference of quasi-interest becomes larger. Moreover, the deeper the depositors' understanding of the Islamic Finance and the larger the demand of the deposit, the more the volume of the Islamic Finance and social welfare increases. If the standardization of the Islamic financial transaction is improved and the transaction fee using the Islamic finance reduces, the volume of the Islamic finance will increase and also the quasi-interests rise. Using the Islamic Finance will be an alternative to make all parties more competitive by reducing the transaction

cost, such as revealing the shari'ah compliant eligibility or hedging risk of the Islamic law for enterprises which are willing to enter to infrastructure projects in the future.

The last chapter is conclusion and some suggestions for future studies.

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Dedicated to my parents

Chapter 1

Introduction

1.1 Islamic Economics

Islamic economics is based on a paradigm which has socio-economic justice as its primary objective (Quran, 57:25). According to this paradigm, this society should be moral and viable as well (Mirakhor, 1989). The importance of justice in Islam takes its roots in the belief that human beings are the deputies of the One God, who is the Creator of the Universe and everything in it (Chapra, 1992). They are brothers unto each other and all resources at their disposal are a trust from Him to be used in a just manner for the well-being of all.

Unlike the secularist market paradigm, human well-being is not considered to be dependent primarily on maximizing wealth and consumption; it requires a balanced satisfaction of both the material and the spiritual needs of the human personality (Chapra, 2001). The spiritual need is not satisfied merely by offering prayers; it also requires the modeling of individual and social behavior compliant with *shari'ah* which is designed to ensure the realization of the *maqasid al-shari'ah* or objectives of the shari'ah, two of the most important of which are socio-economic justice and the well-being of all God's creatures.¹

The Islamic economic system is defined by a network of constitutive and regulative rules called shari'ah; the shari'ah is the guide for human action which encompasses every aspect of life - social, political, cultural, and economic. It provides a scale by which all actions on the part of the individual agents, society, and the state are classified, namely: obligatory; recommended; permissible; reprehensible; and forbidden. This classification also covers economic behavior.²

In Islamic paradigm, contrary to popular opinion, self-interest is not rejected. Islam, in fact, considers it as a primary factor in its incentive/motivation system; a necessity in any organized society if the individual is to find it utility maximizing to follow behavioral rules prescribed by the system (Khan, 1992). However there is a substantial difference in the utility system of Islam, within this paradigm, more may not necessarily be better than less under all circumstances, as conventional economics would have us believe.

¹ The subject is discussed frequently by Muslim jurists. It is discussed in more details in Chapter 2 also Chapra(2001) mentions some of the most prominent exponents: al-Matridi (d.333/944), al-Shashi (d.365/975), al-Baqillani(d.403/1012), al-Juwayni(d.478/1085), al-Ghazali (d.505/11 ii), al-Razi (d.606/1209), al-'Amidi(d.631/1234), `Izz al-Din `Abd al-Salam (d.660/262), Ibn Taymiyyah (d.728/1327),and al-Shatibi (d.790/1388). For a modern discussion of these: al-Raysuni, 1992, pp.25-55: Nyazee, 1994, pp.189-268: and Masud, 1977.

² Shari'ah has a much broader meaning which in chapter 2 is discussed in details.

Much would depend on how the additional wealth is acquired, who uses it and how, and what is the impact of this increase on the overall well-being of society. More may be better than less, if the increase can be attained without weakening the morality of society, raising anomie or enmity, and harming the ecological balance (Chapra, 2001).

1.2 Significance of the Research

To describe the significance of research subject namely Islamic Approach to Contract Management and Financing of Infrastructure Projects; it is necessary to describe the advent, development and impact of Islamic Finance and how it is related to the infrastructure development also how the infrastructure and construction plays a crucial role in development of Muslim countries.

Islamic Finance is a relatively new term which denotes engaging in financial and business transactions according to the principles of shari'ah (Iqbal, 2004; Mirakhor, 2007). The most critical and distinguishing feature of such a system is the prohibition of riba which removes pure "debt based" contracts from financial transactions. However the Islamic financial system has a centuries-old history. As noted by Chapra et al. (2000),

"From the very early stage in Islamic history, Muslims were able to establish a financial system without interest for mobilizing resources to finance productive activities and consumer needs. The system worked quite effectively during the heyday of Islamic civilization and for centuries thereafter."

However, as the centre of economic gravity shifted over the centuries to the Western world, Western financial institutions (including banks) became dominant and the Islamic tradition remained dormant. In modern history, interest in conducting shari'ah compliant business rose with the first sign of expansion of conventional "interest based" commercial banking into the Muslim world. About late nineteenth century, a formal critique and opposition to the element of interest started in Egypt when Barclays Bank was established in Cairo to raise fund for the construction of Suez Canal. During first half of the 20th century, there were several attempts to highlight the conflicts between emerging financial system and shari'ah rulings. As mentioned before, by freedom of Muslim countries from the years of colonialism during 1950s and 1960s a return to the Islamic values happened. By 1953, Islamic jurists and economists had developed the first description of an interest-free bank. In 1963 the Mit Ghamar Local Saving Bank established in Egypt by Dr. Ahmad-al-Najjar a social activist that preferred to label it a social welfare institution and not an Islamic Bank. There were similar efforts in Malaysia to develop a saving scheme for Muslims to perform pilgrimage. But the concept of Islamic banking was put into practice in the 1970s when the first commercial Islamic bank, Dubai Islamic Bank, was launched, followed by the establishment of the Jeddah-based the Islamic Development Bank, in 1975. Since then, the Islamic

financial industry has enjoyed consistently high growth (10-15 percent annually) and continues to grow rapidly. By the end of 2008 more than 300 institutions in more than 65 countries engaged in some form of Islamic finance(Askari et al, 2009) and total assets classified as Islamic is estimated to exceed US\$1200 billion by the end of 2011 making a rise of about 150% from \$509bn in five years since 2006. Islamic assets represent about 1% of the global financial market. Islamic finance has shown resilience during the past years at a time when global recovery has slowed and conventional banking in Western countries has remained under pressure (Gatehouse Bank, 2012).

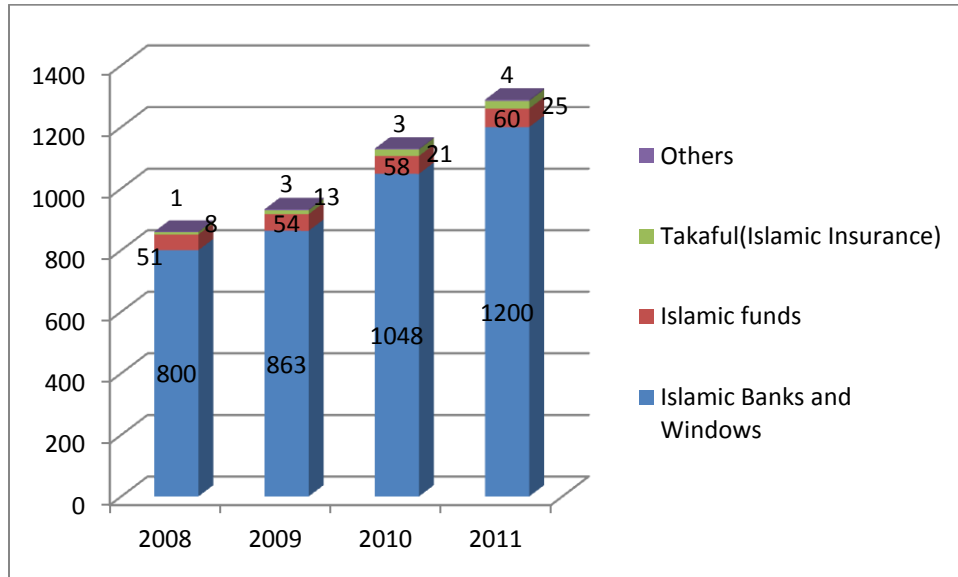


Figure 1.2 Islamic Financial Industry (2011 estimated)

Source: The Banker, Ernst & Young

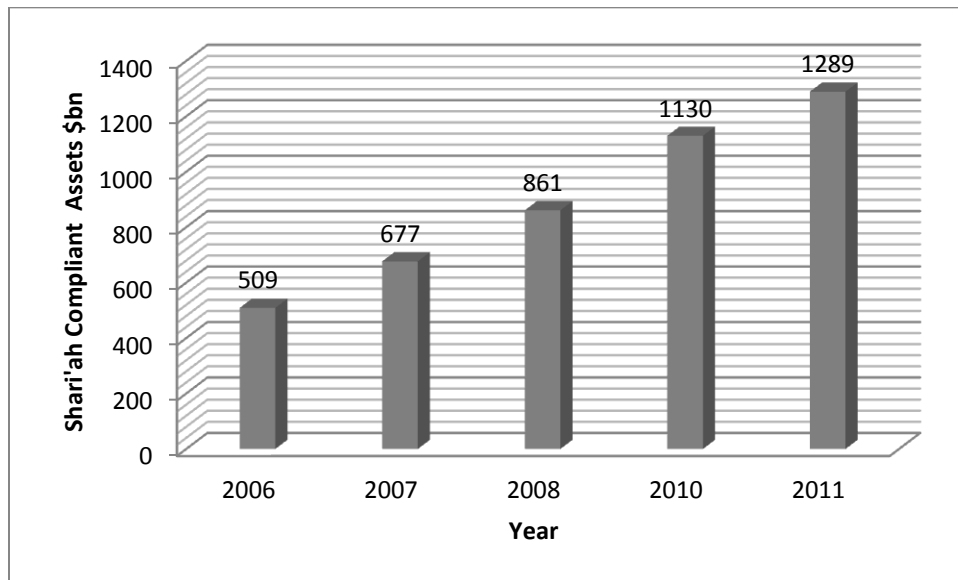


Figure 1.2 Shari'ah Compliant Assets growth since 2006 (2011 estimated)

Source: The Banker, Ernst & Young

Assets that can be allocated to individual countries from The Banker's survey of 500 organizations reveal that the leading countries for Shari'ah Compliant Assets are Iran with \$388bn, Saudi Arabia \$151bn and Malaysia \$133bn . These are followed by other Gulf States including UAE, Kuwait, Bahrain and Qatar, and then Turkey. The UK, in ninth place, is the leading Western country with \$19bn of reported assets, largely based on HSBC Amanah. Considerable potential exists for expansion of Islamic finance with The Banker estimating that only 12% of Muslims worldwide use Islamic financial products. Extent of the industry's penetration varies substantially. In Bangladesh, for example, Islamic banking accounts for 65% of total banking assets but only 4% to 5% in Turkey, Egypt and Indonesia.

On the other hand, Muslim population by 2011 exceeds 1.6 billion which means around and the 23% of the world population or in the other word almost 1 out of 4 in the world are Muslim (Table 1.1) and therefore 1% share of Islamic Finance in the global finance market is a very small share compared with the potential of Muslim population. Moreover, in 2011 population growth rate in Muslim countries has been 1.4% according to the IDB³ annual report compared with the world growth rate 1.2% which indicates that the ration of Muslim population will be increasing in the upcoming years.

Since almost all the Muslim countries are among developing economics; investment in infrastructure makes a vital role in their development. Moreover, regarding their young population; investment in housing sector is unavoidable in most of the Muslim countries. The MENA⁴ oil producer countries are recently undergoing massive investment in infrastructure and building works as a result of their huge income derived from crude oil production. Other Muslim countries such as Egypt, Pakistan and Bangladesh depend on international Financing agencies such as IDB to develop their infrastructure and residential projects. For example in recognition of the importance of infrastructure particularly energy, transportation, water, sanitation and urban services, and ICT for sustainable long-term economic growth, the IDB has channeled more than \$20 billion to finance this sector, since its inception in 1975. By November 2011, the Bank's infrastructure portfolio comprised 219 active projects for a total approved amount of \$13 billion (IDB, 2012). All of the projects financed by IDB should be shari'ah compliant. Moreover, recently a lot of projects implemented in Muslim countries and financed by international banks such as World Bank or JBIC are financed or cofinanced in compliance with shari'ah. Two projects which are financed by JBIC under shari'ah by 2007 are in Bahrain; Buyer's Credit for a Public Petroleum Company (2005) and in Saudi Arabia; Project Financing for an Oil Refining and Petrochemical Project (2006)(JBIC, 2007).

³ Islamic Development Bank

⁴ Middle East and North Africa

Table 1.1 Muslim population by country (2010 estimates)

	Millions	% Share of Country's Population
Indonesia	205	88
Pakistan	178	96
India	177	15
Bangladesh	149	90
Egypt	80	95
Nigeria	76	48
Iran	75	100
Turkey	75	99
Algeria	35	98
Morocco	32	100
Iraq	31	99
Sudan	31	71
Afghanistan	29	100
Ethiopia	29	34
Uzbekistan	27	97
Saudi Arabia	25	97
Yemen	24	99
China	23	2
Syria	21	93
Malaysia	17	61
Russia	16	12
Niger	16	98
Tanzania	13	30
Senegal	12	96
Mali	12	92
Tunisia	10	100
Other countries	200	---
World total	1619	23 ⁵

Source: Pew Research Center

1.3 Background of the Research

Two main concepts connecting contract management and shari'ah compliance are prohibition of *riba* or interest and prohibition of *gharar*. *Riba* has been widely concerned by traditional and contemporary jurists and since the emerging of Islamic Finance; by modern scholars as well. On the other hand *gharar* has never undergone so much attention and the *fiqh* scholars have not been able to define the exact scope of it (Vogel et al., 1998). However, some of the new risk management tools and institutions such as options, insurance and futures are considered prohibited mainly for including *gharar*. Most of the writings related to the subject of Islamic economics and Islamic finance which are related to the concept of *riba* and Islamic banking are mainly based on some practical problems in current Islamic banking and finance to be analysed by some economic or statistical tools. There are very few papers based on hermeneutics. Hermeneutics is a systematic, rigorous, and analytic economic interpretation of sources of Islam, the

⁵ % share of world population

Quran, the *sunnah* of the Messenger, the economic history of early Islam and the writings of scholars and *fuqaha*. For example, hermeneutics of Islam's position on contracts, insights into the gharar and risk allocation structure for observance of their stipulation and breach remedies would be enormously helpful for understanding; what is the important characteristic of risk and risk perception within the Islamic economic system (Mirakhor, 2007).

Among a huge amount of writings in Islamic economics, there are very few writers and scholars who touched comprehensively the different issues pertinent to contract and contract management using a hermeneutics method. Most of the scholars, who are prominent in shari'ah and can use main Islamic resources, are not so efficient in using economic tools and vice versa. Among these al-Suwailem is prominent who describes gharar and risk in several writings using both rich Islamic resources and economic knowledge and tools. Al-Gamal and Vogel also have some valuable writings at the same way.

1.4 Rationale of the Research

The methodology used in this research is hermeneutic interpretation based on the writings of scholars and then using economic tools and real cases to interpret and analyze any topic related to shari'ah in a project.

As a result the main question of this research is shaped as follow:

What are the main characteristics of an Islamic approach to infrastructure projects that may make a difference with conventional approach?;

and the second main question would be:

How these characteristics would affect a project?

These questions are novel and untouched by reviewed literatures specially when concerned inside a structured framework.

1.5 Objectives of the Research

The main objective of research is to provide a comprehensive reference of significant topics related to the shari'ah and shari'ah compliance in contract management and financing of projects generally and in infrastructure projects particularly and furthermore, to find a framework to measure shari'ah compliance objectively based on an Islamic approach.

1.6 Scope of the Research

The scopes of the research are given as follow:

- Chapter 1; Introduction, introduces framework , significance, rationale and scope of project.
- Chapter 2; International Comparative Study of Shari`ah Compliance, works as entrance to the notion of shari`ah and shari`ah compliance. The main scope is clarifying shari`ah from different points of view. How the definition and perception of shari`ah could be different in respect to the history, customs and so on? How is the situation of shari`ah in the legal system of main Muslim countries? These are main questions to be answered in this chapter with a special attention to the contract and commercial law.
- Chapter 3; Islamic Approach to Risk: A Game-Theoretic Model of Gharar, is the main chapter of this research. Since the exact definition of gharar is not clear in Islam, this chapter tries to disentangle it using a hermeneutics method based on some famous hadith by Messenger. Then a game theoretic approach is used to analyze cases. This method is then applied for different controversial modern transactions which involve risk and gharar. Then through a positivistic method based on the real facts the conclusion is made. The conclusion of chapter 3 is a basement of analysis in Chapter 4.
- Chapter 4; Risk Management in Construction Contract, a Comparative Study of FIDIC and Iran, applies the results of Chapter 3 to analyze some real cases involved in Iran standard forms of construction contracts. FIDIC standard form is used as a base point for comparison.
- Chapter 5; Shari`ah Compliant Financing and its Impact on Infrastructure Investment. In this chapter the main concern of shari`ah compliance is the prohibition of riba instead of gharar. Chapter 5 regards the challenge of shari`ah compliant fund procurement in an infrastructure project and the risks arisen from it. This chapter models the problem faced by Islamic banks as price decision problem in two-sided market of both loan market and saving market, and makes it clear the mechanism to decide rates of profit/loss sharing.

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Chapter 2

International Comparative Study of Shari`ah Compliance

2.1 General Introduction

To find out the notion of Shari`ah Compliance a solid knowledge base of shari`ah is needed. First of all shari`ah should be defined and then determined what type(s) of shari`ah is (are) presumed, and then try to explain the shari`ah compliance in general. To do that in an analytical research method, some questions to be asked and if possible answered.

A first question to be asked is: what are the relevant prescriptions in shari`ah? This leads us to the study of Islamic jurisprudence, i.e. the investigation of Islamic texts which are the sources of shari`ah. These texts include the Quran, the traditions, and the *fiqh* books of authoritative scholars filled with casuistry and reasoning by analogy or other type of reasoning. The research methodology has been developed by the experts (*fuqaha*) of jurisprudence.

A second question is: how have national legal systems of Muslim countries dealt with the shari`ah. Sub-questions are: which position and role has been attributed to shari`ah within national law? What are the contents of national shari`ah-based law related to the contracts i.e. constitution law, civil code, commercial law, construction law ...?

A third question relating to the compliance issue is how do political forces influence the processes of shaping, interpreting, fixing, mixing, invoking, adopting and enforcing the rules of shari`ah as well as of national law? To answer to this question the notion of Rule of Law should be considered as well as an empirical investigation of such forces to find out whether (and when, where, to what extent and how) shari`ah-based law has been made compatible with the rule of law. It also helps to understand fundamental dilemmas of governance in the Muslim world.

A fourth question is about how practices and ideas of groups and individuals engaged in the infrastructure projects are shaped by rules of shari`ah, national or international formats of contracts and vice versa. Empirical research will shed light on people's practices, motives, needs and attitudes toward different normative systems. This requires qualitative methods of research coupled, if possible, with quantitative surveys.

A fifth question concerns the historical dimension: how the relation between shari'ah and the contract law evolved over time? Have legal systems of Muslim countries indeed been incorporated by shari'ah during the 19 and specially the 20th century?

In this chapter the main focus is to find answers to the first and fifth questions from the different points of view. Moreover, the second question will be investigated through a precious research done by Otto et al (2006, 2008, and 2010) in some Muslim countries with a more emphasize on commercial and contract affairs instead of the socio-legal ones; which is the main concern of Otto et al. The third question is out of the scope of this research but in some cases especially for Iran some political forces are mentioned related to the business affairs if relevant.

To find an answer to the fourth question it is necessary to make a survey about current practice in construction procurement which could be a new research topic to be conducted in any Muslim country. The findings of this chapter will be considered as a guideline through the dissertation. In the next chapters we will refer to these understanding to clarify the notion of risk and risk perception in Muslim society.

2.2 Shari'ah: Definitions and Types

2.2.1 Introduction

Islamic legal system uses a religious system or document being used as a legal source (namely Quran and tradition) we try to make a very brief introduction about shari'ah and shari'ah compliance. So we need to introduce briefly the terminology of Islamic legal system and its resources. Quran and the tradition are not, as it is often said, the basis of Islamic legal speculation, but only its sources. So the main goal is to understand the objectives of shari'ah and methods of utilizing these sources. The first question, then, is not "What is laid down in the shari'ah and Islamic legal system and its resources?", but "Why Muslims regard shari'ah as source of law?" and the second is "How shari'ah is understood and applied?" To answer these questions first should be cleared that whether there is one definition or understanding about shari'ah or a variety of shari'ahs and then find out that practically how this may make difference and if it could be a source of risk in contracts or not and in a what level.

2.2.2 Shari'ah

Islam is a monotheistic religion, as in Islam, there is no God other than Allah. The religion was revealed through the Prophet Muhammad, a messenger chosen by Allah. Most scholars agree that the Arabic word

'Islam' (الإسلام) comes from the root word 's-l-m' (س-ل-م) (Sadruddin, 1998; Haron Din et al., 2003; Kamar Oniah, 2007) which, according to Haron Din et.al. (2003), carries three basic meanings i.e. pure, peace and to submit. However, in the religious context, the word 'Islam' is not a word simply used by scholars to name a religion. It is, indeed, a name chosen by Allah. This fact is clearly stated in the last verse revealed in the Quran (Al-Maidah: 3):

The term *shari'ah*, often translated as 'Islamic law', is among the most debated and contested of Islamic ideas both among Muslims and more recently as part of a political discourse in the West. This chapter is not going to act as a mediator to resolve those disputes the main goal is to know any different definition and finally get to an answer to this question that why we should pay attention to shari'ah? Why it is necessary for all Muslims to follow shari'ah law? At the same time, indirectly it could be an answer that if shari'ah is collapsed into a trans-historical, reified notion that stands for all eternity in opposition to gender equality, democracy, and all that (allegedly) stands at the centre of Western consciousness.

2.2.3 Different Meanings of Shari'ah

2.2.3.1 Definition of Shari'ah

Shari'ah is an Arabic word meaning a road, the straight path to be followed. The term of shari'ah in verbal Arabic noun "Shari'ah" appears in the Quran only once at 45:18.

"Then We put thee on the (right) Way (shari'ah) of commandment so follow thou that (Way), and follow not the desires of those who know not." Qur'an 45:18

Moreover, its derivative forms appear 3 more times at 42:13, 42:21, and 5:51 verses.

As a technical term there are varieties of definitions for shari'ah from varieties of backgrounds from Western scholars to traditional Muslim jurists. Some of them are as follow:

- "Injunctions revealed to the prophet's of Allah related to law or belief."⁶ (Al-Zahawi) ;
- "Following strictly the injunctions of Allah or the way of Islam"⁷(Al-Jurani);
- "A discussion on the duties of Muslims" (Gibb,1950);
- "A long, diverse, complicated intellectual tradition," rather than a "well-defined set of specific rules and regulations that can be easily applied to life situations," (Janin et al, 2007);

⁶ Al-Zahawi, *Kasshaf Istilahat al-Funun* , Translation in Laldin(2006)

⁷ Ali bin Muhammad bin Ali al-Jurani, *Al-Ta'rifat*, Translation in Laldin(2006)

- “A shared opinion of the (Islamic) community, based on a literature that is extensive, but not necessarily coherent or authorized by any single body,” (Vikor,1998);
- “The way that Allah has determined for each of its messengers, all the religions sent by Allah are the same but the shari’ah is different” (M.H. Tabatabai,1956);
- “...the total of Islamic teaching and system, which was revealed to Prophet Muhammad, recorded in the Quran as well as deducible from the Prophet’s divinely guided lifestyle called the Sunnah...” (Laldin, 2006).

2.2.3.2 Shari’ah Types

These are just a few from thousands of definitions and different points of view about shari’ah. The concept of shari’ah as used in religious, legal, political and economic discourse conveys different meanings. According to Otto(2008) four types of shari’ah could be distinguished: the abstract shari’ah, the classical shari’ah, the historical shari’ah(s), and the contemporary shari’ah(s).

The Divine, Abstract Shari’ah: This is God’s plan for mankind consisting of his prescriptions for human behavior. These rules should guide his religious community. In this sense, shari’ah is a rather abstract concept which leaves ample room for various concrete interpretations by human beings. As mentioned above from Allame Tabatabaii(a shi’ah scholar), religion is kind of fact which is kept just near the God. Religion always was, has been, and will remain the same. All messengers sent by God imparted a part of that main fact, many shari’ahs were revealed by other messengers. From Adam, Noah, Abraham, Moses, David, Solomon ,Jesus and finally Muhammad. So religion is general and shari’ah is particular. In Quran we have some evidence about the definition of religion:

“The only (true) religion in the sight of Allah is (mankind’s) total submission to none other than Him”
Quran 2:19

“If anyone desires a religion other than Islam; Never will it be accepted of him; and in the Hereafter he will be in the ranks of those who have lost their way” Quran 2:85

“Do atheists seek a religion other than Allah’s? While all creatures in the heavens and on earth have willingly bowed to his will. And to him shall they all be brought back.” Quran 2:83

The Classical Shari’ah: This is the body of Islamic rules, principles and cases compiled by religious scholars in search of God’s will during the first two centuries after the Messenger, before ‘the gate of free interpretation’ (ijtihad) was closed. In this sense, shari’ah can be found in the classical works of the

religious scholars of the dominant legal schools (madhab), and is therefore more concrete than in the first definition. The prevailing consensus (ijma) of scholars is a key source of shari'ah, according to fiqh doctrine.

The Historical Shari'ah(s): This includes the entire body of all principles, rules, cases and interpretations developed and transmitted throughout a history of more than one thousand years across the entire Muslim world, since the closing of the gate of free interpretation up to the present. In this context "shari'ahs" is referred in the plural. Historically, shari'ahs have been influenced by time, place and people. The formulations of shari'ahs have differed depending on the interpretations of God's will by different people(s), groups, institutions and states. They have encompassed an immense, full spectrum: from personal beliefs to state ideology, from everyday social norms to formal positive law, from liberal to puritan interpretations. Classical shari'ah, as taught and interpreted by the religious scholars, has often served as a point of reference in these views, but progressive *ulamas* and others have seen and seized some opportunities in the classical religious sources and commentaries for smaller and larger reforms of shari'ah and shari'ah-based law. The extensive sanctioning of law reform by religious scholars has facilitated widespread changes in the national legal system of many Muslim countries since the 19th century.

The Contemporary Shari'ah(s): This contains the full spectrum of principles, rules, cases and interpretations that are developed and applied at present, throughout the Muslim world, at international, national, sub-national and local levels by a wide variety of religious, political, legal and other actors. Migration, modernization and new technologies of information and communication have decreased the dominance of the legal schools of classical shari'ah. 'Inter-madhab surfing' has become a new eclectic mode of change (Messick, 2005; Yilmaz, 2005; Otto, 2008).

2.2.3.3 Shari'ah and Fiqh

Regarding the classical definition, shari'ah which contains all the different commandments of Allah to Muslims could be divided into three main categories as below:

- **Shari'ah**
 - Aqidah(Faith)
 - Akhlaq(Ethics)

- Fiqh(Islamic Jurisprudence)

The first category is Aqidah such as belief in Allah and the day of judgement. The second is Akhlaq such as the injunction to tell the truth, sincerity and to be honest etc. The last category is Fiqh which contains sanctions that is related to the activities of individuals and also social relations.

The word *fiqh* is an Arabic term meaning “deep understanding” or “full comprehension”. In Quran this word has been used with the mentioned meaning in several verses . The Quranic expression of “ لِيَتَفَقَّهُوا فِي الدِّينِ ” which means “that they may gain understanding in religion” shows that in the prophet’s time the word Fiqh carried a wide meaning covering all aspects of Islam, namely, theological, political, economic and legal. Holy prophet is reported to have blessed *Ibn Abbas* saying “O God, give him understanding in religion”⁸ Which clearly means a general understanding of Islam.

Technically fiqh has various definitions by the scholars of shari’ah.

Imam Abu Hanifah(the founder of Hanafi school) defined fiqh as “The knowledge of what is for man’s self and what is against man’s self”⁹ This is a general definition of fiqh including all the knowledge of Islam.

Al-Amidi provided a broader definition of fiqh: “fiqh is the science of understanding the legal obligations derived from its sources.”¹⁰

The historian Ibn Khaldun describes fiqh as:

"knowledge of the rules of God which concern the actions of persons who own themselves bound to obey the law respecting what is required (wajib), forbidden (haram), recommended (mandub), disapproved (makruh) or merely permitted (mubah)"(Levy,1957).

The Distinction between Shari’ah and Fiqh According to the definition of Shari’ah and Fiqh now could be summarized as below:

1. Shari’ah is the wider circle, it includes all human actions, but fiqh is confined to what are commonly understood as human acts as far as their legality and illegality are concerned.
2. Fiqh or Ahkam al-amaliah is a part of shari’ah and shari’ah had two other parts (Akhlaq and Aqidah)
3. Shari’ah is fixed and unchangeable. It comes from revelation and is referred to that knowledge which we could never have possessed but for Quran or Hadith, whereas fiqh is erected by human

⁸ Narrated by Muslim and Bukhari, cited by Laldin(2006)

⁹ Zaydan, Al-Madakhel, ibid

¹⁰ Al-Amidi, Al-Ahkam fi Usul al-Ahkam, vol.1, ibid.

endeavor and changes according to the new conditions. Reasoning and deduction are also acceptable according to the schools.

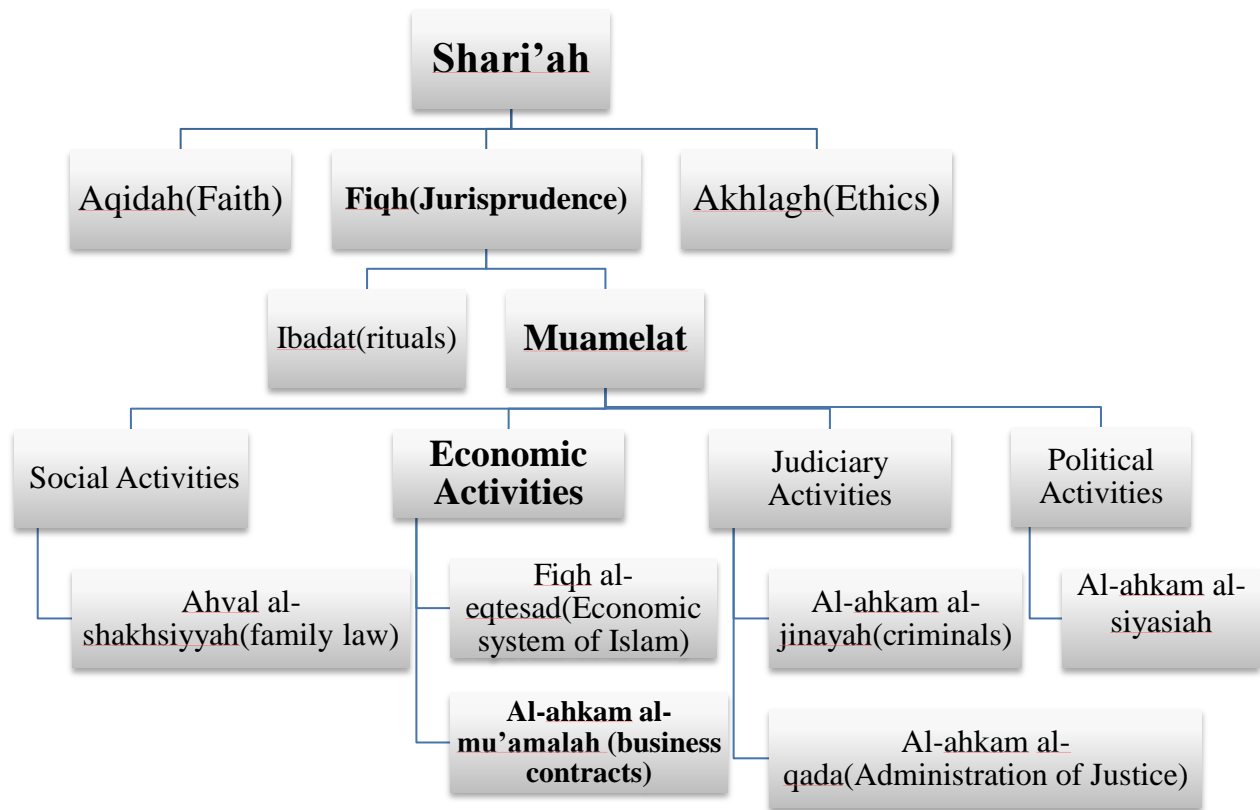


Figure 2.1 Components of Shari'ah

2.3 Objectives of shari'ah¹¹

Theoretically the main idea of the “Objectives of Shari’ah” or “Maqasid al-Shari’ah” comes from this generally accepted belief that there is no ruling in the entire shari’ah that does not seek to secure a genuine benefit; that all of the commandments of shari’ah aim at realizing benefits, and that all of its prohibitions are designed so as to prevent corruption. The obligatory(*wajib*), praiseworthy(*mandub*) and permissible(*mubah*) in this way aim at realizing benefits and the reprehensible(*makruh*) and the forbidden (*haram*) aim at preventing corruption and evil. These injunctions are not only aimed at gaining the pleasure of God but also to prevent corruption and facilitate benefit to both the individual and society. The shari’ah encourages the benefits of this world side by side with those of the hereafter. The individual is urged to be a useful member of society, so that hard work and lawful earning, supporting one’s family, and even following Al-ahkam Almuamelah(business contracts) are all equated with acts of devotion.

¹¹ 2.3 and 2.4 is a summary of Laldin(2006), P14-35 and Refaei (2006)

Conversely, even an act of devotion which is attempted as a means of escape from useful work and contribution to society loses much of its spiritual merit.

The benefits are generally divided into three types, namely the essentials (*al-Zaruriyat*), the complementary (*al-Hajiyyat*) and the so-called embellishments (*al-Tahsiniyyat*). The Shari'ah in all of its parts aims at the realization of one or the other of these benefits.

The essential benefits are defined as those on which the lives of the people depend, and their neglect leads to total disruption and chaos. They are the overriding values of life, faith, intellect, property and lineage. These must be protected and all measures that aim at safeguarding *nature, sources and objectives of shari'ah* them must be taken, whether by the individual, or by government authorities. The five main essentials (*Al-daruriyat al-khamsah*) are as follow:

Al-daruriyat al-khamsah

1. Protection of religion (*al-Din*)
2. Protection of life (*al-Nafs*)
3. Protection of dignity or lineage (*al-Irz*)
4. Protection of intellect (*al-Aql*)
5. Protection of property (*al-Mal*)

The protection of property-which is related to this research- means that no one should transgress and acquire the property of others without legitimate reasons and without proper contract.

“And eat up not one another’s property unjustly (in any illegal way such as stealing, deceiving ...), nor give bribery to the rulers (judge before presenting your cases) that you may knowingly eat up a part of the property of others sinfully” Quran 2:88

“And their taking of Riba (usury) though they were forbidden from taking it and their devouring of men’s substance wrongfully (bribery...) and we have prepared for the disbelievers among them a painful torment.” Quran 4:161

The complementary interests on the whole supplement the essential interests and refer to interests whose neglect leads to hardship but not to total disruption of normal life. To ban profiteering (*Ihtikar*), for example, or the sale of alcohol so as to prevent its consumption, and to grant concessions that the shari'ah has granted in regard to *Ibadat* for the traveller and the sick, all fall under the category of *al-Hajiyyat*.

The embellishments refer to interests whose realization leads to improvement and the attainment of that which is desirable such as cleanliness, avoiding extravagance, and measures that are designed to prevent proliferation of false claims in the courts, etc.

2.4 Some General Characteristics of Shari'ah

As Muslims believe shari'ah has some distinctive characteristics make it different from any other life and law system developed by mankind. These characteristics are as follow:

2.4.1 Shari'ah has a Divine Origin

Muslims believe that the source of shari'ah is divine revelation. According to religious beliefs only God (Allah) who created man knows the best system that suits all the needs of mankind.

“Should He not know,- He that created? And He is the One that understands the finest mysteries (and) is well-acquainted (with them).” Quran 67:14

Therefore each Muslim is obliged to uphold and implement the shari'ah:

“It is not for a believer, man or woman, when a matter has been decided by Allah and His Messenger to have any option about their decision: if any one disobeys Allah and His Messenger, he is indeed on a clearly wrong path” Quran 33:36

2.4.2 Shari'ah is Realistic, Universal and Contemporary

Muslims believe that shari'ah is realistic because it is practical, believable and sensible both in beliefs and in real life. Shari'ah is universal and contemporary it means that Shari'ah is suitable to be implemented at any time, any place and in all situations. There are some evidences from Quran and some characteristics that allegedly support this belief:

“ Say(o Mohammad to) o mankind! Verily, I am sent to you all as the messenger of Allah...”
Quran 7:158

“And we have not sent you expect as a giver of glad tidings and a warner to all mankind ...”
Quran 34:28

2.4.3 Shari'ah Has Both Fixed and Flexible Injunctions

- Fixed: Fixed injunctions are unchangeable injunctions of Quran and sunnah of the Prophet. This kind of rulings can be divided into three categories:
 1. Related to belief (*Aqidah*) as a fundamental in Islam like belief in Allah and his messenger.
 2. Related to *Ibadah* like order for prayers.
 3. Related to ethics (*Akhlaq*) like respecting parents.

- Flexible: Changes with the change of circumstances, custom, time and place. Like rulings related to *Muamalah* such as contractual law and transactions, criminal law, judiciary and others. **But any change should not violate fixed injunctions.** This flexibility helps Muslims to deal with upcoming issues in various time and conditions. We will refer to this characteristic again in the next chapters.

2.4.4 Shari’ah has some important and universal political, social and economical principles concerning public interest .

Among these principles are:

- a. Principle of *shura* (mutual consultation). According to this principal all political, social, and economic and etc, decisions should be made concerning public interest and in mutual consultation.

“Those who hearken to their Lord, and establish regular prayer; who (conduct) their affairs by mutual Consultation; ...” Quran 42:38

- b. Principle of *Al-musawat*(equality). No discrimination is allowed particularly in the implement of Islamic law. All are equal in the eye of law.
- c. Principle of *Al-adalah*(justice). Upholding justice in all circumstances and at all level. This has been called as the main goal of messengers to uphold justice in the society.

“...and when you judge between man and man, that you judge with justice... “ Quran 5: 8

- d. Principle of no harm. All harms should be avoided and removed whether it involves an individual or society. (“ no harm should be neither inflicted nor reciprocated” Prophet)

2.5 Islamic legal system

2.5.1 Introduction

The three major legal systems of the world today consist of civil law, common law and religious law. However, each country often develops variations on each system or incorporates many other features into the system. **Civil law** is the most widespread system of law in the world. The definition of civil law is:

“Law inspired by old Roman Law, the primary feature of which was that laws were written into a collection; codified, and not determined, as is common law, by judges. The principle of civil law is to provide all citizens with an accessible and written collection of the laws which apply to them and which judges must follow. “¹²

¹² Legal Glossary Armstrong Lawyers

Civil law is partly influenced by religious laws such as Canon law and Islamic law.

Common law is also called Judge-made law. It is defined as:

“Law which exists and applies to a group on the basis of historical legal precedents developed over hundreds of years. Because it is not written by elected politicians, but rather, by judges, it is also referred to as "unwritten" law. Judges seek these principles out when trying a case and apply the precedents to the facts to come up with a judgement.”¹³

Common law is often contrasted with civil law systems which require all laws to be written in a code or written collection. Common law has been referred to as the "common sense of the community, crystallized and formulated by our ancestors".¹⁴

Religious law refers to the notion of a religious system or document being used as a legal source, though the methodology used varies. For example, the use of Jewish Halakha for public law has a static and unalterable quality, precluding amendment through legislative acts of government or development through judicial precedent; Christian Canon law is more similar to civil law in its use of civil codes; and Islamic shari'ah law (*fiqh*) is based on legal precedent and reasoning by analogy (*Qiyas*), and is thus considered similar to common law. (El-Gamal, 2006). The Islamic legal system of shari'ah (Islamic law) and fiqh (Islamic jurisprudence) is the most widely used religious law, and one of the three most common legal systems in the world alongside common law and civil law (Badr, 1978).

2.5.2 Sources of Islamic Law

According to the different schools of Islam, there are different resources for the Islamic law. Even there is almost a consensus about Quran and tradition of prophet(*sunnah*) as sources of law, how to interpret or use them is vastly controversial among scholars. Moreover, some methods which are approved by some schools are completely rejected by others. So there are five main sources for Islamic law partially accepted by Muslims as follows:

2.5.2.1 The Quran

From the early days of Islam, Muslims have always used the Quran as the primal point of reference in order to deduce Islamic laws. But there were some group of Muslims that believed that right to refer to Quran only belongs to prophet and Imams, so other Muslims only can refer to *sunnah* as source. They are called *Akhbariyyin* which means traditional.

¹³ ibid

¹⁴ World Legal System: <http://www.juriglobe.ca>

2.5.2.2 The Sunnah

The sunnah means the words, actions and assertions of the Prophet Mohammad or all what is narrated from him (*hadith*) including his actions, sayings and whatever he has tacitly approved. This is sufficient proof (*dalil*) for a jurispudent to consider the action in question to be the actual law of Islam. About this definition of sunnah, and it being binding (*hujjat*) there is no question of argument and no scholar opposes it. The differences that exist on the subject of the sunnah concern two points. One is the question as to whether only the sunnah of the Prophet is binding or whether the sunnah related by *Imams* is also binding. Imams are the prophet's descendents who as shi'ah believe; should be his successors in all affairs including spiritual and political issues. The *sunnis* only consider the sunnah of the Prophet as binding, but the *shi'ahs* also refer to the words, actions and silent approvals of the Imams, in accordance to the traditions of the prophet.

The second point is that the related sunnah is sometimes clear and multi-related, i.e. there are different chains of narrators of the same issue, and sometimes suspicious, or a Single Report (*khabar al-wahid*). Here the different views vary to an extent that is an excessive exaggeration. Some, like Hanafi school (one of the four Sunni schools), from all the thousands of hadith and other sunnah narrated from the Holy Prophet consider only seventeen to be reliable. In respect to this, an important topic in fiqh is to study about the validity of hadith and narrators which is called *rejal* and hadith science.

2.5.2.3 The Ijma' (Consensus of Opinion)

Agreement of interpretations, rulings, and precepts of *Mujtahedin(jurists)* of the Muslim community of any period following the demise of the Prophet on any time in any subject (belief, moral or legal matters) based on the Quran, sunnah and reason.

In the shi'ah view, only the consensus of the ulama of the same period as the Prophet or Imams is binding. So, if a consensus occurs about something between all ulama with no exception, this is in no way binding for subsequent ulama. Moreover, in the shi'ah view, consensus is not genuinely binding in its own right, rather it is binding as much as it is a means of discovering the sunnah.

In the view of the ulama of sunni, however, consensus is a proof in its own right. That is, if the ulama of Islam are all in agreement upon a certain point of view about a subject in one period (even contemporary period), their view is definitely correct. They claim that it is possible for some of the nation to err, and some not to, but it is not possible for all of them to be in agreement and err.

2.5.2.4 The Qiyas (Analogical Deductions)

Extension of shari'ah value from the original case or *asl* to a new case because the latter has the same effective case. It is only accepted by sunnis. Amongst the *sunni* schools, *Abu Hanifa* considered analogy (*qiyas*) to be the fourth proof, and thus in the view of the *Hanafi school*, the sources of jurisprudence are four: the Quran, the sunnah, consensus and analogy.

The *Maliki* and *Hanbali* sunnis, especially the Hanbalis, pay no heed whatever to analogy. The *Shafi* Muslims, following their leader, *Muhammad ibn Idris Shafi*, pay more attention to sunnah than the Hanafis and also more attention to analogy than the Maliki and Hanbali Muslims.

The view of the shi'ah ulama, however, is that because analogy is pure conjecture, and because the total of what has been received from the Holy Prophet and the Imams is sufficient for our responsibility, the referral to analogy is strictly forbidden

2.5.2.5 The Aql(Reason)

According to shi'ah scholars if everyone accepts that something is reasonable and not against other Islamic rules, it could be followed as a new rule. The process is known as *ijtihad* and the person who practices it is a *mujtahid*. The 4 principles governing *ijtihad* are:

- 1) *Bara'a*: allowing the maximum possible freedom of action. A doubtful obligation may be disregarded if it cannot be confirmed by a scrupulous search of the primary texts.
- 2) *Ihtiyat*: Prudence. Where the object of an obligation is uncertain and it may be applied in two different cases, it should be implemented in both.
- 3) *Istishab*: The existing state (for example, the existence of a right) is regarded as continuing as long as there is any doubt that the legal situation has changed.
- 4) *Ta'adol* or *Tarajih*: where two traditions are of equal weight (given the validity of their transmission and the credibility of their contents) but contradict one another, there is a free choice as to which to apply (Motahari)

Many of the rules which in Sunni law are developed based on analogy have been developed with identical effort in shi'ah using reasoning (Momen).

Table 2.1 Summary of Islamic law schools attitude toward sources of law

Fiqh school	Hanafi	Maleki	Shafe'i	Hanbali	Shi'ah
Source					
Quran	Accepted	Accepted	Accepted	Accepted	Accepted
Sunnah	very strong Hadiths from prophet	Prophet's Hadith	Prophet's Hadith	Prophet's Hadiths	Hadiths from Prophets and all Imams
Ijma	Accepted	Accepted	Accepted	Accepted	Accepted
Qiyas	Accepted	Limited acceptance	Accepted	Highly Limited acceptance	Not Accepted
Aghl	Not Accepted	Not Accepted	Not Accepted	Not Accepted	Accepted

2.5.3 Principles of Jurisprudence(*Usul al-fiqh*) and Legal Maxims(*Al-qawa'id al-fiqhiyyah*)

The methodology that was subsequently developed through the efforts of Muslim jurists called *usul al-fiqh* which best suits the nature and requirements of fiqh as a legal system. It represents a joint venture between revelation and reason where the latter is always subservient to the former. The role of human reason is to extend the normative statements of the Quran and the sunnah to new legal issues or to provide answers to new legal problems through the process of *ijtihad*. *Usul al-fiqh* is concerned with the sources of the shari'ah, the rules of interpretation and the methods of reasoning. These methods of reasoning that we mentioned include analogy (*qiyas*), consensus of opinions (*ijma*) as primary sources and juristic preference (*istihsan*), undefined interest (*maslaha al-mursalah*), blocking the means (*sadd al-dharai*), presumption of continuity (*istishab*) and customs (*urf*) as secondary sources. The exercise of *ijtihad* through these various methods of reasoning produced immense wealth of legal rules.

Legal maxims are theoretical abstractions usually in the form of short statements that are expressive, often in a few words, of the goals and objectives of shari'ah. They consist mainly of a statement of principles derived from the detailed reading of the rules of fiqh on various themes (Kamali, 2008) or as Mustafa al-Zarqa defined al-qawa'id al-fiqhiyyah as "General fiqh principles which are presented in a simple format consisting of the general rules of shari'ah in a particular field related to it"¹⁵ Legal maxims represent the culmination, in many ways, of cumulative progress which could not have been expected to take place at the formative stages of the development of fiqh. The actual wording of the maxims is occasionally taken from the Quran or hadith but is more often the work of leading jurists that have subsequently been refined by other writers throughout the ages. Currency and usage often provided the jurists with insight and enabled them in turn to take the wording of certain maxims to greater refinement and perfection.

Legal maxims are different from *usul al-fiqh* in that the maxims are based on the fiqh itself and represent rules and principles that are extracted from the reading of the detailed rules of fiqh on various items. The *usul al-fiqh* is related to the sources of law, the rules of interpretation, methodology of legal reasoning, the meaning and implication of commands and prohibition and so on. A maxim is defined, on the other hand, as a general rule which applies to all or most of its related particulars.

Legal maxims, like legal theories, are designed primarily for better understanding of their subject matter rather than enforcement. A legal maxim differs, however, from a legal theory in that the former is limited in scope and does not look for establishing a theoretically self-contained framework over an entire discipline of learning. A theory of contract, or a constitutional theory, for example, is expected to offer a broad, consistent and comprehensive entry into its theme. We may have, on the other hand, numerous legal maxims in each of these areas.

Legal maxims are of two types. Firstly those which rehash or restate a particular text of the *Quran* or *sunnah*, in which case they carry greater authority. "Harm should not be inflicted nor reciprocated (*la dharar va la dhirar*)", for example, is a legal maxim which merely paraphrases the prophet's statement on the theme of no harm. The second varieties of legal maxims are those which are formulated by the jurists themselves. Despite the general tendency in legal maxims to be inter-scholastic, jurists and schools are not unanimous and there are some on which the schools of law have disagreed.¹⁶

2.5.4 The Contemporary Shari'ah

¹⁵ Al Zarqa, *Al-Madkhal*, cited by Laldin(2006).

¹⁶ For more details see: Laldin(2006), chapter 3, pages 129-155 and Kamali (2008), chapter 7 p.141-162.

The idea that contemporary people living in Muslim countries are exclusively subject to classical shari'ah is a common misconception (Otto, 2008). In practice, shari'ah as a functioning normative system has never existed in isolation, but has always been part of pluralistic legal systems in which it has found itself surrounded by other normative systems i.e. customary law, decrees that were issued by kings and rulers, and later by colonial laws. According to the shari'ah, a legitimate ruler– or government – has the power to make and apply laws, as long as they do not violate shari'ah. Consequently, national legal systems that are formally based on shari'ah also include state law, and are, in practice, often overwhelmed by national laws. In the 20th-century Muslim world, state legal systems emerged and expanded, and after 1945, these national legal systems have increasingly been influenced by international law. So, as citizens, Muslims are subject to national law, and indirectly to international law; as members of a clan they are subject to custom or customary law; as Muslims they are subject to certain religious norms, the interpretation of which is variable. (Otto, 2008) Thus, the vast majority of Muslim countries have a long-standing practice of legal diversity, normative dualism and pluralism. However, since religion is rarely openly rejected or publicly scrutinized in the Muslim world, the general importance of shari'ah – in the abstract sense, as God's plan for humanity – has been and remains fairly undisputed. As a result, the position of legal scholars, who have studied long to interpret God's will from the available sources, has been influential for a very long time.

Consequently, the dogma of classical shari'ah as constructed by them as a body of ideal norms has stood firm for an equally long period. In its practical implementation, however, this dogma has often been overshadowed by pragmatic considerations and modernization. Therefore, among puritan Islamists the dominant view is that, over time, shari'ah has been almost completely replaced by 'western law' and should be reinstated. In conclusion, the theological assumption that shari'ah is a fixed set of norms that apply exclusively to all Muslims must be dismissed on the basis of both legal and empirical evidence.

2.6 Rule of Law and Impact of Shari'ah in Current National Legal System of Muslim Countries

2.6.1 Definitions

2.6.1.1 Rule of Law

Rule of law is a very controversial and complex concept that might have had different meanings according to the legal system and the particular field of law. In a formal definition, rule of law mean that law should rule the conduct of people. The conception applies to the relation between governmental officials and citizens as well as to the relation among ordinary citizens; both vertical and horizontal interactions are to be ruled by laws (Muller and Janse, 2007). The objectives of rule of law are also the same wide. There are those who argue that the objective of the rule of law consists of enabling human flourishing in the most expansive sense of the word. The famous formulation of this conception of the rule of law is by the International Commission of Jurists which in its 1959 Conference in New Delhi explained that:

“...function of the legislature in a free society under the Rule of Law is to create and maintain the conditions which will uphold the dignity of man as an individual. This dignity requires not only the recognition of his civil and political rights but also the establishment of the social, economic, educational and cultural conditions which are essential to the full development of his personality”(Raz,1979).

Without the rule of law, neither efficiency nor social justice is attainable. So even if the legal system is based on shari’ah we need to have rule of law to attain justice as the main objective of shari’ah. The rule of law includes requisites for a civil society such as provisions for legal enforcement of contracts and for resolution of disputes, and bankruptcy codes that protect rights of debtors and creditors. The rule of law, in principle, should provide equality before the law. Social status or wealth should not determine how the rule of law is applied. The rule of law is not the same as the rule of government. Without the protection of the rule of law, arbitrary and whimsical men and women who control government can subvert the law so that the “law” becomes the instrument of appropriation and repression. We rely on government to implement the rule of law; however, the rule of law also protects us from government.(Hillman, Otto, Muller and Janse).

2.6.1.2 National Legal System

The term ‘national legal system’ refers to the whole body of legal rules, legal institutions, and legal processes. Most of the Muslim countries, as any other developing country, have the same set up of law and legal institutions. They have laws on any conceivable topic, many of which closely resemble the laws of developed countries. They also have much the same legal institutions, such as legislatures at central and regional levels, ministries, executive agencies, regional and local governments, supreme courts,

appeal courts and courts of first instance, ombudsman institutions, bar associations, law faculties, legal aid institutions, etc.

A closer look at the structure of legal systems of most Muslim countries, however, reveals layers and fragmentation. Under the surface of the more visible present-day national laws, we find layers of legal provisions and ideologies deriving from, the socialist, authoritarian era of the 1960s and 1970s, of colonial law, of shari'ah law, and of tribal customary law (Otto, 2010). Here we are interested in the layers of shari'ah incorporation in the legal system of Muslim countries.

2.6.2 Shari'ah and Rule of Law

To find the compliance between shari'ah and rule of law a solid knowledge base of shari'ah in Muslim countries is needed (Otto, 2006). First we should presume the essentialist or pluralist approach to the shari'ah, and then some questions are to be asked.

Some academics have already been working hard on this issue. For example, Ann Mayer, in an important effort to disentangle this problem in *Islam and Human Rights* (2007), demonstrated that there was compliance in most areas, but incompatibility in four specific areas. Halliday, in "Islam and the Myth of Confrontation: Religion and Politics in the Middle East" (2003), dissected the argumentation of Islamic groups who believed in compliance – by 'assimilation' or 'appropriation' – or incompliance – by 'rejection' or 'particularism'. The proposals of An-Na'im, a leading proponent of compliance, range from a radical reinterpretation of Meccan verses of the Quran, in "Toward An Islamic Reformation, Civil Liberties, Human Rights and International Law" (1990) to, in his more recent research project, "Islam and the Secular State : Negotiating The Future Of Shari'ah" (2008), a rejection of shari'ah based legislation for the sake of preserving shari'ah as a valuable, religious source of morale and justice.

Otto (2006, 2008, 2010) in his research tries to find answer to the question: how national legal systems of Muslim countries have dealt with the shari'ah? Sub-questions are: which position and role has been attributed to shari'ah within national law? What are the contents of national shari'ah-based law? How do we assess the present shari'ah-based laws in terms of rule of law standards? This calls for investigation of constitutions, national and sub-national laws.

Otto as director of a project namely 'Shari'ah and national law' undertook and coordinated cooperative research on the position and role of shari'ah in twelve Muslim countries and its compatibility with the rule of law. The selected countries are Egypt, Morocco, Sudan, Turkey, Saudi Arabia, Afghanistan, Iran, Pakistan, Malaysia, Indonesia, Mali and Nigeria. In the rest of this section, some of the data of that project related to the compliance of shari'ah and rule of law will be discussed.

In the course of this comparative study the national law of the twelve countries has been investigated focusing on certain areas mostly related to the human right and equality so to be more in accordance with this research a survey about civil code and commercial law has been integrated from other resources, wherever available.

2.6.3 Shari'ah and National Law of Muslim Countries: A historical overview

2.6.3.1 The Importance of a Historical Overview

To get a deeper understanding about the legal system of Muslim countries and find out the role of shari'ah; it is indispensable to have a historical overview of them. It should be clarified that: how the relation between shari'ah and the national law and consequently the civil and commercial law evolved over time? Have legal systems of Muslim countries indeed been incorporated by shari'ah during the 19th and specially the 20th century?

2.6.3.2 Formation and Development of Fiqh Schools

With the spread and expansion of Islam to new territories came issues that demanded answers. In order to avoid legal chaos, these answers had to be provided with reference to the Quran, sunnah, the practice of the companions and reason. In the words of Iqbal (2004): “systematic legal thought became an absolute necessity”. Differences however emerged. These differences were initially geographical where the people of traditions (*ahl al-hadith*) were based in Medina while the people of reason (*ahl al-ra'i*) were centred in Kufah. Later, however they found as their chief representatives Imam Malik in Medina and Imam Abu Hanifah in Kufah. It is possible to attribute the early disagreements between the people of traditions (*ahl al-hadith*) and the people of reason (*ahl al-ra'i*) and the subsequent emergence of various fiqh schools to their differences of methodologies. This could be seen in the different standards that they adopted for the acceptability of hadith and in particular solitary (*ahad*) hadith.

They also differed on the extent to which reason could be allowed to play a role in determining matters of shari'ah as far as legal (fiqh) issues were concerned. These subsequently influenced their choice of methods. While all schools (except shi'ah) agreed on analogy (*qiyas*), they differed over other methods. Imam Shafi'i who initially tried to bridge the gap between the two methodologies could not condone the Hanafis excessive use of reason and in particular their juristic preference (*istihsan*) as it permitted unlimited use of reasoning. His methodology is therefore closely identified with those of the people of

traditions (ahl al-hadith). However, the methodologies adopted by all the fiqh schools have a common ground. They have all made reason subservient to revelation. The difference however, was in the degree.¹⁷ After more than a millennium, When Napoleon arrived in Egypt in 1798, shari'ah had been the prevailing legal system for more than thousand years. The Ottoman Empire had carried on this tradition throughout the Middle East for centuries and Muslim states took just few different shapes: caliphate and despotic sultanate so we ignore this long period and start the survey from 1800.

2.6.3.2 A Historical Survey of Muslim Countries from 1800

1800 to 1920: European expansion, modernization, colonial pluralism, and the rise of nationalism

Around 1800, processes of rapid modernization were set in motion under the influence of European expansion, and “The whole complex edifice that supplied religious authority in Islam started to crumble”(Abou el-Fadl 2007). The introduction of European legal concepts took place in two ways. In the Ottoman Empire, Egypt and Persia it was a matter of deliberate efforts by local elites and voluntary reception, whereas in Asia and Africa the process occurred rather through colonial legislation and adjudication. Colonial expansion of European law occurred in the countries under review which are today known as Indonesia, Malaysia, Pakistan as well as Mali, Morocco, Nigeria, and the Sudan. Local rulers, chiefs, and religious office-bearers were incorporated in colonial structures led by European non-Muslims, and thus moved to a secondary position.

The advance of modern law also sealed the fate of classical shari'ah. The *tanzimat* reforms in the Ottoman Empire introduced large scale codification in all important areas of law. Secular courts were introduced to adjudicate cases on the basis of national law codes. Meanwhile modernist religious scholars like the multilingual Sayyid Jamal-ad-Din Asadabadi known also as al-Afghani and Muhammad Abduh in Iran and Egypt – which was still under formal Ottoman authority–proclaimed the reopening of the gate of free interpretation of shari'ah (ijtihad), and prepared for cautious codification and modernization of shari'ah-based marriage law.

Meanwhile, in the British, French and Dutch overseas territories, colonial governments enacted a massive amount of new legislation, which had nothing to do with shari'ah. New secular courts were established, whilst shari'ah courts and other local courts were regulated and restricted.

In areas, where European law overlapped with shari'ah or customary law, new forms of mixing took place. In Britain's colonies an enlightened 'Anglo-Muhammedan' law emerged through legislation and case law. In Indonesia and other colonies, the government elevated 'customary law' to serve as the law of the

¹⁷ For a more detailed history see: Laldin(2006), chapter 5 history of *fiqh*, p 155-223

indigenous population, whereas shari'ah was recognized only in so far as it was part of living customary law. So, in different ways shari'ah law and institutions were restricted or even pushed aside.

A remarkable exception to these patterns of European legal expansion was Saudi Arabia. No Western power had the ambition to conquer this vast desert land, so that the power of the ruling Saudi tribes could remain connected with radical-puritanical Wahhabi doctrine, as it had been since the eighteenth century. Under Wahhabi influence classical shari'ah prevailed unimpaired as law.

1920 to 1965: Decolonization, developmental ambitions of new states, and their limits

In this period colonial rule came to an end, with a first wave of independence of Muslim countries in the 1920s, and a second after 1945. Modernization, or 'development' as it came to be called after 1950, became a declared goal for almost all new governments. Reforms in the Muslim world were sometimes quite radical. In 1920 the Ottoman Empire collapsed and the Turkish Republic was founded. The founder of the Republic, Kemal Ataturk, tolerated the continued existence of Islamic law in the Republic for only a very short period of time. Especially during the period 1924-1929, a number of voluntary receptions of codes of law from Western countries gave Turkey its civilian, secular character. The Constitution of 1924 confirmed the principle of laicism as a key foundational principle of the Republic. After the 1930s, the influence of the shari'a on national law evaporated.

Inspired by the Turkish example, strong modernist rulers, such as Reza Shah in Iran and King Amanullah in Afghanistan, also distanced themselves from the religious establishment and classical shari'ah in order to create strong nation-states with modern legal systems. In Egypt, the first post-independence cabinets opted for more gradual modernization. The same goes for Morocco, which had become a French protectorate in 1912. In the Arab Peninsula King Abd al-Aziz was building the nation-state of Saudi Arabia, having just united, with his own conservative Wahhabist followers in the Najd.

From the 1950s onwards, almost all newly independent states embraced the ideology of development, pursuing the double goals of nation-building and socio-economic progress. Consequently, countries such as Egypt, Indonesia, Pakistan, Sudan, Malaysia, Mali, Morocco, and Nigeria, also set out to build for themselves a modern national legal system, as an instrument for social transformation. Especially after World War II, socialism, with its atheistic standpoint, exerted much influence in developing countries. "Arab Socialism", emphasizing equality—also between men and women—became a dominant ideology in the Middle East under the leadership of Egypt's President Nasser. Under the new nationalist but authoritarian regimes, the displacement, nationalization and reform of shari'ah, which had started in the nineteenth century, were accelerated. Nasser, for example, closed the religious family courts in 1955, placing jurisdiction for marital and inheritance cases under the umbrella of a unified, national judiciary.

The religious scholars who had once been the leading authorities of shari'ah, found themselves in a third-rank position; tribal and community leaders, who had been in charge of customary law for so long, were also marginalized.

However, by the mid-1960s it appeared that many states had achieved less security and socio-economic development than they had hoped for and promised. The fact that leading politicians, civil servants and army officers used their public positions for private gain began to create widespread resentment. Also, government's attempts to unify and modernize sensitive areas of law, such as family law and property law, bringing them in accordance with rule-of-law standards, caused considerable resistance (Allott, 1980). Ethnic conflicts, separatist movements, military coups and other conflicts threatened the stability of many young states. Although modern legislation existed on paper, its implementation and enforcement proved disappointing. As the people expressed dissatisfaction with their governments, traditional leaders saw opportunities to regain lost powers. Many people losing faith in the state resorted to the mosque and the imam, even if only for Friday prayers, for marriages, burials, and rituals. Prominent religious scholars, like the Iranian Ayatollah Khomeini, bided their time in seminaries. Perhaps it was a proper time for a successful counter-movement against the changes that had begun to overtake the Muslim world more than 150 years earlier.

1965 to 1985: the rise, flowering and effect of the Islamic revival in law

The remarkable Islamic 'Revolutions' of Iran and Pakistan (1979), and the Sudan (1983) were the result of both domestic as well as international processes. Development policies had been rather unsuccessful in those countries. The centralized, authoritarian, mostly socialist, ideology of the 1960s was showing cracks, and so were the reputations of ruling political elites. Governments and politicians felt a strong pressure from traditional elites, such as religious scholars and tribal chiefs, and had to respond, even if only for tactical reasons. During this period religious scholars and puritans made their voices better heard throughout the Muslim world, and in Iran under Khomeini the clergy even seized power.

The international impact was tremendous, especially in the Muslim world. Islamists everywhere were encouraged to gear up their opposition against governments. Their puritan ideology featured three elements: a broad and bitter critique of the government in power; an outspoken dislike of the West because of its political, military, and economic dominance and of what is seen as its moral decadence; and a competing governance model, i.e. the 'Islamic state', which should 'introduce the shari'ah' and replace 'Western law'. General Zia-ul-Haq, who seized power in Pakistan in 1979 and General Numeiri, who had long been in power in the Sudan, both sensed the legitimizing effects of this ideology, and decreed Islamization of law.

Because Islam in most Muslim countries is sunni, whereas Islam in Iran is Shi'ah, most puritan movements were more open to sunni missionary movements. These were often sponsored by Saudi Arabia, while the Egyptian Muslim Brotherhood served as a model for political programmes and organizational methods. The aversion of the Brotherhood and similar movements to the West dated back to the times of its founding in 1928 by Hassan al-Banna; only a while ago most Muslim countries had been under European colonial rule. After struggling for independence they were liberated from foreign rule, and yet many felt that Western domination had still not disappeared.

2.6.4 Contemporary Supremacy of Shari'ah

2.6.4.1 A General Classification

Based on the historical overview and current situation of Muslim countries the next question to be answered is; to which extent has shari'ah influenced the national legal systems as a whole? Otto has classified the legal system of Muslim countries into three groups (2008), the main group with a mixed system and two small groups with classical shari'ah system and secular system.

Mixed systems: Most Muslim countries have mixed systems in the sense that these systems postulate the hegemony of the national constitution and the Rule of Law, while at the same time allowing the rules of Islam to play a dominant role and influence certain areas of national law. These countries not only have constitutions but also large codifications of civil and criminal law, modeled after European or Indian codes. These systems acknowledge concepts like the separation of powers and democratic elections, even though they are at times overshadowed by authoritarian regimes. In these mixed systems, politicians and jurists play central roles in the law-making process rather than religious scholars. Pakistan, Afghanistan, Egypt, Morocco, Malaysia, Nigeria, Sudan and Indonesia can all be classified in this category. These national legal systems can be changed and modernized and most of them have actually undergone many major changes when compared to the rules of classical shari'ah.

Classical shari'ah systems: A small minority of Muslim countries have classical shari'ah systems. National law in those countries is formally equated with classical shari'ah and in substance the national law is to a great extent based on shari'ah. Such systems often lack a constitution and a large-scale codification of laws. Orthodox religious scholars (ulama) play a decisive role in the interpretation and application of shari'ah as national law. Therefore, change and modernization are difficult to achieve. The

state has a ruler who promulgates laws, directs the executive, and functions as the highest judiciary. The ruler can make some legal changes and affect some aspects of modernization, but his space is limited by shari'ah as it is interpreted by orthodox ulama. Saudi Arabia is a clear example of this category. Iran shares many of the same features, but in other respects – parliament, codifications – it belongs more to the mixed systems. We will back to Iran several times in this research as one of the most complicated cases.

Secular systems: In these systems, religious interference in state affairs, politics, and law is not permitted. State recognition and application of shari'ah within national law is considered to be irreconcilable with the democratic and secular constitutional state. Turkey is the prime example, although recently it has come under severe pressure. Several states in West Africa, (i.e., Mali), and in Central Asia (i.e., Kazakhstan), have also declared themselves to be secular.

The result of historical survey and legal tradition of 12 countries is summarized in Table 2.2

2.6.4.2 Basic Norm

To which extent have constitutions introduced shari'ah as the highest or basic norm of legal systems? In five of the twelve countries, the constitution holds provisions which establish an 'Islamic state' (see Table 2.3). In seven of the twelve countries, constitutional articles declare Islam to be the state religion (ibid). Six countries proclaim shari'ah as 'a source' or even 'the source' of the national legal system or declare that all legislation must be tested for its accordancy with shari'ah (ibid).

Table 2.2 Summary of Historical Survey and Legal Tradition of Some Muslim Countries

Country	Year of independence	Year of present constitution	Colony/ Protectorate	Legal tradition	
				Civil law/ Common law	Prevailing fiqh tradition(s)
Egypt	1922	1971	Ottoman/ Britain	Civil law	Hanafi
Morocco	1956	1996	France	Civil law	Maliki
Saudi Arabia	1932	-	-	-	Hanbali
Sudan	1956	2005	Britain	Civil/common	Hanafi
Turkey	1923	1982	-	Civil law	-
Afghanistan	1919	2004	Britain	Civil law	Hanafi/Shi'ah
Iran	-	1979	-	Civil law	Shi'ah
Pakistan	1947	1973	Britain	Common law	Hanafi
Indonesia	1945	1945	Netherland	Civil law	Shafe'i
Malaysia	1957	1957	Britain	Common law	Shafe'i
Mali	1960	1992	France	Civil law	Maliki
Nigeria	1960	1999	Britain	Common law	Maliki

Table 2.3 Islamic State and State Religion, Shari'ah as Main Source of Law in Constitutions

country	Islamic state ¹⁸	Islam as state religion ¹⁹	Shari'ah as a or the main source ²⁰
Egypt	No	Yes	Yes
Morocco	Yes	Yes	No
Saudi Arabia	Yes	Yes	Yes
Sudan	No	No	Yes
Turkey	No	No	No
Afghanistan	Yes	Yes	Yes
Iran	Yes	Yes	Yes
Pakistan	Yes	Yes	Yes
Indonesia	No	No	No
Malaysia	No	Yes	No
Mali	No	No	No
Nigeria	No	No	No

2.6.4.3 Other Area of Law

The substantive elements of the rule of law are fundamental principles of justice, and human rights, including civil and political rights, social and economic rights and group rights (Otto,2006).Therefore some topics such as equality of men and women, cruel shari'ah based punishments, family law and ...are the center of interest. Mostly discussions related to the rule of law ignore commercial and contract law despite the fact that these have the potential to be a source of injustice and corruption. Moreover, if

¹⁸ As a basis we took the standard text "nation A is an Islamic state." This clause can be found in the constitution of Morocco in the preamble; in Saudi Arabia article 1. Variants of this provision include: Afghanistan, article 1, "Afghanistan is an independent, unitary, and indivisible Islamic republican state"; Iran, article 1, "The form of government of Iran is that of an Islamic Republic"; Pakistan, article 1, "Pakistan shall be a Federal Republic to be known as the Islamic Republic of Pakistan." Concerning those nations that are not Islamic states, the formulations of interest are: Egypt, article 1, "The Arab Republic of Egypt is a democratic state based on citizenship. The Egyptian people are part of the Arab nation and work for the realization of its comprehensive unity.", Sudan, article 1, defines its own nation as "(...) a country of racial and cultural harmony and religious tolerance." Turkey "is a democratic, secular and social state governed by the rule of law" (article 2). Indonesia is founded on "the belief in One and Only God" (preamble and article 29, sub 1). (Source: <http://www.law.cornell.edu/world>, accessed on March 2011)

¹⁹ As a basis we took the standard text "Islam is the state religion of state A." These statements are to be found in the constitutions of: Egypt article 2; Morocco article 6; Saudi Arabia article 1; Pakistan article 2. Variants of the standard text are: Afghanistan (article 2): "Islam is the sacred religion of Afghanistan"; Iran (article 12): "The official religion of Iran is Islam and the Twelver Ja'fari school"; and Malaysia (article 3, sub 1) "Islam is the religion of the Federation". Of the nations that do not mention Islam as the state religion, Sudan is of particular interest: in article 1 it is stated: "Islam is the religion of the majority of the population and Christianity and traditional religions have a large following". (Source: <http://www.law.cornell.edu/world>, accessed on March 2011)

²⁰ The constitutional articles referred to are: Egypt, article 2; Saudi Arabia, article 1; Sudan, article 65; Afghanistan, article 3; Iran, article 4; Pakistan, article 2A in relation to article 227.1

commercial law and regulations are not transparent, the risk of any economic activity will increase drastically and it will impair the efficiency and social welfare. In respect to the importance of this subject the review of the situation of commercial and contract law in some Muslim countries is needed but first we need to introduce the definition and importance of contract in shari'ah in the following chapter.

2.7 Contracts in Islam

2.7.1 Introduction

From the Islamic point of view, contract is known as 'aqd'. Literally, the Arabic term 'aqd' (عقد) is derived from the root word (ع-ق-د) which means to tie, to conjunct (Ghasemzadeh, 2008), to knot, to contract (Mohd Ma'sum, 2003), and to bind two ends of something and thereby form a strong connection (Razali, 1999). In legal terminology, generally, 'contract' or 'aqd' by the majority of Muslim jurists and scholars is referred to as an agreement between two parties on a particular subject matter, which is to be concluded upon offer (*ijab*) and acceptance (*qabul*) by the parties (Ghasemzadeh, 2008; Razali, 1999; Mohd. Ma'sum, 2003). This understanding is supported by the definition given by the Mejjelle.

The differences between shari'ah compliant contracts and conventional contracts arise from the beginning. First of all as Coulson (1984) says contract in shari'ah is a "legal undertaking" rather than a "binding promise" as in conventional law.

Another difference comes from the elements of a valid contract. From a legal perspective, a valid contract includes three elements: *offer*, *acceptance*, and *consideration*. When offer and acceptance are present, the parties are said to have achieved a "meeting of the minds." (Miceli, 2004) However, 'aqd' in the shari'ah not only includes bilateral agreement but also unilateral legal act (*iqa*) which does not necessarily involve consent from the other party and consideration. (Khairuddin et al, 2010)

2.7.2 Compliance with shari'ah by main sources

What are the criteria for a shari'ah compliant contract?

First of all if there is a clear injunction or guideline or norm related to a contract in Quran it must be observed at all costs. The main guideline for all shari'ah compliant contracts is to be in accordance with Quran (Obeidollah, 2005; Kamali, 2008). In Quran chapter 4 verse 29 Allah says:

“Squander not each other’s property in vanity (*batil*), but let there be among you trade and commerce by mutual consent”

Or in chapter 5 verse 1 says:

“O you who believe, fulfill your obligations”

According to these verses the God recommends regulating transactions between people for a mutual consent and also prohibits any agreement based on vanity or in the second recommends to fulfill any obligation.

Then the norms that follow from the sunna or traditions of the holy prophet have the second priority. For example in a very famous and controversial *hadith* he prohibits the contracts including gharar or uncertainty (this topic will be discussed in detail in the next chapters). The next step is ijma or consensus. So if there is not any direct and explicit guidance in Quran and in sunna about an emerging situation, the ijma of jurists governs that situation.

By a general review of the above mentioned main sources of shari’ah to distinguish Islamic contracts from conventional contracts; the main prohibited activities in the context of Islamic economics and finance could be summarized as follows(Khairuddin, 2010; Obeidullah, 2005; Mohd M’asum, 2003):

- **Price Control and Manipulation**
 - No attempt to influence prices through creating artificial shortage of supply or monopoly that leads to deception and inflation (*ihthikar and iktinaz*).
 - No attempt to bid up the prices by creating artificial demand(Najas)
- **Unfair Prices**(A fair price is an outcome of free play of forces of demand and supply without any intervention)
- **Unequal, Inadequate and Inaccurate Information**
 - Release of inaccurate information
 - Concealment of vital information (*ghishh*)(the informationally disadvantaged party at the time of the entering into the contract has the option to annul the contract)
- Transactions involving **prohibited subject matter** such as trading in alcohol, pork, dead animals, and prostitution.
- **Riba** (usury, interest charges) in loans in which a premium must be paid by the borrower to the lender together with the principal amount.

- **Gharar** (uncertainty) when a person undertakes a venture without sufficient knowledge and excessive risk such as gambling.

2.7.3 Permissibility and Customs: A Historical Background of Contract Law

Another important question raised here is; are only the contracts and rules which are explicitly mentioned in *nussus (aqud al-musamma)* shari'ah compliant? What about new situation that were not applicable in early Islamic era?

To make a clear answer to this question we need to find out the main source of contract law in shari'ah. Some jurists believe that the source of contracts and transaction laws in Islam is the custom and/or reasoning and has little relation with rituals (Langroudi, 1999; Feiz, 2003). The historical survey also confirms it. Islamic historical research shows that business activities were the main source of livelihood among the residents in Mecca prior and after the born of Islam (Rayner, 1991; Razali, 1999; Otto, 2010). In the pre-Islamic era, commercial transactions involving contracts were widely practiced and during such time, contracts were secured by the word of honor granted by the parties involved in the transactions.

The birth of Islam did not denounce trade and commercial transaction that were practicing during pre-Islamic period, but rather encouraged Muslim to be successful in such field (Razali, 1999). In fact, some verses in the Quran are using mercantile terms in deriving its legal doctrine as due to the reflection of the nature of Mecca and Medina residents during its revelation. However, the emergence of shari'ah after the Prophethood of Muhammad reforms the customary practice in trade and contractual dealing in commercial transaction (Rayner, 1991; Razali, 1999). Injunctions under shari'ah, such as the prohibition of riba (usury), monopoly, hoarding, exploitation, involvement of prohibited subject matter and etc were gradually being taken into consideration in performing daily businesses.

Moreover there is no general theory and general definition of 'contract' or 'aqd' established by the traditional Muslim jurists until the 19th century (Saleh, 1990; Rayner, 1991; Vogel et al, 1998; Buang, 2004). Only in the 19th century, the early treatises of Islamic Civil Law Codification, the Mejlle (Ottoman Civil Code) and *Mursyid al-Hayran* (the 1891 Egyptian version of the Ottoman's Mejlle), started to give 'contract' a general definition. Regarding these facts some believe that the transactions and contract law in Islam must be compatible to the new customs and beliefs and also they are complementary and not obligatory (Langaroudi, 1999).

Subsequently, the normal practices in commercial transaction were modified to be shari'ah compliant and any new transaction occurred that did not contravened by the *nass* (textual source) was accepted (Rayner, 1991; Razali, 1999) such as *istisna* (manufacturing contract) and *Al-Ijarah Thumma al-Bai'* (hire contract

with intention to buy after the *ijarah* contract ends). In fact, contracts such as *musharakah* (partnership), *mudarabah* (co-partnership), *wakalah*(agency), *salam* (future delivery), *ijarah* (hire), etc. were practiced prior to Islam.

Ibn Taimiyah in this respect says:

“Men shall be permitted to make all the transactions they need; unless these transactions are forbidden by the Book or by the sunnah.” (Ibn Taimiyah, 1948)

This principle is based on a legal maxim mentioned by various scholars which provides that, “permissibility is the original state of things.” This maxim is concluded from the principle of *istishab* which refers to the presumption of continuity of the original ruling as long as there is no other *dalil* to establish the contrary. According to Abdurrahman (1999), the maxim carries the meaning that everything

Table 2.4 Scope of Customary Law in Selected Muslim Countries

z

country	Scope of customary law (1: small; 2: moderate; 3: vast)
Egypt	1
Morocco	2
Saudi Arabia	1
Sudan	3
Turkey	-
Afghanistan	3
Iran	2
Pakistan	3
Indonesia	2
Malaysia	2
Mali	3
Nigeria	3

inside business transactions is considered lawful (*halal*) unless there is an indication in Quran and sunnah that prohibits it either explicitly or implicitly.

This definition could be also justified by a legal maxim called as permissibility maxim: “Permissibility is the original presumption unless there is a prohibition”. This maxim is concluded from the principle of *istihsan* which refers to the presumption of continuity of the original ruling as long as there is no other

reason to establish the contrary. According to Abdurrahman (1999), the maxim carries the meaning that everything inside business transactions is considered lawful (halal) unless there is an indication in Quran and sunnah that prohibits it either explicitly or implicitly.

It implies that shari'ah is permissive for any custom which is not against the main sources. What is reflected in the Table 2.4, scope of customary law in selected Muslim countries, and also Tables 2.2 and 2.3, is not only indicating the permissibility of shari'ah already discussed but also it reflects that what is known as shari'ah in a country at the first view; could be a combination of customs, colonial law, political and legal system and so on which could not be distinguished without a very thoughtful and comprehensive survey in all above mentioned topics.

2.7.4 A Comparative Study of Shari'ah Compliance in Commercial Code of Muslim Countries

Following the comparative research method already introduced, we need to determine when, where, to what extent, and how shari'ah is compliant with the commercial law in Muslim countries.

Ballantyne (a lawyer who has lived in Arab countries more than 40 years) has a brief answer to the research question:

“In confronting any legal problem, perhaps the first question to be asked is: "To what extent, if at all, does the shari'ah affect the matter?" The answer may vary from, "not at all" in a problem falling within the Commercial Code of Kuwait, to "basically" in a problem in Saudi Arabia, while in the other jurisdictions, the answer may be somewhere between these two extremes. Overall, we must record and always bear in mind the uncertainty engendered by the looming presence of the shari'ah, which should be one of the factors to be borne in mind in weighing the benefits and risks of any commercial contract.” (Ballantyne, 1985)

To examine this matter more in practice we briefly review the current situation of commercial codes including codes related to the Islamic Finance and Banking in some selected countries i.e. GCC, Malaysia and Iran.

2.7.4.1 Malaysia

Malaysia received its independence in 1957 and the first constitution law based on English common law was issued at the same year. Article 3 of the Federal Constitution names Islam as the religion of the Federation. It has generally been agreed that this provision does not in any sense establish an Islamic state. There is also no provision for the shari'ah to be a source, much less the primary source, of legislation (Zulkifli, 2010).

Malaysia has a dual legislative framework consisting of mixed legal systems namely common law and shari'ah. The common law principles were applied in the civil court in almost matter of jurisdiction. Islamic law in contrast is practiced in shari'ah court and only pertaining to the family matters and law of inheritance (ibid).

In 1983 the Islamic Banking Act gained influence especially since the creation of the Islamic Development Bank, forms the core of Islamic banking in Malaysia (Harding, 2010), and supported by the Takaful Act 1984, the Banking and Financial Institutions Act 1989 (BAFIA), the Central Bank of Malaysia(BNM) Act 2009, and the Securities Commission Act 1993. The Federal Constitution puts Islamic banking matter under the jurisdiction of the civil court. BNM supervises the Islamic banks.

To ensure compliance with the shari'ah in Islamic finance and banking in Malaysia a “shari'ah committee” (the terms “shari'ah supervisory council” or “shari'ah advisory council” has been used interchangeably) is established. They advise the Islamic financial institutions on any shari'ah matter. According to the guidelines issued by BNM to regulate the governance of Islamic financial institution the members of the shari'ah committee shall at least either have qualification or possess necessary knowledge, expertise or experience in Islamic jurisprudence or Islamic law of transaction.

2.7.4.2 Saudi Arabia

Although Shari'ah is considered as the main source of legislation in Saudi Arabia, the other source of law such as customary law, world case law and doctrine and jurisprudence are also acceptable (Ballantyne, 1985). Saudi Arabia does not have written-constitution since Quran and sunnah are considered as its constitution. In 1926, the administrative structure of Saudi Arabia was established by the Organic Instructions of the Hijazi Kingdom supplemented by the Statute of the Council of Deputies and the Constitution of the Council of Ministers (Zulkifli, 2010). In 1931, commercial matters were put under the jurisdiction of commercial court which is more like a commercial council. In 1966, the legal framework of financial system went under the Banks Control System by virtue of royal decree No. 5, but this law is silent on the issue of usury.

The emergence of Islamic Financial Institutions (IFIs) began when the Islamic Development Bank was established in Jeddah in 1975 followed by the Islamic Dar al-Mal al-Islami Company.

All of IFIs in Saudi Arabia are not supervised by the Saudi Arab Monetary Agency (SAMA) but they are monitored and organized as commercial companies by the Saudi Ministry of Commerce.

Despite of the Capital Market Laws of 2003, 15 sukuk issuances in 2000–2008 and huge Islamic mutual funds, there is no single legislation specifically regulating the implementation of Islamic finance.

The shari'ah governance model in Saudi Arabia is much more based on self regulated approach not due to any legal and supervisory requirements. (Zulkifli,2010)

2.7.4.3 Bahrain

Bahrain was exposed to the English system more as compared to other GCC countries. However, after independence in 1971, shari'ah is as a **main source** of legislation as stated in the Article 2 of the Constitution. Bahrain developed its own laws such as, the Law of Civil and Commercial Procedure codified in 1971, the Law on the Establishment of the Bahrain Monetary Agency of 1973, the Companies Registration Act of 1983 and the Commercial Law of 1987 based mainly on the Egyptian civil code. Article 76 of the Commercial Law of 1987 clearly allows interest charges in commercial loan but subject to the rate determined by the Bahrain Monetary Agency (Al-Suwaidi, 1993).

Bahrain is now as one of the leading players of Islamic finance industry by hosting some of the international IFIs namely AAOIFI (Accounting and Auditing Organization for Islamic Financial Institution), IIFM (International Islamic Financial Markets), IIRA (Islamic International Rating Agency), and CIBAFI (General Council of Islamic Banks and Financial Institutions).

Bahrain has a Dual (Islamic and conventional) banking system; Basel capital requirements and core principles adopted for both groups (Chapra et al, 2000). The Central Bank of Bahrain (CBB) is the sole responsible for regulating and supervising all financial institutions, insurance sector as well as capital markets. The CBB requires all banks to establish an independent *Shari'ah board* complying with AAOIFI's governance standards for IFIs No.1 and No.2. Bahrain has established National shari'ah Advisory Board of the CBB with purpose to serve and to verify the shari'ah compliance. Shari'ah board of the CBB does not have authority upon the other IFIs. Bahrain follows the AAOIFI governance standards where it requires all IFIs to establish Shari'ah Supervisory Board. A separate function of shari'ah review for a purpose of ensuring shari'ah compliance is required according to CBB Rule Book (Zulkifli2010).

2.7.4.4 United Arab Emirates (UAE)

After independence in 1970, in Article 7 of the UAE Constitution, which passed in 1971, shari'ah was recognized as a **main source** of legislation and the religion of the state is Islam²¹.

According to the Article 75 of the Federal Law, enacted in 1973, the Supreme Court shall apply the provisions of the all laws in the country, conforming to the: 1. Islamic shari'ah. 2. custom and those principles of natural and comparative laws which do not conflict with the principle of the shari'ah.

²¹ There are two views on the interpretation of the article 7 of the UAE Constitution. The Islamist tends to interpret that shari'ah shall be the supreme law and above all of other laws while the Liberalist places shari'ah on an equal footing with other laws. The practice however shows different situation where shari'ah rules are made obligatory in criminal cases and not strictly applicable in commercial matters especially in relation to banking and finance disputes (Al-Muhairi, 1996).

There is a civil emphasis, notably in the Companies Law and in other specific laws, although there are still few codes; as far as the Union is concerned civil principles are set out to remove the trace of common law (Ballantyne, 1985).

Although Abu Dhabi already gives the emphasis to the civil approach, Dubai, Sharjah and Ra'sa l-Khaima still apply the same Contracts Law as Bahrain, so that one starts with the existing common law, and introduces civil law as appropriate. It is not inaccurate to say that one may validly apply this approach in the remaining Emirates Ajman, Ummal-Qawain and Fuairah (Ballantyne, 1985).

The Union Law No. (10) Of concerning the Central Bank, the Monetary System and Organization of Banking is the main governing law for the financial sector in the UAE. At the beginning any kinds of interest in respect of civil transactions were prohibited by virtue of article 714 of Federal Law No. 5 of 1985. However the Federal Law No. 11 invalidated all previous laws with respect to the interest prohibition (Al-Suwaidi, 1993). The Federal Law No. 18 granted the bank's right to charge interest in respect of a commercial loan as per the agreed rate in the contract in 1993.

The shari'ah governance system in the UAE except Dubai is governed by the Federal Law No. 6 of 1985 which clearly states the position of the Higher Shari'ah Authority-as a government established body-to be binding. IFIs required establishing a Shari'ah Board of a minimum of three members The IFIs cannot simply appoint their Shari'ah Board members but they are required to submit the proposed names of the shari'ah advisors to the Higher Shari'ah Authority for approval. In Dubai International Financial Centre (DIFC), IFIs registered have to comply with the DIFC regulations; the authority requires IFIs to adopt the AAOIFI governance standards to ensure consistency and compliance with the shari'ah.

2.7.4.5 Kuwait

The legal system of Kuwait is based on French and Egyptian models particularly to its commercial code such as the Commercial Companies Law of 1980 and the Commercial Code of 1981 (Gerald, 1991). Article 2 of the constitution of Kuwait puts shari'ah as **a main source** of legislation and Islam as the official religion. This can be evidenced in article 547 of the Civil Law Code of Kuwait of 1981 where this code prohibited the practice of charging interest on loans and article 305 which declares such transaction to be void.

Although the Civil Law includes many shari'ah provisions, the Commercial Code(1981) preserves commercial transactions to a large extent from influence of the shari'ah. In the Commercial Code of 1981, interest charge on loans by financial institutions is expressly permissible (Ballantyne, 1985).

Sources of law in Kuwait are accordingly: 1.legislative provision 2.customs 3.deduction from Islamic Jurisprudence. (Zulkifli, 2010)

The principal ministerial authority for enforcement of commercial laws is the Ministry of Commerce and Industry and the Central Bank (CBK) is the sole regulator for monetary financial system. Article 93 of CBK Law requires all IFIs to establish an independent Shari'ah Board which shall be appointed by the bank's General Assembly. The composition is as AAOIFI standard. There is no Shari'ah Board in the CBK to act as the highest shari'ah authority in Islamic banking and finance affairs. The Fatwa Board in the Ministry of Awqaf and Islamic Affairs is the final authority for any shari'ah dispute involving Islamic banking and business (Zulkifli, 2010).

2.7.4.6 Qatar

Qatar celebrated its independence in 1971 with its first provisional constitution on 2 April 1970 and was replaced by the amended provisional constitution of 19 April 1972. Article 1 of the 1972 constitution clearly states that the Islamic law is **a main source** of legislation and Islam is the religion of the state (Hamzah, 1993). Although, the constitution of Qatar specifically puts shari'ah as a main source of legislation, in the aspect of commercial transactions, shari'ah nevertheless is acceptable as one of the main sources of legislation but not as a primary consideration. Moreover, there is contradiction between the Qatar civil and commercial codes and its constitution. This can be evidenced by referring to article 4 of the Civil and Commercial Code which states that shari'ah shall apply in the absence of express legislation provision or custom. This position puts shari'ah as a secondary source of legislation in the aspect of commercial transaction in which contradicting to the article 7 of the Constitution. It is presumed that the Qatar Civil and Commercial Code is excluded from the application of article 7 and hence permits the interest-based transaction in the financial sector.

The Qatar Central Bank (QCB) is the regulatory body which supervises and manages the financial sector in Qatar while the Doha Securities Market serves as the securities market regulator.

2.7.4.7 Iran

Reza Shah²² could be assumed as the founder of new judicial system in Iran. He secularized all areas of law in a way that shari'ah concepts were put aside and European-inspired codes were enacted. In 1931, parliament passed a law defining shari'ah courts as 'special courts', which not only reduced their jurisdiction to disputes involving the essential validity of marriage and divorce but also placed them under the authority of state courts (Banani, 1961). Among all the newly codified laws, only the new Civil Code retained the shari'ah. Many of its 1,335 articles were in effect a simplification and codification of majority opinion within shi'ah jurisprudence. The commission, appointed by the Ministry of Justice in

²² King Reza, king of Iran from 1925 to 1941.

1927 to draft the code, used the three most authoritative shi'ah legal texts as sources, and the Belgian, French and Swiss codes and also Egypt civil code as models (Mehrpoor, 2001).

Iran's constitution changed completely toward shari'ah compliance after the Islamic revolution in 1979. Article 1 of the new Constitution Law of Iran states,

“The form of government of Iran is that of an Islamic Republic”.

And article 4 confirms that:

“All civil, penal financial, economic, administrative, cultural, military, political, and other laws and regulations must be based on Islamic criteria. This principle applies absolutely and generally to all articles of the Constitution as well as to all other laws and regulations, and the fuqaha' of the Guardian Council are judges in this matter.”

So any enactment passed by parliament first should be assessed by guardian council to be in accordance with shari'ah law. If guardian council approves and president signs it, the enactment is considered as a law and comes into force after 15 days.

However the new Civil Code enacted in 1983, the main structure of first draft, enacted between 1928 to 1936, remained untouched because the 1936 Civil Code was already enacted under the inspiration of shari'ah and shari'ah law (Amin, 1988). The Guardian Council and the High Judicial Council (until its abolition under the 1989 amended constitution) undertook the revision of laws found to be in contradiction with shari'ah provisions. In 1982 and 1991, they deleted, amended, or replaced fifty articles of the 1935 Civil Code (Mehrpoor 2001). ‘Return to Shari'ah’ after revolution has not been a return to the classical fiqh notion of plural and uncodified laws; the judiciary has retained not only many of the legal concepts and laws of the former era, but also the notion of a centralized and unified legal system (Mir-Hoseini, 2010). The combination of Islamic doctrine, shari'ah, legislation based on shari'ah, *fatwas*, and pre-revolutionary legislation often resulted in confusion. Courts were forced to choose among available legal sources in an eclectic manner (Zubaida, 2003).

Iran civil code is the only civil law inspired by shi'ah jurisprudence (McGlenn, 2001). The main practical difference is about the wide use of reasoning and *ijtihad* which makes shi'ah more flexible to deal with new dilemmas and challenges (Motahari; Ghasem zadeh, 2008). Based on this in January 1988 Ayatollah Khomeini, Iran's supreme leader declared that an Islamic state had the right to disregard Islamic ordinances when passing resolutions and laws. The state's freedom of action is thus identical to the freedom of action of God. It follows that state law can over-rule the shari'ah and everything else if the *maslahah* of state justify it (Khomeini, 1988). It means that when an Islamic ruler had to choose between the shari'ah and the survival of the state, he chooses the latter (Arjomand, 1992). It is on contrary with the

belief of all of the other Islamic schools of law which already described in section 2.7.2, but it should be noticed that it is not so common to select among shari'ah and Islamic state!

Some Muslim scholars have accepted *maslahah* as a source of shari'ah but shi'ah scholars traditionally reject it. *Maslahah* literally means benefit or interest. The objective of *maslahah* is to protect five essential values, namely religion, life, intellect, lineage and property (Al-Ghazali; cited by Mir Hoseini, 2010). There are some conditions for validity of *maslahah*:

- Must be genuine
- Must be general. It should secure benefit to the people as a whole not to a particular person or group of persons
- Must not be in conflict with a principle or value which is upheld by Quran, Sunnah or consensus of scholars'(Ijma)

Ayatollah Khomeini's books, particularly the *Tahrir al-Vasila* and *Towzih al-Masa'el* (Clarification of Questions), are commonly consulted by judges and legislators, and the second is used as a layman's handbook for daily life (Shirazi, 1997).

As mentioned article 4 of the 1979 Constitution sets forth that shari'ah not only dominates positive law in Iran, but also prevails over every form of customary law and international law, including in the domain of human rights (Mir-Hoseini, 2010). The over-rule of shari'ah is controversial mostly in human right issues but in case of contract and shari'ah law it is more flexible if not violating shari'ah and other superior laws, there are some articles in the Civil Code that support this claim. In some articles such as 382,381,375, 358, 344, 476 the both party of transaction are allowed to act on contrary to the law if their custom is different. In article 10 has been stated:

“Private contracts shall be binding on those who have signed them, providing they are not contrary to the explicit Provisions of a law.”

Some lawyers believe that in the Civil Code there are very few articles related to the transactions and contract law that are explicitly obligatory and some articles that not mentioned explicitly if it is obligatory or complementary (Jouybari, 2007; Langaroudi, 1999). According to the article 223 of Iran civil code:

“Any contract entered into is understood to be valid unless its false nature is proved.”

Ghasem zadeh(2008) believes that according to this article whenever there is a hesitation that an available contract is contrary to law, validity is the presumption and whenever it is contrary to law but not certain that the law is obligatory or complementary, the law must be considered complementary and

again contract is valid. Otherwise if someone believes the contract is contrary to the shari'ah she must prove it according to a valid source. According to another article of Iran Civil Code (article 190) for the validity of a contract the following conditions are essential:

- I - The intention and mutual consent of both parties to the contract (offer and acceptance);
- 2 - The competence of both parties;
- 3 - There must be a definite thing which forms the subject-matter of the contract;
- 4- The cause of the transaction must be lawful.

Iran monetary and finance system is regulated by the Central Bank of Iran (ICB). Before 2001 all banks were in the public sector. The first private bank established in 2001 and by 2011 around 20 private banks are working or getting the certificate for activity. Bank regulation and supervision is strongly affected by monetary as well as fiscal and other government policies. There is a single (Islamic) banking system under the 1983 Usury Free Banking Law. All modes of finance are defined by this Law. Individual banks have no shari'ah board for onsite and offsite supervisory methods. Objectives defined and applied by regulations. Banks and insurance companies are supervised by different regulatory authorities.

As indicated in Table 2.6 and 2.7 the quasi-interest rate paid to depositors and quasi-interest rate of loans are set out ex-ante in a same way as conventional banks and even much higher than a lot of conventional banks. So the Islamic banking in Iran is under criticism not to be in complying with shari'ah.

Table 2.5 The Minimum quasi-interest rate paid to the depositors for a musharakah or mudarabah contract in Iran set by ICB(www.khabaronline.ir/detail/196824/)

year	Short term	1-year	2-year	3-year	4-year	5-year
1996	8	14	15	16	-----	18.5
1997	8	14	15	16	-----	18.5
1998	8	14	15	16	-----	18.5
1999	8	14	15	16	-----	18.5
2000	8	14	15	16	17	18.5
2001	7	13	13-17	13-17	13-17	17
2002	7	13	13-17	13-17	13-17	17
2003	7	13	13-17	13-17	13-17	17
2004	7	13	13-17	13-17	13-17	17
2005	7	13	13-17	13-17	13-17	17
2006	7	7-16	7-16	7-16	7-16	16
2007	7-8	12-16	13-15.8	13.7-15.8	13.8-16	16
2008	9-10	15-16	15.5-16	16-17	16.5-18	17-19
2009	9-10	14.5-15.5	15.5	16	17	17.5
2010	6-11	14-15	14.5	15	16	17
2011	7	17	18	19	19.5	21

2.7.5 Summary and Conclusion

The IFI regulatory and supervisory system of Muslim countries could be classified into four shari'ah governance models as follow (Zulkifli, 2010):

I. Passive Approach

This model is exclusive to shari'ah governance model in Saudi Arabia. Saudi Authority Monetary Agency (SAMA) treats IFIs equal to their conventional counterparts. SAMA has yet to issue legislation pertaining to Islamic finance and guidelines on shari'ah governance system. There is no national shari'ah advisory board or any institutions to be the sole authoritative body in Islamic finance. The existing shari'ah governance system as practiced by IFIs in the Kingdom is a product of self initiative rather than regulatory requirement or regulator's direction.

Table 2.6 The loan rate charged by Iran Central Bank classified by field of activity
set by ICB(www.khabaronline.ir/detail/196824/)

year	Industry	Housing	Agriculture	Commerce	Export
1996	19-17	16-15	16-13	22-25	18
1997	20-17	16-15	17-13	22-25	18
1998	21-17	15-16	18-13	22-25	18
1999	22-17	15-16	19-13	22-25	18
2000	23-17	15-16	20-13	22-25	18
2001	18-16	15-16	15-14	23	18
2002	17-15	15-14	14-13	22	17
2003	16	15	13.5	21	15
2004	15	15	13.5	21	14
2005	16	15	16	16	16
2006	14	13	14	14	14
2007	12	11	12	12	12
2008	12	11	12	12	12
2009	12	11	12	12	12
2010	12-14	11	12-14	12-14	12-14
2011	14-15	11	14-15	14-15	14-15

II. Minimalist Approach

This model is mainly practiced by the GCC countries with the exception of Oman and Saudi Arabia. Unlike the reactive approach, the minimalist model allows slight intervention on the part of regulatory authorities. The regulatory authorities expect IFIs to have proper shari'ah governance system without specifying the requirements in details. There is no restriction on multiple appointments of the shari'ah board to seat in various institutions at one particular time. Some jurisdictions in the GCC countries such as Bahrain, Dubai and Qatar favor the adoption of the AAOIFI Governance Standards. The minimalist approach prefers the market to develop its own shari'ah governance system rather than greater intervention on the part of regulators.

III. Pro-Active Approach

This model is favorable by Malaysian regulatory authority. The proponent of this model has strong faith in regulatory-based approach in strengthening shari'ah governance framework. With this motivation, Malaysian regulator initiates comprehensive shari'ah governance framework from regulatory and non-regulatory aspects. There are several laws were passed and amended by the parliament such as the Islamic Banking Act 1983, the Takaful Act 1984, the Banking and Financial Institutions Act 1984 and the

Securities Commission Act 1993. The Central Bank of Malaysia Act 2009 confirms the status of National Shari'ah Advisory Council (SAC) to be the sole authoritative body in Islamic finance. Furthermore, the Bank Negara Malaysia (BNM) has issued the Guidelines on the Governance of shari'ah Committee for the Islamic Financial Institutions known as the BNM/GPS1. To complement this, the Securities Commission of Malaysia issued the Registration of Shari'ah Advisers Guidelines 2009 which setting up the criteria for the registration of a shari'ah adviser in the capital market sector.

IV. Passive-Interventionist Approach

Passive-Interventionist model is unique to shari'ah governance model in Iran. Likewise Saudi Arabia in Iran passively there is no shari'ah board in IFIs but on the other hand the interventionist model allows third party institution to make decision on any shari'ah matters including Islamic finance. In the case of Iran, the Guardian Council is the highest authority in matters involving Islamic issues.

In the Table 2.9 the results of essential findings in this chapter has been summarized

Table 2.7 Comparative study of the regulatory system of some Muslim countries

Country	Model	Shari'ah rulings are binding on IFI's	Conflict of Laws	Court Jurisdiction
Malaysia	Pro-Active	Yes	Serious (Dual legal system)	Non-shari'ah courts
Saudi Arabia	Passive	No	Only in international contracts	Banking dispute settlement
Bahrain	Minimalist	No	Same as above	Non-shari'ah courts
Kuwait	Minimalist	No	Same as above	Same
UAE	Minimalist	Yes	In a degree among civil, common and shari'ah law	Same
Qatar	Minimalist	No	Same as above	Same
Iran	Passive-Interventionist	Yes	Same as above	General Courts under usury free banking law

2.8 Shari'ah Compliant Construction Contracts

2.8.1 Definition

Even there are some articles that concern shari'ah compliant contracts in general; in special cases such as construction contracts we have very few references and definitions. Among these Khairuddin (2008a) has a most comprehensive definition about a shari'ah compliant construction contract.

“A shari'ah compliant construction contract is a construction contract with its subject matter, agreement, terms and the conditions that embrace the Islamic belief, practice and value system.”

So he believes that the main objective of a shari'ah compliant contract is not only to fulfill the demand of the industry but most importantly it is to fulfill obligations of Muslims towards Allah which requires us to

identify the halal (lawful) and haram (prohibited) in our everyday dealings. To fulfill this demand Khairuddin (2008b) believes that a contract which is mentioned in the *nussus* is the best option (*aqud al-musamma*), then he introduces that contract as follow:

“It has been agreed by many scholars that *istisna* is considered as the appropriate shari’ah compliant contract agreement to be used for construction.”

2.8.2 Istisna

Istisna is a commission for manufacturing which is a contract to purchase items to be manufactured by the manufacturer. The manufacturer provides raw materials and labour in order to produce the final products as specified in the contract (Al-Zuhayli, 2002). However, this contract is not only restricted to traditional production but can also be extended to the construction sector. This is due to the reason that, in a construction contract, the subject matter is nonexistent at the time of the contract, thus, it has the same nature as the *istisna* contract.

Saudi Arabian General Investment Authority (2005) reported that *istisna* contract in construction has been practiced in Saudi Arabia since 1998.

Three schools out of four main schools of sunni fiqh did not recognize the *istisna* contract but permit it if it satisfies the condition of *salam* (forward sale) while some other believe that it is about selling things which the seller does not own so it is far from the conditions of *salam*. The Hanafi jurists have legalized *istisna* contract on the basis of *istihsan* (Comair-Obeid, 1996; Muhammad Al-Bashir et al, 2001) According to Ilyana²³, the reasons that support *istisna* as legitimate are:

1. *Istisna* has been widely practiced by people without denunciation,
2. The society is undeniably in need of this kind of contract as they always require goods which suit their specifications and not available in the normal market,
3. Although the subject matter is non-existent at the moment of contracting, based on common past experience, it is compensated by its frequent existence at the time of delivery.

The seventh session of the Islamic fiqh Academy also recognized *istisna* based on the interests of people and its important role in the economy (Resolution No.65/3/7, Islamic Development Bank, 2000) if it satisfies the following conditions:

1. It is necessary for the validity of *istisna* that:
 - a) The nature, quality, quantity, and the description of the assets to be manufactured are known
 - b) A time is fixed for the manufacturing of the asset.

²³ Cited by Khairuddin et al. (2010)

2. It is permissible in a contract of istisna to defer the entire payment or to pay by installments within a fixed time.
3. It is permissible to include in a contract of istisna a clause about liquidated damages, if the parties so agree, save for cases of force majeure or unforeseen events.

According to Khairuddin (2007), istisna contract for construction works is currently being practiced in some MENA countries, the United Kingdom and in the United States. However, most istisna contracts currently in use are for financing construction projects by financial institutions.

In reference to the basic model the client will request the bank to construct his building according to a specified approved design and specification at a specific selling price which is determined by the bank. The selling price is to be paid by the client by an agreed method usually by monthly installments in a specific period of time. They will enter into a contract with the client as the buyer and the bank as the seller. The bank will then request another party i.e. a contractor to construct the building with similar specifications as to those given by the client at a specific purchase price which is determined by the bank to be paid to the contractor by the same installment method and in the same period. The bank and the contractor will enter into a contract where the bank acts as the buyer and the contractor as the seller. Upon completion of the building, the contractor will hand over the building to the bank and the bank will then hand it back to the client (Ahcene,2008).

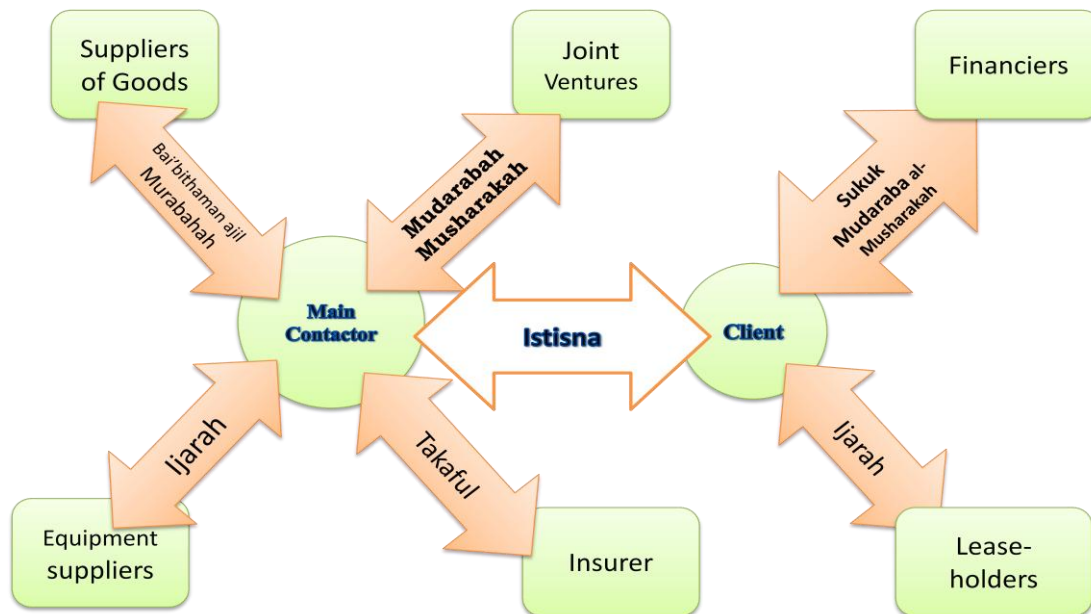


Figure 2.2 A Typical shari'ah compliant project based on *aqud al-musamma*, "Shall it guarantee the shari'ah compliance?"

Figure 2.2 indicates a typical shari'ah compliant project based on contracts mentioned in nussus. Does it really mean that the shari'ah compliance of a project would be guaranteed in this case? According to the results of Chapter 2 and based on formality if everything is done properly for example according to the available standards and approved by shari'ah advisory board, it would be shari'ah compliant. On the other hand, it does not mean that a project which includes a contract not already mentioned in nussus is not shari'ah compliant. This conclusion would be practiced from other points of view in Chapter 3 and Chapter 4.

2.9 Conclusion

In this chapter the effort to find out the definition of shari'ah and the notion of shari'ah compliant in contracts ended in a result that it is impossible to find an exact and absolute definition for shari'ah and shari'ah compliant. It is a wrong presumption that we have one shari'ah so it was necessary to do a historical survey in the Muslim World with a more focus on the current situation of Muslim countries. The results of this survey denoted a wide range of approach in Muslim countries toward shari'ah compliance which reflects a variety of causes and effects started from the formation of two main Islamic branches, shi'ah and sunni, and different schools of law and continued in the rise and collapse of main Islamic empires and finally in the formation of legal system in the current Islamic nations and continued with the role of customs and rule of law in different countries. So the subject of shari'ah compliant contract is a combination of social, cultural, economic, historical and political; rather than theological studies. Practically different understandings about compliance with shari'ah are controversial. As Otto(2008) says in Tunisia, polygamy was abolished formally in 1956, allegedly referring to shari'ah, in Indonesia polygamy is limited and controlled by state 'religious court' taking shari'ah into account, while in Egypt, women's right to obtain a divorce have recently been expanded with reference to shari'ah.

One of the main challenges of Shari'ah Compliant Contract is about its socioeconomic efficiency. If we just change the name to a shari'ah based but follow the same as capitalist approach, the result will be far from the shari'ah objectives as Allah in Quran says:

“We sent our Messengers and revealed the Book through them so as to establish justice among people” Quran 57:25

The concept stands on the principles of the economic well-being of the society, solidarity, justice, accountability, transparency and responsibility. Therefore a shari'ah compliant contract and corporate governance is supposed to protect the shareholders' rights; ensure the enforceability of contracts; be free from interest, corruption, and unethical or non shari'ah compliant elements; and align the interests of managers, employees and shareholders (Gupta et al., 2008). Even as Obeidollah(2005) says the principle of ensuring maximum net social benefits is clearly accorded a lower priority than principles emanating directly from the holy Quran and the sunnah, it is still controversial whether a shari'ah rule is clearly against the notion of well-being and/or justice in the society and if so then how it could be justified.

In this practice Hegazy believes 4 roles for Islamic economics:

“The socio-economic approach to Shari'ah presents Islamic economic and financial ideas as a response to demands for social justice and economic opportunity, while at the same time complying with Islamic legal and moral principles. The proponents of this reform-driven approach claim that Islamic alternatives offer superior social and economic benefits to Muslim society.” (Hegazy, 2007)

In the other hand the most powerful Muslim indictment of today's Islamic Banking (the most prominent success of Islamic economics) is that it has become addicted to legal formalism and contractual subterfuge while losing sight of the higher objectives and intentions (*maqasid*) that law and economics should promote. They argue that Islam's core values abhor exploitation and extreme inequalities in wealth. Islamic economy and finance should not merely fall in line with global capitalism; they should help to humanize it.

It seems to evaluate risk in a contract related to the shari'ah is much more complicated than simply consider the risk as a standard deviation or to make an Islamic risk management or financial tool, simply enact it in a shari'ah board. We need to know more and more about the main philosophy which is behind any prohibition or recommendation in the Quran and sunnah and other main referable sources and when we know the main concept preferably in an economic language or practical way then it is much more trustable to develop a new risk management tool. The dynamic nature of all matters that react with shari'ah makes the subject of shari'ah compliance an ever changing subject with no stagnation. For example some recent events like Islamic revolution in Iran in 1979 changed the landscape of the Muslim world. It inspired Muslim masses and reinvigorated intellectual debates over the nature and possibilities of the

shari'ah at the beginning but later due to frequent failures some reformist movement appeared in Iran specially after the presidency of Khatami in 1997. His government's relatively liberal policies allowed the voices of dissident intellectuals, both lay and clerical, to be aired in the press and reach the public. Prominent among these were the 'New Religious Thinkers', who displayed a refreshingly pragmatic vigor and a willingness to engage with non-religious perspectives. They forced a rethinking and reworking of the founding concepts of the Islamic Republic which had in plan to combine theocracy and democracy but they believe that it has been a complete failure. So they argued – like the great Muslim jurist and philosopher al-Ghazali in the eleventh century– that Islamic fiqh is temporal and changeable; and –like all Muslim reformers since the late nineteenth century – they sought to establish conceptions of Islam and modernity as compatible. They believe it is not that the shari'ah has lost its sanctity; rather, the state's ideological use-or sometimes misuse- of the shari'ah and its penetration into the private lives of individuals have brought the urgent need for legal reform and for the withdrawal of the state from the religious domain (Mir Hoseini, 2010). Recently by emerging new social and political changes like the Arab Spring Movements in some Muslim countries; these topics are getting more and more controversial and giving a dynamic and ever-changing nature to the notion of shari'ah and shari'ah compliance.

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Chapter 3

Islamic Approach to Risk: A Game-Theoretic Model of Gharar

3.1 Introduction

Despite the fast development of Islamic finance and the huge number of articles and books written in this topic, the Islamic social and economic thought has had a limited progress. This limited challenge even could be one of the major challenges facing the future development of Islamic finance (Askari et al, 2009). Without knowing the philosophy behind the prohibitions, maxims and rules in Islam we may not face with new and challenging situations. One of the most important topics in Islamic economics is the approach toward risk and risk management which is related closely to the notion of gharar. Gharar in transactions is forbidden according to the Islamic law. Gharar is trivially translated as risk. “No venture no pain” is agreed by all experts, on the other hand the excessive risk will hurdle investment and deter growth. What is the reasonable and what is the unacceptable (forbidden) risk and how risk could be distinguished and managed from the conventional and shari’ah based point of view? To answer this question first the notion of gharar should be clarified through *nussus* and then the relation between gharar and risk should be investigated by studying some cases to recognize that what type and level of risk is tolerable in Islamic transactions and projects.

3.2 Risk

3.2.1 Risk and Uncertainty

The Oxford English Dictionary cites the earliest use of the word in English in the spelling of *risque* as from 1621, and the spelling as *risk* from 1655. It defines risk as:

”(Exposure to) the possibility of loss, injury, or other adverse or unwelcome circumstance; a chance or situation involving such a possibility.”

Risk is a part of God's game, alike for men and nations. Risk comes from not knowing what you're doing. As Warren Buffett says risk is related to any uncertainty and the undetermined part of life. Regarding this wide definition it might have had very wide aspects, from metaphysics matters to pure scientific activities, from cultural to financial affairs. Risk is indispensable for economic growth.

“This was introduced to continental Europe, through interaction with Middle Eastern and North African Arab traders. In the English language the term *risk* appeared only in the 17th century, and seems to be imported from continental Europe”. (Luhmann, 1996)

The many inconsistent and ambiguous meanings attached to "risk" lead to widespread confusion and also mean that very different approaches to risk management are taken in different fields. For example risk is defined in British Standard No. 4778: Section 3.1: 1991, as “A combination of the probability, or frequency, of occurrence of a defined hazard and the magnitude of the consequences of the occurrence”. In the same British Standard, the definition of *hazard* is given as “A situation that could occur during the lifetime of a product, system or plant that has the potential for human injury, damage to property, damage to the environment, or economic loss”. Based on these two definitions, risk may be expressed in the form of a mathematical equation, as follows:

Risk = Probability, or frequency, of the occurrence of a defined hazard x Consequences of the occurrence of that hazard; or $R = P * C$.

Uncertainty (as opposed to risk) has been the subject of an extensive literature. For example, some related books and surveys are: Balch, McFadden and Wu (1974), Diamond and Rothschild (1978), Hirshleifer and Riley (1979), Lippman and McCall (1981), Sinn (1983), Karni (1985) and Dreze (1987). The devices of state contingent consequence function and state preferences have been used to model preferences under uncertainty as uncertainty arises whenever decisions can lead to more than one possible consequence. According to Savage (1954, Ch. 2) (State of the World) is used to describe whatever determines the uncertain consequences (al-Saati, 2003).

The distinction between risk and uncertainty is also very confusing. These two are frequently used interchangeably but Frank Knight (1921) makes distinction between risk and uncertainty.

“... Uncertainty must be taken in a sense radically distinct from the familiar notion of Risk, from which it has never been properly separated. The term "risk," as loosely used in everyday speech and in economic discussion, really covers two things which, functionally at least, in their causal relations to the phenomena of economic organization, are categorically different. ... The essential fact is that "risk" means in some cases a quantity susceptible of measurement, while at other times it is something distinctly not of this character; and there are far-reaching and crucial differences in the bearings of the phenomenon depending on which of the two is really present and operating. ... It will appear that a measurable uncertainty, or "risk" proper, as we shall use the term, is so far different from an unmeasurable one that it is not in effect an uncertainty at all. We ... accordingly restrict the term "uncertainty" to cases of the non-quantitative type”

As he explains uncertainty is immeasurable while risk is a measurable uncertainty.

There are variety of definitions for different area in risk such as political risk, environmental risk, economic risk and financial risks. Because the latter are important for our discussion we give a definition for these:

“The economic risk is not an abstract ‘uncertainty’ or ‘possibility of failure’ or changeableness (variability) of the outcome... The economic risk – is a monetary amount which might be under-collected and/or over-paid. Economic risks can be manifested in lower incomes or higher expenditures than expected. The causes can be many, for instance, the hike in the price for raw materials, the lapsing of deadlines for construction of a new operating facility, disruptions in a production process, emergence of a serious competitor on the market, the loss of key personnel, the change of a political regime, or natural disasters.” (Galasyuk, 2007)

Financial risk is the probability that an investment's actual return will be different than expected. This includes the possibility of losing some or all of the original investment. In a view advocated by Damodaran (2003), risk includes not only "downside risk" but also "upside risk" (returns that exceed expectations).

3.2.2 Risk Management

Risk management is defined in BS 4778 as 'the process whereby decisions are made to accept a known or assessed risk and/or the implementation of actions to reduce the consequences or probability of occurrence'. Risk management is also concerned with the mitigation of those risks deriving from unavoidable hazards through the optimum specification of warning and safety devices and risk control procedures.

Various definitions and models have been developed for risk management. As Adams (1995) says, “Risk Management involves balancing the rewards of actions whose outcomes are uncertain against the losses”. Adams has developed a model of this balancing act as in figure 1. The model postulates that:

- Everyone has a *propensity* to take risks
- This propensity *varies from one individual to another*
- This propensity is influenced by the potential *rewards* of risk taking
- Perceptions of risk are influenced by experience of *accident losses* - one's own and others'
- Individual risk taking decisions represent a balancing act in which *perceptions* of risk are weighed against propensity to take risk (*Risk Perception* is the subjective judgment that people make about the characteristics and severity of a risk.)
- Accident losses are, *by definition*, a consequence of taking risks; the more risks an individual takes, the greater, on average, will be both the rewards and losses he or she incurs.

Figure 3.1 is a conceptual model, not a quantifiable one. Both the rewards and accidents boxes contain very large numbers of incommensurable variables that defy reduction to a common denominator. With individual risks directly perceived this balancing act takes place inside the head of the individual risk taker.

The next topic that Adams explains is closely related to the religious notion of risk where perceptual filters determine the risk taking behavior of an individual who could be a religious person. He says:

“In Figure 3.1 the risk thermostat is fitted with filters. The influence of these filters increases as we move from clearly perceptible risks and rewards to the uncertainty we are calling virtual risk. ...With invisible and possibly non-existent risks, such as those associated with pesticide residues or low-level radiation, the filters will be all-determining. The typology presented in Figure 3.1 has been variously called as a “typology of rationalities”, a “typology of social solidarities”, and a “typology of perceptual filters” or a typology of ethical filters because, inextricably bound up with every rationality, solidarity or perceptual framework, one finds sets of moral principles and ethical codes that inform risk taking behavior. “

A risk thermostat with filters

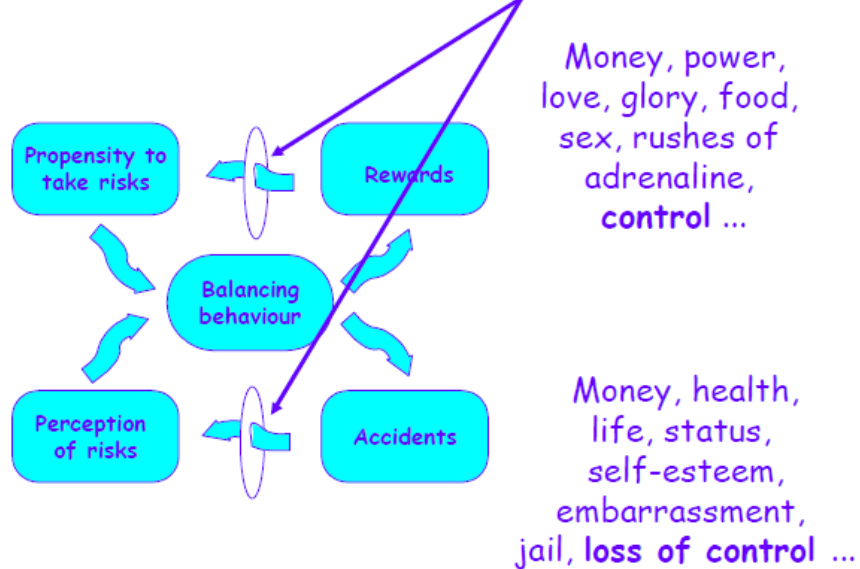


Figure 3.1 A Risk Thermostat with Filters (Adams, 1995)

Even later Adams refers to this model to explain the risk perception and trust against risks such as natural hazards and environmental dangers but the concept of morality and risk could be the main source of difference between Islamic and conventional *perception* of risk in contracts.

A typology of ethical filters

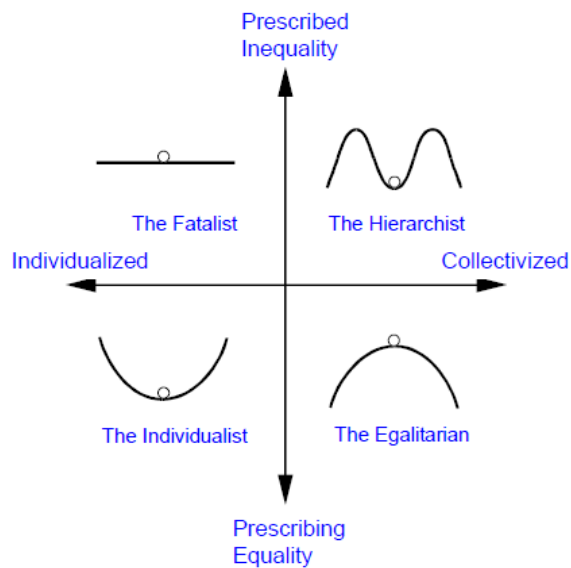


Figure 3.2 A Typology of Ethical Filters (Adams, 1995)

3.3 The Islamic Approach to Risk

3.3.1 Introduction

The notion of risk and danger specially in the transaction affairs has been considered in Islam much sooner than in Europe. More than 680 years ago, Ibn Taymiyya (728H – 1328) wrote:

“Risk falls into two categories: commercial risk, where one would buy a commodity in order to sell it for profit, and rely on Allah for that. This risk is necessary for merchants, and although one might occasionally lose, but this is the nature of commerce. The other type of risk is that of gambling, which implies eating wealth for nothing. This is what Allah and his Messenger have prohibited.” (cited in Swailem,2000)

Despite this rich heritage the modern scholars paid a few attentions to study the risk and uncertainty and decision making under uncertainty from the Islamic point of view. Suwailem (2000) says:

“Studies on decision-making under uncertainty from an Islamic perspective are quite rare. Further, despite the central position of gharar and risk in Islamic principles of exchange, there is no framework for studying such transactions within an integral theme of decision-making under risk.”

It is impossible to understand the Islamic approach to risk without understanding the notion of gharar. So first we try to make a definition about it.

3.3.2 Gharar and Prohibition of Gharar in Islam

Gharar is one of the controversial topics in Islamic transactions. It is translated as uncertainty and risk but as Zaki Badawi (1998) writes, the precise meaning of Gharar is itself uncertain. The literature does not give us an agreed definition and scholars rely more on enumerating individual instances of gharar as substitute for a precise definition of the term. Actually the fiqh scholars have not been able to define the exact scope of gharar (Vogel, 1998).

Gharar comes from root verb gharara (Gh.R.R ج ر غ). Literally means: Signifying to reveal oneself and one's property to destruction without being aware of it (Ibn Manzur, Lisan al-Arab), defraud or deceive (Javaheri, al-Sihah), danger, peril, jeopardy, hazard, risk (ibid, Dehkhoda, Montahi al-Arab).

In Qur'an there is no referring to gharar related to prohibition of it in contracts. As Ibn Arabi says the authority which prohibits elements of gharar in contracts is the hadith (ahkam).

There are several hadiths related to the prohibition of gharar and those could be categorized in 3 groups: (Buang, 2000)

- Non or incomplete ownership
- Nonexistence of the object
- Extra stipulation

Vogel(1998), describes two different positions about gharar among scholars. In the first position, he classifies the risks mentioned in gharar hadiths rising from either the parties' lack of knowledge; or nonexistence of the object; or the object evading the parties' control, since the third could be known as a special case of the second so the scholars would insist that valid contracts exhibit two features: *knowledge*, i.e., the parties' full knowledge of all aspects of the sale, including the object itself; and *existence*. The absence of one of these features cannot be compensated for by the other, and price cannot compensate for the absence of either one. As Vogel explain, this prohibition is related to the necessity of mutual consent among parties in a contract which is not accessible without a fair knowledge about the contract and the existence of the object of sale.

Another position, as Vogel then mentions, starts from the reading of hadiths of maysir and relates to the stipulating contracts. The reason for prohibition of these kinds of contracts is that gambling leads to individual immorality and social harms and raises enmity and distraction from prayer. Vogel believes that if gambling were the criterion for prohibition, the law might allow for more uncertainty in contracts, as to both existence and knowledge. These two positions are summarized in Table 3.1.

Table 3.1 Poles of interpretation of gharar(Vogel, 1998)

	Scope of permissibility	What to avoid?	Supporters(schools of law)
Position A	Restrictive	Ignorance, nonexistence	Shafi'i, Hanafi
Position B	Broad	Enmity, distraction from prayer	Hanbali, Maliki

The vast majority of classical jurists adopt Position A in Table 3.1. Thus, the majority of scholars as a general rule void sales of nonexistent or uncertain object without any consideration of degree of risk involved. The Shafi'i and Hanafi schools are most characterized by position A that leads to highly restrictive rules. For example the Shafi'i school prohibits sales of absent specific objects altogether. Both schools prevent sales of objects present but invisible (such as carrots underground). The Hanbali and Maliki schools move slightly toward Position B. They admit for example the sale of absent object by a complete description. In such cases the contracts are binding as long as the subject-matters agree with the

description. The Malikis, though not some Hanbalis, allow sale of present but unviewed items such as underground carrots or nuts in the shell. The Maliki school often distinguishes itself by allowing sales other schools prohibit, when circumstances indicate that gharar will be mild (Vogel,1998; Ibn Taymiyya). Ibn Taymiyya, the famous Hanbali jurist, had been seeking for refashioning the fiqh of contract law. His unique positions usually only found favor with his students, foremost among these Ibn al-Qayyim. However, modern scholars find his positions more adoptable to the modern law than those of other classical scholars (Vogel, 1998).

Ibn Taymiyya believes that interpreting gharar rules as barring nonexistence and lack of knowledge restricts contractual freedom too much, resulting in blind legalism and undue obstacles to people's welfare. He models gharar as maysir or gambling because of unknown fate. He explains that: when a slave runs away, or a camel or a horse is lost, his owner would sell it conditional on risk, so the buyer pays much less than its worth. If he gets it, the seller would complain: you have 'gambled' me and got the good with a low price. If not, the buyer would complain: you've gambled me and got the price I paid for nothing. Then Ibn Taymiyya explains why gharar is like gambling or maysir. He classifies the reasons in two main groups:

- Causing hatred and enmity,
- Getting something for nothing (injustice).

Which are very similar to the Position B in the Table 3.1 besides including the notion of justice. Chehata (1969, translated by Hassan), following a similar attempt to define gharar, concludes that the basis of the prohibition of gharar is the desire to ensure equivalence in commutative transactions. Comair-Obeid(1996), after a similar analysis of gharar, comes to the same understanding: "the concept of the balance of benefits so much desired by Islamic morality is the fundamental principle of gharar in Muslim law".(Hassan,2002)

To distinguish the permissible and impermissible uncertainty and risk in a contract, Ibn Taymiyya argues that every type of risk or uncertainty is not prohibited in Islam. Only when risk is a tool or mediator to make one party profits at the expense of the other, it becomes gharar. Ibn Taymiyya makes this clear:

"It is well known that Allah and his Messenger did not prohibit every kind of risk. Nor all kinds of transactions that involve the possibility of gain or loss or neutrality are prohibited. What is prohibited among such kinds is eating wealth for nothing, even if there were no risk, not that risk as such is prohibited. Risk falls into two categories: commercial risk, where one would buy a commodity in order to sell it for profit, this risk is necessary for merchants, and although one

might occasionally lose, but this is the nature of commerce. The other type of risk is that of gambling, which implies eating wealth for nothing. This is what Allah and his Messenger have prohibited.”(Suwailem,2000)

As a result, eating the other party’s wealth for nothing in a contract is the reason for prohibition of risk not risk by itself. According to the Ibn Taymiyya we have two types of risks as follow:

1. Risk associated with normal economic transactions, i.e. value-adding and wealth-creating activities.
2. Risk associated with “eating wealth for nothing”, where no net additional wealth is created.

The first type is inevitable for the society well-being and acceptable the second one is stipulation and so prohibited. By this definition if we just define risk as an unnecessary exposure to the danger of loss, then it becomes clear from an Islamic perspective that risk is not desirable. Islamic principles clearly call for the preservation and development of wealth. Exposing wealth to loss cannot be a goal in itself. In fact protection of wealth is desirable for rational agents. This is the same position towards hardship. Although many Islamic deeds involve hardship of some sort, such hardship is not desirable in itself. According to Ibn Taymiyya (summarized by Suwailem):

“Reward of deeds is based on their usefulness, not their hardness. A good deed might be hard, but its goodness is for a reason other than being hard. Reward may be larger if involved hardship is larger, not because hardship is the objective of the deed, but because the deed implies hardship.”

In other words, hardship is secondary in determining the value of the deed. The primary factor is its usefulness. Accordingly, value would reflect its hardness, but only to the extent that it is useful. The same reasoning applies to risk, as it is a form of hardship.

Risk as such is not desirable, although it is intrinsic to virtually all economic activities. However, the value of an economic decision is not determined *primarily* because of risks it involves; rather, it is determined according to wealth it creates and value it adds. Risk is reflected in value accordingly, but not that risk in its own determines the value. Whenever taking risk is praised it is because of the added value and created wealth that follows, not that risk as such is desirable. This represents a vital difference between legitimate and undesirable risk: “Risk is legitimate when it is necessary for value creating. But when no value is added, it is a form of gambling.”(Suwailem,2000)

There is an important legal maxim which has a key role to measure gharar and understand Islamic risk management. It is: « liability justifies utility or return »; both the prohibition of riba and gharar are related to this maxim. This maxim could be justified by the concept of justice ; which as mentioned in the chapter

2 according to the Quran is the main target of the Allah's messengers (Quran, 57:25) ; in Islam and the necessity of balance between rights and obligations, liability and outcome, and risk and return. This maxim relates the violation of two fundamental properties of a normal exchange to the two classes of gharar transactions as Suwailem states occurring any of these two conditions will make the transaction gharar and illegal:

1. When the utility exchanged is uncertain at the time of contracting, while its liability is assumed by the buyer. Examples include sale of a lost camel or runaway slave, pebble sale, and sale of diver's or hunter's hit. The utility of exchanged asset in such sales is uncertain at the time of contracting, but the buyer bears the liability the moment he pays the expected price. Rights and obligations of each party are imbalanced as ex post value of the asset diverges from expected price.(hedging)
2. When the connection between utility and liability is broken, so the owner becomes entitled to the utility without assuming its liability, which is another form of imbalance between rights and obligations. An example is the commercial insurance contract, whereby liability of insured asset is exchanged for a premium. The insured party (policy holder) enjoys the asset's utility without assuming its liability, thus his rights and obligations are unbalanced.(insuring)

By deducing from this legal maxim and giving some real examples Suwailem tries to measure gharar as a zero-sum game: "Therefore, the shari'ah based measure of gharar, as implied by "liability justifies return" maxim, neatly coincides with the zero-sum measure, as well as with contemporary finance."

3.3.3 Zero-sum Game

3.3.3.1 Introduction

This is a game in which whatever one party gains is what the other loses. In the cases that we study in this paper we are more interested in the general case where a player's payoffs cannot *increase* without *reducing* the other player's payoffs. Such games are called "strictly competitive games," where preferences of each party are diametrically opposed to the others, so one party can win only if the other loses. From the perspective of decision theory, utility numbers have meaning only as representations of individuals' preferences. Thus, if we change the utility functions in a game model in such a way that the underlying preferences represented by these functions is unchanged, then the new game model must be equivalent to the old game model. Game theorists, show that, from a strategic point of view, any two-person strictly competitive game is equivalent to a two-person zero-sum game, so that the former can always be expressed in a zero-sum form(Friedman, 1990, pp. 79-80; Binmore, 1994, pp. 276-277). From now on, we use the term "zero-sum game" to indicate strictly competitive games, without implying that

utilities of the two parties are identical.

Two utility functions $u(\cdot)$ and $\hat{u}(\cdot)$ are equivalent iff they differ by a linear transformation of the form $\hat{u}(\cdot) = Au(\cdot) + B$, for some constants $A > 0$ and B . So we say that two games in strategic form are fully equivalent iff, for every player I , there exist numbers A_i and B_i such that $A_i > 0$ and

$$\hat{u}_i(c) = A_i u_i(c) + B_i, \quad \forall c \in C$$

Other definitions of equivalence have been proposed for strategic form games. One weaker definition of equivalence (under which more pairs of games are equivalent) is called *best-response equivalence*. It is based on the narrower view that a player's utility function serves only to characterize how he would choose his strategy once his beliefs about the other players' behavior are specified.

3.3.3.2 Zero-sum game and Attitude toward Risk

The two classes of gharar mentioned above can be inferred from the attitude of two parties involved in exchange towards risk. Generally speaking, an agent might be risk-averse, risk neutral, or risk taker.

A risk-averse consumer prefers to have the expected value of his wealth rather than face the gamble (H.R. Varian, 2010). The risk-averse consumer has a concave utility function—its slope gets flatter as wealth is increased. A risk lover or a risk taker prefers a random distribution of his wealth to its expected value. The risk-loving person has a convex utility function—its slope gets steeper as wealth increases. A risk neutral person does not care about the riskiness of his wealth at all because the expected utility of wealth is the utility of its expected value.

Since, in zero-sum games, what one wins is what the other loses, the payoff function of one player is the negative of the other, so in the strictly competitive games both players could not be risk-averse. Generally if one party is risk averse, so that his payoff function is concave, the other must be risk taker, and his payoff function will be convex. (The negative of a concave function is convex.) If one is risk neutral (with a linear payoff function) the other must also be risk neutral. (The negative of a linear function is also linear.) So either both players are risk neutral, or one is risk-averse while the other is risk taker. We know from St. Petersburg paradox that risk neutrality is unlikely to be a good assumption about people's attitude in general.

3.3.3.3 Gambling and zero-sum game

Gambling is the classical example of a zero-sum game of chance in economics books. In shari'ah, gambling or maysir is prohibited because of gharar and getting the wealth of others for nothing by almost all the scholars and schools of law. In zero-sum games like gambling-for example Poker- assuming risk neutrality may not be too bad an approximation when the sums of money that may change hands lie in a restricted range. (Binmore, 1992)

3.3.4 Measuring Risk Aversion

Let \tilde{x} be a stochastic variable, or a lottery defined by $[x_1, \dots, x_s; \pi_1, \dots, \pi_s]$ so that

$$U(\tilde{x}) = \sum_{s=1}^s \pi_s u(x_s) = Eu(\tilde{x})$$

Concavity of $u(\cdot)$ represents risk aversion. On the other hand, risk-loving is represented by the convexity of $u(\cdot)$. Faced with a lottery ticket that yields x_1 with probability 0.5 and x_2 with probability 0.5, the agent prefers to this lottery a certain return equal to the mean of the returns from the ticket (see figure 3). We define the certainty equivalent of \tilde{x} , $EC_{\tilde{x}}$ as the deterministic return that the agent views as equivalent to the stochastic variable, that is

$$u(EC_{\tilde{x}}) = Eu(\tilde{x})$$

Then we can define the risk premium associated with the stochastic variable \tilde{x} , denoted $\rho_{\tilde{x}}$, by.

$$u(E(\tilde{x}) - \rho_{\tilde{x}}) = Eu(\tilde{x}).$$

The risk premium is the maximum amount by which the agent is willing to decrease the expected return from the lottery ticket to have a sure return.

Risk aversion is related to the concavity of the agent's utility function, but we need some measure of risk aversion. Let $\tilde{x} = \bar{x} + \tilde{\varepsilon}$ be a stochastic variable with mean \bar{x} and variance $\sigma_{\tilde{\varepsilon}}^2$ where the higher order moments of \tilde{x} are negligible compared to $\sigma_{\tilde{\varepsilon}}^2$ ($\tilde{\varepsilon}$ is small). Furthermore assume that $u(\cdot)$ is twice differentiable, concave, and strictly increasing. The risk premium at the level of wealth \bar{x} , $\rho(\bar{x} + \tilde{\varepsilon})$ is the certainty equivalent that the agent finds indifferent to $\tilde{\varepsilon}$, that is,

$$Eu(\tilde{x}) = Eu(\bar{x} + \tilde{\varepsilon}) = u[\bar{x} - \rho(\bar{x}, \tilde{\varepsilon})].$$

For any value ε of $\tilde{\varepsilon}$,

$$u(\bar{x}+\varepsilon) \approx u(\bar{x}) + \varepsilon u'(\bar{x}) + \frac{\varepsilon^2}{2} u''(\bar{x})$$

On the other hand,

$$u[\bar{x} - \rho(\bar{x}, \tilde{\varepsilon})] \approx u(\bar{x}) - \rho(\bar{x}, \tilde{\varepsilon}) u'(\bar{x})$$

Because $\rho(\bar{x}, \tilde{\varepsilon})$ is small due to $\tilde{\varepsilon}$ being small, therefore

$$\rho(\bar{x}, \tilde{\varepsilon}) = -\frac{1}{2} \sigma_{\tilde{\varepsilon}}^2 \frac{u''(\bar{x})}{u'(\bar{x})}$$

The *coefficient of absolute risk aversion* at the level of wealth \bar{x} , $r_a(\bar{x}) = -\frac{u''(\bar{x})}{u'(\bar{x})}$, is twice the risk premium per unit of variance for small risk. This local measure of risk aversion is better than either the second derivative $u''(\cdot)$ or than the curvature $u''/(1 + u')_{3/2}$ as both of these are affected by increasing affine transformations of $u(\cdot)$. The following important theorem relates this local measure of risk to a global one:

THEOREM 1 (Pratt 1964) Given two utility functions u^1 and u^2 that are twice differentiable, strictly concave, and increasing, the following conditions are equivalent:

- $r_a^1(\bar{x}) \geq r_a^2(\bar{x})$
- $\rho^1(\bar{x}, \tilde{\varepsilon}) \geq \rho^2(\bar{x}, \tilde{\varepsilon})$ for any small $\tilde{\varepsilon}$,
- $u^1 \circ (u^2)^{-1}(\cdot)$ concave, that is, u^1 is more concave than u^2

Taken together, these conditions indicate unambiguously that agent 1 with utility function u^1 is more risk averse than agent 2 with utility function u^2 .

3.3.5 Summary and conclusion

As the Islamic approach to the risk is firmly attached to the definition of gharar, in this section we tried to find an exact definition of gharar to help us to find an economic rationale for it. Based on a bunch of definitions and perception about gharar and risk extracted from Quran, hadith and commentated by the classical jurists; it is almost impossible to find an exact definition for gharar accepted through a consensus. Different schools of law and different scholars have different perception and interpretation about it. But still among these pool of arguments gharar could be categorized into some main groups. One classification of gharar is the cause for nonexistence and ignorance from one position and causing for enmity and hatred from the other position. In the first position, which could be translated to the economic language as “*asymmetric information*”, prohibition could be justified by the necessity of mutual consent

which is absent in case of ignorance or nonexistence. From other point of view the asymmetric information would cause inequality and might end in injustice. In the second position which is sort of gambling or speculative transaction, the gharar will be equal to a zero-sum game that is both in efficient(because has no addition to the total welfare of the society), and unfair. Moreover, when one party wins and the other loses; it can make hatred and enmity among the winner and loser. Another important criterion is the balance between risk and outcome. The party who has the liability is eligible to enjoy the return and it is unfair that a party suffers both liability and risk and the other party enjoys the return with no risk (as in riba).

So the notion of gharar in a modern approach to the Islamic risk management could be firmly related to the economic notions and variables such as Pareto efficiency, commutative justice, zero-sum game, and attitude toward risk.

Since there is no consensus about the rationale behind any of these concepts; in the rest of this chapter first we try to analyze a typical gharar case and compare it with ja'alah then we make a conclusion what to be analyzed in the shari'ah nominated and modern contracts which are considered to be gharar or are vastly controversial among Muslim scholars. We will use in any case a Game Theoretic approach or other proper tools.

3.4 Typical Gharar Example: The lost camel

3.4.1 Introduction

A typical example of gharar is that of Imam Malik-the founder of Maliki school of law- states in *muwatta'*: "Included in *gharar* and risky transactions is the case in which a man whose camel is lost, or his slave has escaped, the price of which is (say) fifty dinar, so he would be told by another man: I will buy it for twenty dinars. Thus if the buyer finds it, the seller loses thirty dinars; if not, the buyer loses twenty dinars"

Again here we remind Ibn Taymiyya's clear explanation about this case from Suwailem (2000):

"*Gharar* describes things with unknown fate. Selling such things is *maysir* and gambling. This is because when a slave runs away, or a camel or a horse is lost, his owner would sell it conditional on risk, so the buyer pays much less than its worth. If he gets it, the seller would complain: you have 'gambled' me and got the good with a low price. If not, the buyer would complain: you've gambled me and got the price I paid for nothing. This will lead to the undesired consequences of *maysir*, which is hatred and enmity, besides getting something for nothing, which is a sort of injustice. So *gharar* exchange implies injustice, enmity and hatred."

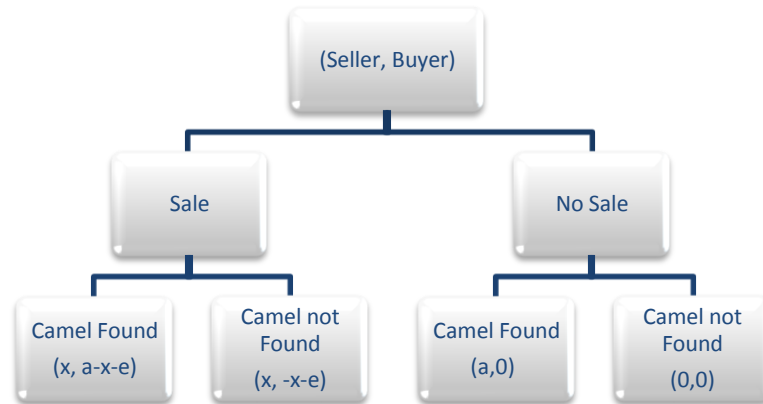


Figure 3.3 A typical gharar transaction

3.4.2 Model

In this section we try to make a game-theoretic model of this transaction to find out the payoff structure and the best response and finally the utility and risk attitude of both parties.

Notation

Let

a : The lost thing's market price

x : The contract price ($a > x$)

e : Agent's cost ($e < x$)

0 : Chance node

1 : Seller node

2 : Buyer node

s : The probability of success when agent makes effort ($s = f(x)$), $0 \leq s \leq 1$

r : The probability of success when no deal ($r < s$), $0 \leq r \leq 1$

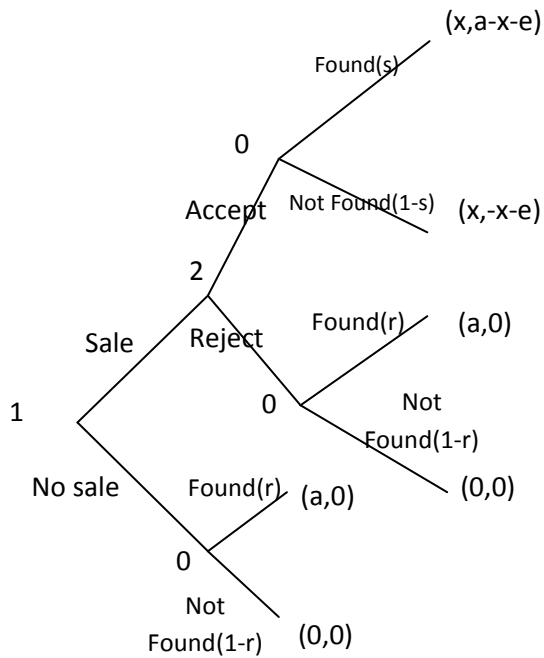


Figure 3.4 Extensive form of a typical gharar game

Table 3.2 Strategic form of a typical gharar game

	<u>Found</u>		<u>Not Found</u>	
<u>Seller</u>	<u>Buyer</u>			
	<u>Accept</u>	<u>Reject</u>	<u>Accept</u>	<u>Reject</u>
Sale	$sx, s(a-x-e)$	$ra, 0$	$(1-s)x, (1-s)(-x-e)$	$0, 0$
No Sale	$ra, 0$	$ra, 0$	$0, 0$	$0, 0$

3.4.3 Strategic Form and Equilibrium

For the seller, sale is better than no sale if the camel is not found. If the camel is found, then he will sell iff $sx > ra$ and will not sell otherwise so for him the minimum selling price is $x = ra/s$. The buyer will suffer a loss by accepting to buy, if the camel is not found. In case the camel is found he will have a profit if $a - x - e > 0$ or $x < a - e$, so regarding the condition for the buyer the selling price must be in this range:

$$ra/s < x < a - e$$

Now we will have a look at the payoff of parties in case of sale for both found and not found cases

The sum of payoffs for both parties in case of sale and accept would be:

$$sx+s(a-x-e)=sa-se$$

By just looking at the payoff of any party clearly it opposes the other one by selecting x, so it is a competitive game

In case of sale and accept and not found, the seller is indemnified from the loss in the cost of the buyer's risk. The sum of the pay offs is as follow: $(1-s)x+ (1-s)(-x-e)=- (1-s)(e)$

3.4.4 Expected Utility and Risk aversion

At the beginning the seller utility is 0. Then if he deals and the agent accept the utility of the seller would be as follow now we would like to find the maximum of this amount:

$$\max su(x)$$

taking the derivative with respect to x and setting it equal to zero, we find

$$s'(u(x))-su'(x)=0$$

assuming that s is a linear function of x : $s=cx$ subjected to: $1 \geq s \geq 0$ and $e < x < a$

$$cu(x)-cxu'(x)=0 \rightarrow u(x) =xu'(x)$$

with another derivation respect to x:

$$u'(x)=u'(x)+xu''(x)$$

$$r_{owner}(x) = -\frac{u''}{u'} = \frac{2}{x}$$

The same method and similar calculation for the buyer will result in:

$$r_{agent}(x) = -\frac{u''}{u'} = -\frac{2}{x}$$

$$r_{buyer}(x) < r_{owner}(x)$$

So is more risk averse than owner.

Because the Arrow-Pratt measure of risk aversion equals to a negative amount for $x > 0$ then we can conclude that the buyer should be risk-taker to play the game of deal and because the r is positive for the seller he should be risk-averse.

3.5 Ja'alah Contract

3.5.1 Introduction

Ja'alah is a contract in which an owner hires an agent for performing a certain task, e.g. searching for a lost camel that was described in the former part. If the task is successful (the camel is found), the owner pays the agent an agreed upon wage. If not, the agent gets nothing. The majority of scholars accept *ja'alah*, while the Hanafi school considers it as *gharar*. To analyze *ja'alah* within the framework of exchange, we can view it as a labor contract (*ijarah*) whereby wage payment is conditioned on successful performance. That is, *ja'alah* is a conditional *ijarah*, as scholars point out.

Let us start from the successful outcome. If the camel is found, the owner will pay the agent a certain amount, x , depending on how much the owner values the agent's labor, e . Valuation reasonably depends on the contribution of search to probability of success. So if search improves likelihood of success which is normally r and after the contract it changes to s .

3.5.2 Ja'alah model

a : lost thing's market price

x : Ja'alah contract price ($a > x$)

e : agent's cost ($e < x$)

0 : chance node

1 : owner node

2 : agent node

s : probability of success when agent makes effort ($s = f(x)$), $0 \leq s \leq 1$

r : probability of success when no deal ($r < s$), $0 \leq r \leq 1$

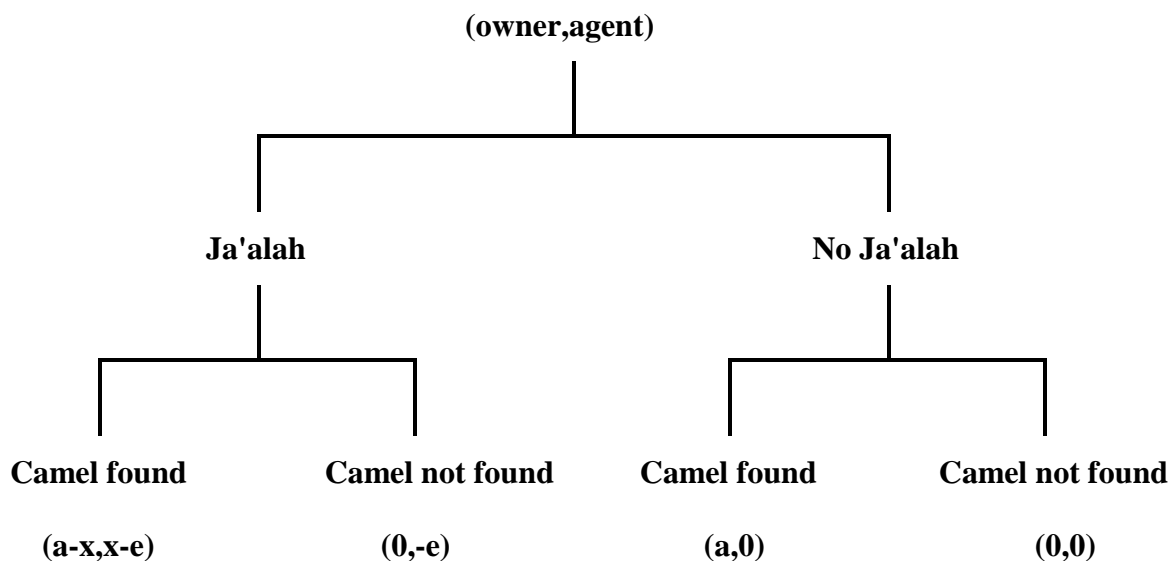


Figure 3.5 Ja'alah transaction

3.5.3 The extensive form

First we model it by a sequential game. The owner starts the game with selecting either to deal or not to deal. If his selection is not to deal the agent has no interest and so the game will end in found or not found. If he plays deal, the agent than may accept it or reject it. In any case two situations may happen found or not found.

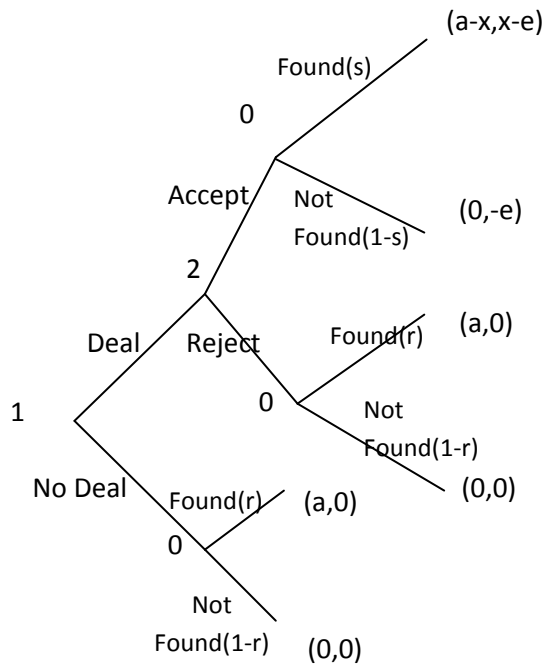


Figure 3.6 Extensive form of ja'alah

Table 3.3 Strategic form of ja'alah

	<u>Found</u>		<u>Not Found</u>	
<u>Owner</u>	<u>Agent</u>			
	<u>Accept</u>	<u>Reject</u>	<u>Accept</u>	<u>Reject</u>
Deal	$s(a-x), s(x-e)$	$ra, 0$	$0, -(1-s)e$	$0, 0$
No Deal	$ra, 0$	$ra, 0$	$0, 0$	$0, 0$

3.5.4 Strategic form of ja'alah

To Find the equilibrium, by looking at the strategic form table we find out that the owner is indifferent between deal and no deal in all cases except Found-Accept. In this case if he plays deal he will receive $s(a-x)$ and if he plays no deal he will receive ra . Thus, he deals for sure if:

$$s(a-x) > ra \text{ or } x < a(s-r)/s$$

So he will play deal with a price equal or smaller than above. But in the other hand s also depends on the effort that the agent will make if he accepts the contract.

For the agent, he prefers to reject in case of not found clearly but in case of found he will accept if:

$$s(x-e) > 0 \rightarrow x > e$$

but if he offers a higher price than owner's min expected payoff then he will reject so he should select an amount which is smaller than $a(s-r)/s$ thus:

$$e < x < a(s-r)/s$$

So the main challenge here is how to set x by both parties.

To calculate the payoff in the deal case,

1. first we consider in the "found" case:

for the owner: $s(a-x)$

for the agent: $s(x-e)$

the sum of payoffs: $s(a-x) + s(x-e) = s(a-e)$

The payoff of each party depends on the x . If they select it in the mentioned range so both may profit from this deal. About the sum of the payoffs, if e increase s should increase but on the contrary the parenthesis amount will decrease so the effort made by the agent is not clear. To make a conclusion we make an assumption that s will change linearly by e . It means that if $e=0$ then $s=0$ and if $e=x$ then $s=1$. In this case the total payoff would change from 0 in case of $e=0$ to $a-x$ in case of $e=x$ which is the maximum amount and so we might have had a non-zero sum cooperative game.

2. Second in the "not found" case:

for the owner: 0

for the agent: $-(1-s)e$

sum of payoffs: $-(1-s)e$

In any situation the payoff of agent will be equal to or less than zero, while that of owner is always zero.

3.5.5 Expected Utility and Risk aversion

At the beginning the owner utility is 0. Then if he deals and the agent accepts the utility of the owner would be:

$$\max su(a-x)$$

taking the derivative with respect to x and setting it equal to zero, we find

$$s'(u(a-x))-su'(a-x)=0$$

assuming that s is a linear function of x : $s=cx$ subjected to: $l \geq s \geq 0$ and $e < x < a$

$$cu(a-x)-cxu'(a-x)=0 \rightarrow u(a-x) = xu'(a-x)$$

with another derivation respect to x:

$$-u'(a-x)=u'(a-x)-xu''(a-x)$$

$$r_{owner}(x) = -\frac{u''}{u'} = -\frac{2}{x}$$

The same method and similar calculation for the agent will result in:

$$r_{agent}(x) = -\frac{u''}{u'} = +\frac{2}{x}$$

$$r_{agent}(x) > r_{owner}(x)$$

So agent is more risk-averse than owner.

Because the Arrow-Pratt measure of risk aversion equals to a negative amount for $x > 0$ then we can conclude that the owner should be risk-taker to play the game of deal and because the r is positive for the agent he should be risk-averse.

3.6 The comparison of cases

In the table.1 a summary of both cases is depicted. As mentioned before the main difference is the risk sharing in case that the subject matter is not found. First of all in both cases the risk is unavoidable. A subject matter is lost and the success and failure chance is not set by any party. By selecting a deal by owner (seller) and following acceptance by the agent the probability will change from r to $s(\geq r)$. Secondly we can notice that in both cases if they deal and the subject matter is found then their interests oppose each other by different sign of x but both can expect profit even in this case. On the other hand in case of not found in sale case the seller is indemnified and all the risk is tolerated by the buyer.

The total payoff in both type of contract is the same. But it is useful to consider when a deal is more useful for society. The answer is when the probability of win in case of deal minus costs is greater than probability of win in no deal situation or $s_a - e > r_a$.

The attitude toward the risk shows a complete change in both cases. In case of sale the owner is risk averse and the agent is risk taker while in *ja'alah* is vice versa.

In the light of this discussion we might understand the different positions of *fiqh* scholars on *ja'alah*. In sale contract most famous scholars mentioned it as a typical *gharar* case. But the *ja'alah* case is more controversial. The Hanafi school considers *ja'alah* as *gharar*, while the other three schools (Maliki, Shafi'i, and Hanbali) consider it permissible. According to these findings the main difference is the risk sharing in case of lose. The more distributed risk sharing the more it could be a tolerable risk and the less distribution the more it could be a *gharar*. So we can conclude an objective method to distinguish a *gharar* case.

1. If there is a win-win game or in other words if both parties are risk-averse it is not a *gharar* case.
2. If there is a win-lose situation in a game, if one party is risk-taker then he should not burden all risks to guarantee the winner's profit.
3. Could we conclude that Muslim society is recommended to be risk-averse in economic ?

This measure is more objective than measure introduced by Suwailem and therefore is rich enough to allow for different *fiqh* opinions, yet informative enough to discriminate among these positions. The third claim is a little bit ambitious and so needs much more justification in all cases including prohibition in Islamic economics. To validate this assumption we need to study some more cases in the following sections.

3.7 Options and *Bai al-Urbun*

3.7.1 Introduction

An option on a certain asset is either the right, but not the obligation, to buy the asset (a call option), or the right to sell the asset (a put option) at a predetermined price and within some predetermined time period upon payment of a stated fee (Ingersoll, 1994). Options bear a strong family resemblance to insurance policies and are often bought and sold for the same reasons (Francis, 1991).

Options, as independent financial contracts that are traded for a price, have no clear-cut parallel in the classical Islamic theory of contracting. Some contemporary scholars, such as, Abu Sulayman (1992), Kamali(1995), who have attempted an evaluation of such contracts, have used a generic term, *al-*

ikhtiyarat, a variant of the term *al-khiyar*. which normally is the classical *fiqh* concept for various kinds of embedded options. The majority view of shari'ah scholars is that an option is a promise to sell or purchase a thing at a specific price within a stipulated time and such a promise cannot be the subject matter of a sale or purchase (Usmani, 1996). As the resolution of the Islamic fiqh Academy, Jeddah asserts²⁴:

“Option contracts as currently applied in the world financial markets are new types of contracts which do not come under any one of the shari'ah nominate contracts. Since the subject of the contract is neither a sum of money nor a utility or a financial right which may be waived, the contract is not permissible in shari'ah.”

A few scholars who prefer to include any kind of benefit or *manfaa* in the definition of *maal* consider options involve a benefit (a right without obligation) for the purchaser so trading of such benefit is

²⁴ Resolution No.65/1/7 on Financial Markets of the Council of the Islamic Fiqh Academy, Jeddah, Saudi Arabia, adopted by the Seventh Session of the Council on 9-14 May 1992.

Table 3.4 Summary of Analysis: Gharar and Ja'alah

	Deal and found		Deal and not found		Sum of payoffs				Risk Attitude		Shari'ah Ruling
	Owner s	Agent s	Owner 1-s	Agent 1-s	Deal		No Deal		owner	agent	
					Found	Not Found	Found	Not Found			
Sale	x	a-x-e	x	-x-e	s(a-e)	-(1-s)e	ra	0	Averse	Taker	Consider as a typical gharar case
Ja'alah	a-x	x-e	0	-e	s(a-e)	-(1-s)e	ra	0	Taker	Averse	Hanafi school considers <i>ja'alah</i> as <i>gharar</i> , the other schools (Maliki, Shafi'i, and Hanbali) consider it permissible.
conclusion	Both cases Strictly competitive with opposed payoffs		In gharar sale owner is indemnified by agent(buyer) in ja'alah agent only suffers his effort costs		Both are the same so we may conclude that prohibition of gharar does not consider Pareto efficiency				In both cases the attitude of the parties oppose but by prohibition of sale we may conclude that the more distributed the risk the more acceptable from the gharar point of view		

observed to be permissible. The Islamic Investment Study Group of the Securities Exchange Commission, Malaysia in its report finds call warrants being acceptable because it “has the characteristics of an asset which satisfies the concept of “*haqq mali*” and “*haqq taalluq*” which is transferable based on the majority of fuqahas views other than Hanafi. Therefore this right can be classified as an asset and can therefore be traded. The famous fuqaha can also accept this right as an asset on the basis that CW is something you can possess and benefit from.”(Azmi Ahmad, 1996) The views of the modern shi’ah scholars seem to uphold this view. According to a fatwa of Ayatollah Sistani, one can transfer his rights to any one, either by getting money for it, or for free (Obeidullah, 2005).

Some scholars have also attempted to justify permissibility to call options by drawing a parallel with *bai al-urbun*. Urbun refers to a sale in which the buyer deposits earnest money with the seller as a part payment of the price in advance but agrees that if he fails to ratify the contract he will forfeit the deposit money which the seller can keep (Obeidullah, 2005). However, all the schools of fiqh except the Hanbali and Jafari school consider urbun as a gharar sale because of the unsuccessful outcome. If the transaction is not concluded, the buyer loses the down payment paid to the seller for nothing. They consider it a sort of “eating wealth of others for nothing”. The Hanbali position can be rationalized the same way ja’alah is (Suwailem, 2000).

3.7.2 Urbun Model

Let

a : agreed price

x : earnest money to guarantee to buy the commodity in *a* in the second period

e : price change in the second period. It is assumed to be equal for the up and down markets

0 : chance node

1 : seller node

2 : buyer node

p : probability of up price in the second period $0 \leq p \leq 1$

At the beginning the seller can select to offer or not offer to sell a commodity in market price of \underline{a} to buyer. If the seller offers, the buyer can Accept or Reject. If he rejects there is no deal, if he accepts then he pays x as earnest money to the seller. They agree that if in the second period the buyer buys the commodity then earnest money is part of selling money, if he rejects the earnest money is gone for the benefit of seller. We can model it as a game with two players, buyer and seller, and two strategies for the

seller, offer and not offer, and four strategies for the buyer, first to accept or reject the seller's offer and second after passing a determined time t he can use or not use his option so if he use there is a Deal and if not use there is No Deal. The payoffs are denoted in Figure 3.7- the extensive form of the game. The payoffs of seller comes first.

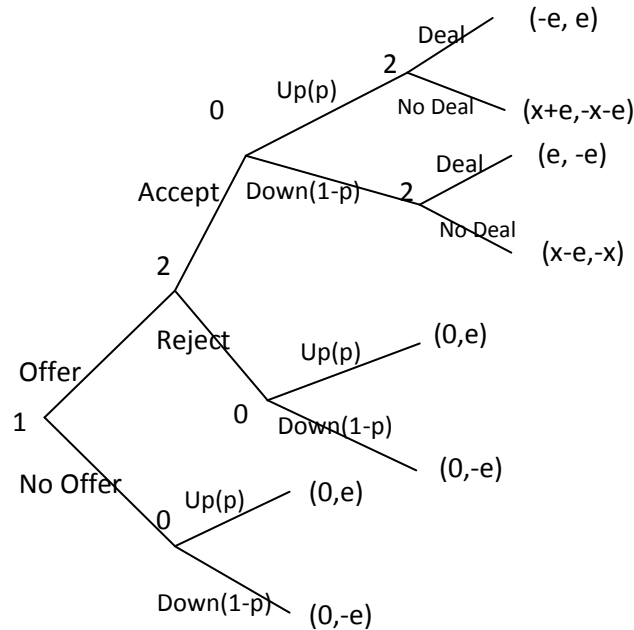


Figure 3.7 Extensive form of urbun

The strategic form is shown in the Table 3.2. As we can see the possibility of a higher market price is p and a lower one is $1-p$.

Table 3.5 Strategic form of urbun

	<u>Up(p)</u>				<u>Down(1-p)</u>			
<u>Seller</u>	<u>Buyer</u>							
	<u>Accept</u>		<u>Reject</u>		<u>Accept</u>		<u>Reject</u>	
	<u>Deal</u>	<u>No Deal</u>	<u>Deal</u>	<u>No Deal</u>	<u>Deal</u>	<u>No Deal</u>	<u>Deal</u>	<u>No Deal</u>
<u>Offer</u>	$-pe, pe$	$p(x+e), -p(x+e)$	$pe, 0$	$pe, 0$	$(1-p)e, -(1-p)e$	$(1-p)(x-e), -(1-p)(x-e)$	$-(1-p)e, 0$	$-(1-p)e, 0$
<u>No Offer</u>	$pe, 0$	$pe, 0$	$pe, 0$	$pe, 0$	$-(1-p)e, 0$	$-(1-p)e, 0$	$-(1-p)e, 0$	$-(1-p)e, 0$

3.7.3 Discussion

The best strategy completely depends on the up or high market which is a probability function depending on lots of factors which is out of the control of both parties. For the buyer for example if he accepts and

there is a high market then the best response for him is to select Deal and if he faces a down market his best response depends on the amount of x and e if $x > e$ he will play No Deal but if $x < e$ he will play Deal and if $x = e$ he is indifferent to deal or not do deal.

For the seller if he offers and the buyer accepts in case of a high market he will suffer a loss equal to pe because buyer will play Deal. But if the buyer rejects he will get a profit equal to pe . If the buyer accepts, in case of a down market his payoff depends on x and e same as mentioned before for the buyer. It is very clear that playing Offer has a higher payoff for him in case of an up market and No Offer has a higher payoff for him in case of a low market.

This is very similar to the call option. The main difference is in call option, the option premium is not included in the final price. In this way the risk of buyer will increase.

It is a zero-sum game in all cases that there is Offer then Accept and Deal.

From the risk aversion point of view, the buyer is risk-averse and the seller is risk taker. The buyer who is risk-averse insures himself by paying a premium to buy in the price a and cover the risk of price fluctuation.

There is no difference point among call option and urbun from the zero-sum point of view because in both cases we have a zero-sum game and in both cases the money paid as premium is gone in case of not using the option and it is “eating money for nothing” and causes injustice and enmity and could be regarded as gharar.

3.8 Insurance and Takaful

3.8.1 Conventional Insurance

Even the concept and utilization of insurance returns back to hundreds years ago, it is only in the last half century that we have come to a comprehensive and deep understanding of this most vital, yet complex, economic institution. Adam Smith, known as the founder of economics, in his famous book-Wealth of Nations-predictably has something about insurance he captures in two sentences the essential ingredients for such a theory, risk aversion, diversification and the need for capital.

“The trade of insurance gives great security to the fortunes of private people, and, by dividing among a great many that loss which would ruin an individual, makes it fall light and easy upon the whole society. In order to give this security, however, it is necessary that the insurers should have a very large capital. (Adam Smith, page 619)”.

Insurance is a means that reduces uncertainty with respect to the future. The following definitions from the literature can denote that the controversy about the definition and application of insurance is not solely among Muslim scholars.

- Insurance is the exchange of an uncertain loss of unknown magnitude for a small and known loss (the premium) [translated from Hax by Zweifel,P. et al, (2012)].
- Insurance is the exchange of money now for money payable contingent on the occurrence of certain events (Arrow, 1965, 45).

Admittedly, the first definition is too vast in one hand since it encompasses all kinds of loss prevention activities while on the other hand it is too narrow since it excludes mutual insurance. At least in some countries, the law obliges members of mutual insurance and *takaful* associations to pay additional contributions in case of a major loss, which contradicts the clause ‘small and known’. The second definition is also problematic because it fails to distinguish insurance from games and lotteries. However, one could counter this criticism by adding the differentiation that games create uncertainty (through a bet, say), while insurance aims at reducing an already existing uncertainty. (Zweifel,P. et al ,2012)

Based on different understanding about insurance, there are different approaches about it among cotemporary Muslim jurists. Though many jurists reject conventional insurance, views among Muslim scholars differ, on insurance no less than on other subjects. Some reject conventional insurance in no uncertain terms. Sheikh Omar Bakri Muhammad, who served for a number of years as principal lecturer at the London School of Shari’ah, called it ‘just one of the filthy and rotten schemes of the Capitalist system’ (Bakri Muhammad). Some believe that it is tainted with *riba* and *gharar* and is therefore to be rejected. Maududi (1999, p. 288) mentions two basic objections to conventional insurance. First, premiums are to a large part invested in interest-bearing assets. Second, paying premiums in order to receive a sum of money in the event of death or a mishap must be seen as a sort of gamble and therefore *gharar* is involved. Modern scholars use similar arguments (El-Gamal,2006).

Conventional life insurance was already declared unacceptable in 1903 by some prominent Islamic scholars in the Arab countries. This was followed in 1978 by a resolution of the Fiqh Council of the World Muslim League and in 1985 by one from the Fiqh Council of the Organization of the Islamic Conference declaring that conventional insurance as presently practiced is *haram* (Fisher, 2001).Others accept that if Islamic forms of insurance are not available Muslims may buy conventional insurance, following the principle of *darura*, or necessity. Many Muslim jurists accept the principle of *darura* in case insurance is enforced by law.

A much more positive attitude, however, can also be found, even among highly respected Islamic scholars (Visser, 2009). The Syrian Islamic scholar Professor Mustafa Al-Zarqa (1904–99), for instance, argued that insurance companies gather together the risks of a large number of people and redistribute them in a manner that makes them bearable, so through the law of large numbers there is very little uncertainty. This is a form of lawful cooperation that is compatible with the general objectives of the *shari’ah*. Taking

the theory of probability into consideration, a conventional insurance contract does not contain any unbearable amount of ambiguity or undue uncertainty. In this view all kinds of insurance, including life, health and property insurance, are permissible. The usual conditions have to be fulfilled, of course. The contract must not contain any *riba* element and the object of insurance must be permissible in the *shari'ah*. A casino, for instance, would not be a legitimate object to insure. Al-Zarqa is not alone in his acceptance of conventional insurance another prominent Islamic scholar who supports this belief is Dr. Yusuf al-Qaradawi. He does not think that the concept of insurance conflicts with the teachings of Islam. However, he does find certain practices of conventional insurance in need of modification to bring it in line with Islamic teachings :

“Our observation that the modern form of insurance companies and their current practices are objectionable Islamically does not mean that Islam is against the concept of insurance itself; not in the least – it only opposes the means and methods. If other insurance practices are employed which do not conflict with Islamic forms of business transactions, Islam will welcome them(Qaradawi,2009)”.

Most *shari'ah* jurists also accept it according to the *darura* or *maslahah*(Motahari,1978).

Insurance is an exchange of liability for a premium. One party pays the other for assuming the risks of a certain asset, such that if it is damaged the owner is compensated for it. According to Arrow (1971, p. 134), insurance is an “exchange of money for money, not money for something which directly meets needs.” Since it is an exchange of the same counter value (money), the difference between the premium and compensation will be necessarily for the benefit of one party at the expense of the other. However, the contract is designed such that only chance decides who is the winner. If damage actually occurs, it will cost the insurance company more than the premium, and the company clearly is worse off, while the insured becomes better off than not contracting.

Anwar (1994) argues that insurance is blamed for *gharar* because of three type of uncertainty: (1) occurrence of indemnity, (2) amount accrued in case of indemnity, and (3) the timing of indemnity.

Suwailem (2000, 2006) believes that there is no outcome in insurance contract in which *both* parties become better off *ex post* than not contracting, and thus preferences of the two parties are in direct opposition. If damage does not occur, the insured loses the premium to the benefit of the insurance company. Suwailem (2000) says:

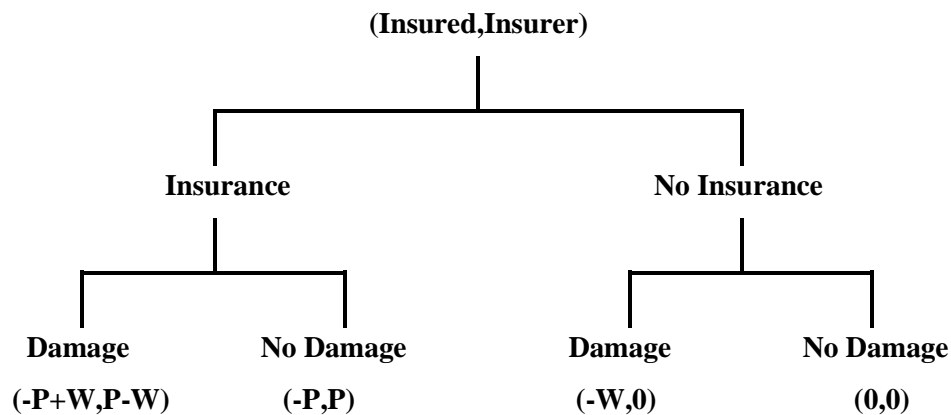


Figure 3.8 A simple model of bilateral insurance contracts

“It is not acceptable that a person says to another: guarantee (or insure) this good for me to a certain date, and I pay you so and so. This is because ... it is gambling and *gharar*. If the insurer knows that the good will be damaged he would not have accepted to insure it even for twice as much as he is paid. If the insured knows that the good will be safe he would have not accepted to insure it for even a dirham. Don't you see that if the good is not damaged the insurer would get the insured's money for nothing, while if it is damaged he becomes liable for its value for no ownership nor benefits he obtains?”

As we can see in the Figure 3.8, at the beginning the insured pays a premium equal to P to fully cover his wealth W . If the damage occurs, the insurance company should pay back the insurer W , so in case of event the insurance receives $P-W$ and the insured receives $-P+W$. If the damage does not occur, the insured loses his premium and the insurer gets it. So in both cases it is a zero-sum game in a bilateral insurance contract. What is ignored in this analyze made by Suwailem and some scholars; is to consider insurance as a bilateral contract among an insurer and an insured, which one is risk-averse (insured) and another risk-taker (insurer). But in reality and at the collective level because of the huge number of insured and law of large numbers, in case of loss the damages paid by insurer could be reimbursed by the premium paid by other policy-holders, so it could be a win-win game and insurer could be risk-neutral or risk-averse as well. But still the insured could be unsatisfied if no damage happens and it could be against the ex-post mutual consent in a contract and may end in hatred and enmity.

3.8.2 Mutual/Cooperative Insurance and Takaful

3.8.2.1 A Brief Definition, History of Takaful and Current Situation

The word 'takaful' derives from the verb *kafala*, meaning to help or to take care of one's needs (Billah 2007). Takaful then means guaranteeing each other, mutual guarantee (Mohammad Khan 2008, Askari et al 2009), solidarity and mutual assistance (Azman, 2010). The main concept of takaful is to pool resources to pay for events/losses that individually none of the members of the pool could afford. As mentioned before insurance is not a new concept in Islam. The origin of Islamic insurance started before the Islamic era which is based on "Aqilah" mutual co-operation (Klingmuller, 1969). Later such insurance transaction was steadily practiced and was even made mandatory in some cases during the period of the second Caliph. During the period of 14th to 17th century a Sufi Order of the Kazeeruniyya was very active especially in port cities in Malabar and in China. This order served as a kind of marine travel insurance company. In 19th century, a Hanafi lawyer Ibn Abidin (1784 -1836) was the first Islamic scholar who came up with the meaning, concept and legal entity of insurance contract. He was also the first person, who repeated the word insurance in the context of a legal constitution, and not in a customary practice (Klingmuller, 1969). In 1906, Muhammad Baqit Mufti of Egypt approved the idea of insurance which was explained by Ibn Abidin. In the period of twentieth century, a well-known Islamic jurist, Muhammad Abduh issued two 'fatwas' mentioning that an insurance transaction is like the transaction of 'al-mudaraba' financing technique, while the other was that a transaction which is similar to endowment or life insurance are legal (Mher et al, 2011). However, it was not until the late 1970s that takaful was put into practice. The Islamic Insurance Company of Sudan, established in 1979, seems to have been the pioneer. Following the success of the insurance company in Sudan, other *takaful* companies were established in Islamic and in non-Islamic countries. In Europe, outside Britain, success has so far been elusive. A Luxembourg-based firm, Takafol S.A., owned by Dar Al-Maal Al-Islami Trust, started offering Islamic insurance in 1983 and also made feeble attempts to market their products in other countries, including the Netherlands. In 2003 they were taken over by a Bahrain-based company, Solidarity Company BSC, which signaled the end of their activities as an insurer. Currently however, the European crisis has dampened the prospects of takaful making gains in that market. Increased solvency requirements add to the difficulty of launching takaful, given the risk structure of takaful and the favorable treatment of debt instruments in the capital adequacy calculation. It may also limit the appetite of European insurers for investing overseas, as the new rules apply at a group level as well as at insurer level (Ernst&Young, 2012).

In Pakistan first Islamic insurance company was established in 2004 and by 2011 there are three Islamic insurance companies working(Mahr, 2011). Securities and Exchange Commission Pakistan issued draft takaful rules proposing significant changes in the takaful regulatory framework. The changes shall allow conventional insurance companies to open takaful windows(Ernst&Young, 2012).The Arab Spring has hurt the attractiveness of populous Muslim markets such as Sudan and Tunisia for foreign investment. Specifically Libya and Egypt were considered as high potential growth markets. A number of projects have been postponed or at least affected due to the prevailing situation in these countries(ibid).The most developed takaful markets however are located in GCC countries and Malaysia. According to the World Takaful Report 2012, the Saudi Arabian Monetary Authority (SAMA) had directed all operators to align with the cooperative insurance model by year end 2011. Takaful operators had to adjust their internal accounting structures, remove the use of wakala and qard and amend product terms and conditions. Saudi is a huge takaful market and this shift away from the pure takaful model may have various affects on the industry which is already in need of regulatory harmonization. In South East Asia; Indonesia is emerging as a significant takaful market, overtaking several of the GCC countries in Gross Written Contributions (GWC). Along with Malaysia and Brunei, the other two important takaful markets in South East Asia, the region accounts for USD 2b in total GWC. With Saudi regulators disallowing the pure takaful model, the primary hub for takaful may well shift from the GCC to South East Asia.

Globally, takaful contributions grew by 19% in 2010, to US\$8.3b. Global Takaful contributions are expected to reach US\$12b by 2012that shows one of the fastest growing financial industries in the world (Figure 3.9).

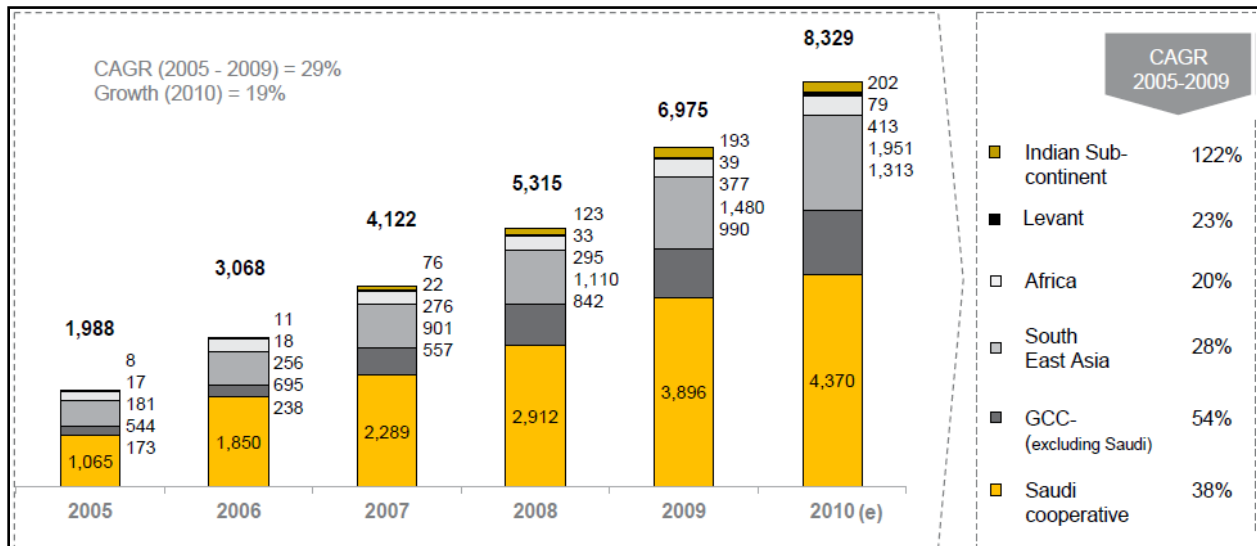


Figure 3.9 Global gross takaful contributions – including Saudi cooperatives (US\$m)

Source: World Islamic Insurance Directory 2012, reproduced by Ernst&Young

3.8.2.2 Mutual/Cooperative Insurance

Unlike a conventional insurance company which is owned by shareholders, a mutual insurance company is owned by its policyholders. The main characteristics of a mutual insurer are its lack of capital stock and the distribution of earnings. Unlike the capital stock company, the mutual company has no paid-in capital as a guarantee of solvency in the event of adverse experience. For this reason, mutual insurers need to accumulate a surplus to protect against such adverse contingencies as heavy losses or a decline in investment return. Any money left after paying all costs of operation is returned to the policyholders in the form of dividends. Unlike for capital stock companies, the premium of a mutual insurer is not fixed, and the excess of premium income over costs may be returned to policyholders as dividends. The main difference between a mutual and a cooperative insurance company is that a mutual must be owned by its customers, whereas a cooperative may be owned by other cooperatives (second tier organizations) that are not necessarily its customers (Vaughan, 2008). Vaughan believes that there are few practical differences between a mutual company and a conventional insurance company. Although the policyholders own the mutual company in theory, there are no vested rights of ownership for these policyholders except in the case of liquidation. Policyholders acquire their ownership interest when they purchase a policy from the mutual insurer. They abandon that ownership when they don't renew their insurance or are canceled by the insurer. Furthermore, while the policyholders theoretically control the company, this is equivalent to the theoretical control of the stockholders over the management in a large corporation with many individual stockholders.

3.8.2.3 The Main Characteristics of Takaful

Islamic insurance, or takaful, differs from conventional insurance in that it is a cooperative form of insurance, though the actual business operations may be left to commercial firms, who act as managers, or agents, with the policy holders as their principals. The customers of the takaful business or the policyholders pay contributions to cover them for a shari'ah-compliant insurable loss. The operator or agent operates the business on behalf of the policyholders and provides initiations to start running the business, they could be a shareholder as well or just an agent depending on the type of company. Policyholders pool their contributions in a *policyholder fund* and use these pooled contributions to pay the insurance claims of the company, the brokerage fees and reinsurance fees. At the end of a financial year the net fund that remains after deducting all expenses, claims (including setting up reserves to pay potential future claims) could be in the form of a surplus or deficit. Surplus is shared amongst the

policyholders depending on the percentage of their contribution or through any other methodology approved by shari'ah board. Deficit is funded by a *qard al-hassan* (a benevolent loan) from the shareholders.

The participants pay contributions (donations or *tabarru'*) instead of a premium to the takaful business to cover the risks. The amount of contribution is fixed, based on the risk assured and duration of participation defined under the takaful contract. (Azman, Khan, IFSB, BNM). Since donation and gratuitous acts tolerate higher degree of *gharar* (Vogel, 1998), the contributions are treated as donations from the policyholders to the takaful business. In theory, protection is provided under the principles of joint indemnity *ta'awun* (mutual cooperation and protection), which as mentioned is very similar to mutual /cooperative insurance with some slight differences, where the insured is also the insurer, and therefore shares in the profit or loss of the institution they are paying the contribution to it.

The contract between the participants themselves is *tabarru'* and *ta'awun* and the contractual relationship between the participants and the takaful operator is a *mua'wadha* or *wakalah bi ajr* (agency with fee) contract which should be concluded with mutual consent. (Azman, 2010).

Currently there are four main operational models of takaful :

- A. Mudaraba model
- B. Wakala model
- C. Hybrid model
- D. Waqf model

(Sudin Harun, 2004)

- A. Under *mudaraba* or profit sharing model (Figure 3.10) the takaful operator acts as a *mudharib* (entrepreneur), the participants are *rab al mal* (capital providers). The shareholders share in the profit or loss with the policyholder according to the contract. Payment to the operator (shareholder) is based on a pre-agreed proportion of any surplus generated by the policyholders' funds in return for running the insurance operations of the takaful business; plus a pre-agreed proportion of any investment income from investing the policyholders' funds assets on behalf of the policyholder. This model is against AOOIFI standards on takaful. The irregularity lies in the distribution of the underwriting surplus from the takaful fund since surplus is actually the remaining capital, not the accrued profit. (Azman 2010)
- B. Under *wakala model* (Figure 3.11), shareholders act as an agent (*wakil*) to the policyholders. In this model, shareholders are paid by a pre-agreed proportion of the contributions paid by the policyholders in return for running the insurance operations of the takaful business.
- C. *Hybrid model* is a mix between the *wakala* and *mudaraba* model. In this model, there are two ways that shareholders are paid. First in *wakala model for the contributions*; they are paid by a

pre-agreed proportion of the contributions paid by the policyholders in return for running the insurance operations of the takaful business. Second in *mudaraba model for the investments* shareholders are paid by a pre-agreed proportion of any investment income from investing the policyholders' funds assets .

- D. Under *waqf model*, part of the capital of the shareholders fund is donated to create a waqf (charity) fund (similar to policy holders' fund). In all other respects, the *waqf model* works in the same way as the hybrid model. The waqf fund is then works to extend financial assistance to its members in the event of losses, moreover to extend benefits to its members strictly in accordance with the *waqf* "trust" deed, and to donate to charities approved by the shari'ah supervisory board.

The key features of first three models are summarized in Table 3.6

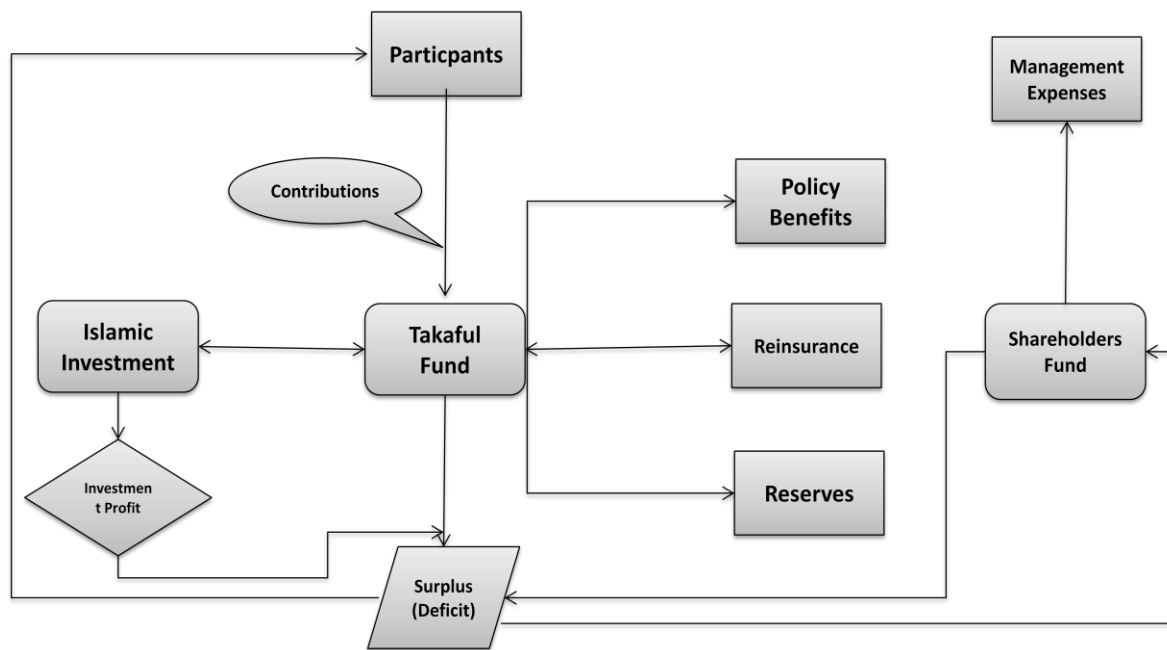


Figure 3.10 Mudarabah model

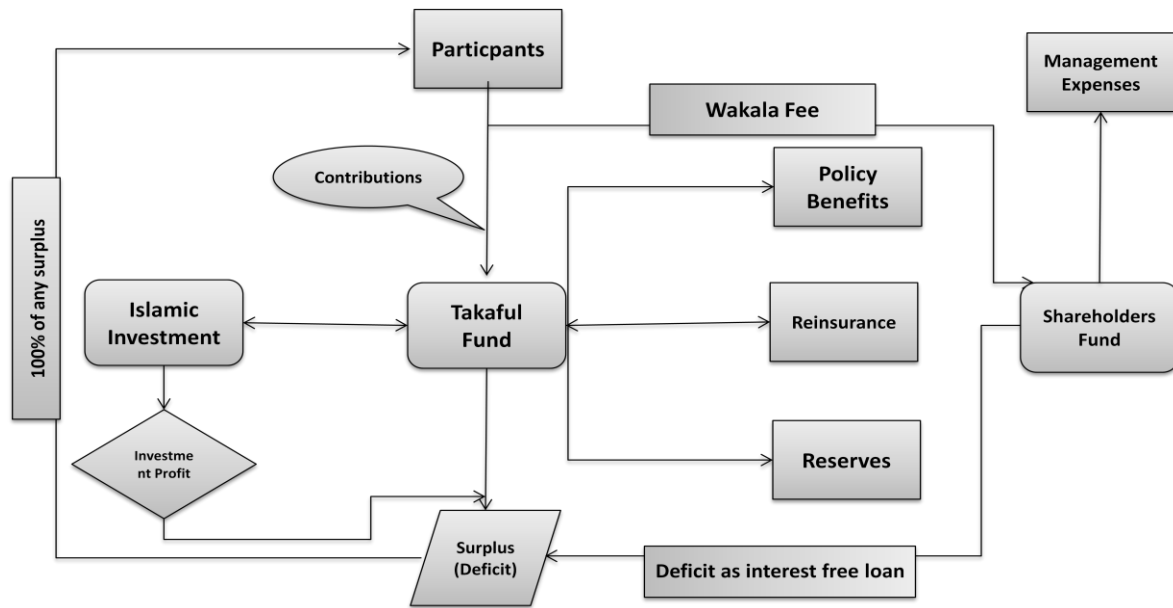


Figure 3.11 Wakala model

Table 3.6 Key features of three models of takaful

Mudaraba	Wakala	Hybrid
No fee is paid . The Takaful operator(TO) will share in the profit(both investment and surplus profit)	TO will be paid by a fixed and pre-agreed amount of fees	TO will be paid by a pre-agreed proportion of the contributions in return for running the insurance operations plus a pre-agreed proportion of any investment income from investing the policyholders' funds assets
Level of profitability of the TO depends on actual surplus plus investment amount	Profitability of the TO depends only on fees income minus all costs and expenses	TO profitability depends on fee income plus profit sharing minus costs and expenses
It is more suitable for long-term policy (family takaful) because profit is not common in general takaful. Surplus is not considered as profit	Suitable for both long and short term policy	Suitable for both long and short term policy
Surplus is just allowed to be shared as incentive fees in some cases in general takaful	Surplus may be shared as an incentive fee	Surplus is allowed to be shared as incentive fees in general takaful. In family takaful it goes to participants.

3.8.2.4 A comparative study of takaful and other conventional Insurance models and conclusion

In this section we will discuss and summarize the main differences among takaful and other types of insurance. We are looking for any modification made by takaful in case of shari'ah compliance. These incompliance-as mentioned in section 3.8.2.1- mainly comes from gharar and riba. This analyze is based on some important subjects in an insurance contract as follow:

- Contracts utilized
- Company's responsibility
- Participants' responsibility
- Investment considerations
- Payoffs
- Moral hazards and adverse selection
- Risk Sharing
- Regulations

- **Contracts utilized**

The contract type in takaful is tabarru' or contribution. It differs from commercial insurance that is based on an exchange contract. As Vogel(1998) explains; donation and gratuitous acts tolerate relatively higher degrees of gharar, and on Maliki view the gift promise is binding so gharar from uncertainty is tolerable in case of contribution. Some scholars argue that it is not a real donation and contribution is not different from what is called premium in conventional contracts. For example Anwar(1994) debates that if contribution is really sort of donation then it shall also be accessible to other members in the community who cannot afford to buy takaful.

The other modification toward shari'ah compliance, resulted from contract type, is what Suwailem(2000) mentions as broken connection between utility and liability. In a normal insurance owner becomes entitled to the utility without assuming its liability, whereby liability of insured asset is exchanged for a premium. It is sort of imbalance between rights and obligations and a case of gharar. But in takaful since the contract is not an exchange and both the contribution and the damages is paid based on the solidarity and donation, then this imbalance would not happen. The critical points mentioned above about the real nature of donation are available for this case as well.

– **Company’s responsibility**

In a conventional company, if the claims plus other costs exceed the premiums and other incomes then only shareholders should pay for deficit but in takaful, benefits and deficits are shared between policy holders and there is no insurer, so it would not have the nature of a strictly competitive or zero-sum game and its adverse results such as enmity and hatred. Practically in some models of takaful which the payment to takaful operator is a percentage of total surplus it could be still competitive but still clearly the benefits are not in opposite directions as in commercial insurance.

– **Participants’ responsibility**

As mentioned before, since policyholders are at the same time the shareholders of company, they should pay contributions not premiums so it raises the solidarity and social cohesion which contribute to the total wellbeing of the society and can improve both commutative and distributive justice more than a commercial insurance.

– **Payoffs**

Even though the main purpose of takaful is to make stronger solidarity and cooperation among Muslims; the policyholder may also refund part of their premiums as benefit which theoretically must be smaller than their contribution, so in any case no one can get a positive payoff. It would not decrease the zero-sum effect of insurance but since it equalizes the payoffs, whereby would diminish the enmity and hatred caused of it and would increase the commutative justice.

– **Investment considerations**

Any prohibited investment should be avoided i.e. investments including riba, gharar and participation in *haram* businesses such as Alcohol.

– **Moral hazards and adverse selection**

The typical takaful undertaking faces difficulties of moral hazard and adverse selection that are no less significant than for conventional insurers (Archer et al.,2009). The main reason as Anwar(1994) mentions is because the hope of monetary gains supersedes the principle of honesty in a Muslim society at the same level as in a non-Muslim society. From the same point of view some Muslim and non-Muslim scholars criticize the whole Islamic Finance phenomenon and consider it far from main shari’ah objectives as long as the Muslim societies behave the same way as non-Muslims.

– **Risk Sharing**

In takaful unlike the commercial insurance all the risk is not borne by insurer and all the policyholders are subject to an equal liability towards the pool of risk. So they should be at the same risk-averse level.

– **Regulations**

According to the level and geographical area of takaful company, they should follow national and international rules same as commercial companies. In addition they are under some special acts and rules special for takaful companies nationally or internationally which just specifies the minimum requirements but is not enough to guarantee the shari'ah compliance in all emerging cases and activities. To achieve this establishment of a shari'ah advisory board is required for all the takaful companies.

3.9 Conclusion

In this chapter by a comparative study of some typical, nominated and modern contracts regarding the risk and gharar involved in them, the main target is to make an objective tool to distinguish and measure gharar in a contract and then by applying this tool to the similar cases recognize the level of tolerable and excessive risk in any contract. The result of study is reflected in Table 3.7. Based on this table and the results of studies in this chapter and by applying a positivistic approach, these propositions are concluded:

Proposition 1 The preferable risk attitude from the Islamic point of view is the risk aversion of both engaged parties in a contract. Therefore, when both parties are risk averse, the contract contains no gharar and when one party is risk taker and the other risk averse; it could be a gharar case.

From table 3.7 evidently all the controversial contracts involve a risk taker or a risk neutral party. From the game theoretic point of view, it is equivalent to a zero-sum game which the payoff of one party opposes the payoff of other party. But zero-sum measure does not always end in a correct measurement of gharar as in takaful. Analysis of takaful indicates that risk aversion attitude overcomes the zero-sum measurement.

Proposition 2 When there is no balance between liability and return for any party, the risk allocation could not be shari'ah compliant. The contrary result is not always correct.

This proposition is also evident from Table 3.7. The opposite result i.e. when there is balance between liability and return, does not mean that the risk management is shari'ah compliant as in typical gharar case.

Proposition 3 The Pareto efficiency and symmetry of information are not the main concerns in a shari'ah compliant risk management.

Regarding the Table 3.4 and also takaful case, the Pareto efficiency has a lower priority than a proper risk allocation. About the total welfare, it is possible to justify gharar and risk from their impact on total welfare , but through the investigated examples no evidence could be found.

To get to these conclusions a positivistic approach has been applied. This approach which is based on study of real cases has a limited application mainly in respect to the number of case studies. Moreover, it is based on a broad scope of permissibility among classic Muslim jurists.

For future works this methodology could be applied to the several modern transactions and could be supported by some empirical data to make it as much as accurate.

	Commercial Insurance	Cooperative/ Mutual insurance	Takaful	Shari'ah compliance modification
Contracts utilized	Remunerative/Commutative exchange contract	Mutual contract – considered to be an exchange contract on principles of mutuality in Mutual Companies	<ul style="list-style-type: none"> ▶ Donation(<i>tabarru</i>) and mutual undertaking based on nonremunerative/ noncommutative contract ▶ Not an exchange /commutative contract 	Since donation and gratuitous acts tolerate high degree of gharar(Vogel,1998), and on Maliki view the gift promise is binding so gharar arised from uncertainty is tolerable . Some scholars argue that it is not a real donation and they hesitate about the gharar relief in this way. No imbalance between obligations and rights according to the type of contract.
Company's responsibility	Pay claims	<ul style="list-style-type: none"> ▶ Pay claims with underwriting fund ▶ Pay for deficits if any(cooperative) 	<ul style="list-style-type: none"> ▶ Manage the participants' fund ▶ Pay claims from underwriting fund ▶ Provide interest free loan to underwriting fund in case of deficit 	In a conventional company, if the claims plus other costs exceed the premiums and other incomes then only shareholders should pay for deficit but in takaful, deficits are shared between policy holders so it would not be a zero-sum game
Participants' responsibility	Pay premiums	Pay contributions/premiums (and pay for deficits in some models of cooperative)	Pay Contributions	Since policyholders are at the same time the shareholders of company, they should pay contributions not premiums so it raises the solidarity. It could be justified by contribution to the total wellbeing of the society.
Investment considerations	No restriction except prudential	No restriction except prudential	Shari'ah compliance and prudential	Riba and stipulation(extra gharar) is avoided in investment
Payoffs	<ul style="list-style-type: none"> ▶ Paid from the company reserves received from the premium by policyholders to the shareholders ▶ Policyholders receive no payoff 	Any money left after paying all costs of operation is returned to the policyholders in the form of dividends which is theoretically equal to or smaller than premium/contribution paid	Paid from the related participants' funds under mutual assistance.	Even the main purpose of takaful is for solidarity and social cooperation, the policyholder may refund part of their premiums as benefit. So in any case no party can get a positive payoff. It will not decrease the zero-sum effect of insurance but since it equalizes the payoffs, it would diminish the enmity and hatred caused of it and even can improve the solidarity as a value in the Muslim society.

Moral hazards and adverse selection	Significant	Significant	Significant	The typical takaful undertaking faces difficulties of moral hazard and adverse selection that are no less significant than for conventional insurers.
Risk sharing	The insurer suffers all risks though may reinsure it, so the insurer theoretically considered as risk-taker in a bilateral level and risk-neutral in a multilateral level	The risk is shared among all participants equally	The risk is shared among all participants equally	In takaful unlike the commercial insurance all the risk is not borne by insurer and all the policyholders are subject to an equal liability towards the pool of risk. So they should be at the same risk-averse level.
Regulations	In accordance with the required national/international laws and insurance regulations.	In accordance with the required national/international laws and insurance regulations.	<ul style="list-style-type: none"> ▶ In accordance with the required national/international laws and insurance regulations. ▶ Establishment of a shari'ah advisory board is required 	To guarantee shari'ah compliance.

Table 3.7 Comparison between conventional insurance and takaful

Table 3.8 The summary of results

Contract or Event	Risk Attitude		Zero-sum or strictly competitive	Information Distribution	Balance of Liability and Return	Total Welfare	Shari'ah Ruling	
	Buyer (Employer, insured)	Seller (Contractor, insurer)					Permissible	Impermissible
Typical Gharar Case(Run Away Camel)	Averse	Taker	Yes	Could be Asymmetric	Balance	No Change	N.A	All
Ja'alah	Taker	Averse	Yes	Symmetric	No Balance	No Change	Maliki, Shafi'i, and Hanbali	Hanafi
Urbun	Averse	Taker	Yes	Symmetric	Balance	No Change	Hanbali	Maliki, Shafi'I, Hanafi
Options (Call)	Averse	Taker	Yes	Symmetric	Balance	No Change		Hanafi
Insurance	Averse	Taker(bilateral) or Neutral(Multilateral)	In bilateral yes	Asymmetric	No Balance	No Change	Jafari and somehow others	All
Takaful	Averse	Averse(Insurer and insured in a same situation)	Zero-sum but not competitive	Asymmetric	Balance	No Change	Based on Maliki but almost Permissible by all	-

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Chapter 4

Risk Management in Construction Contract, a Comparative Study of FIDIC and Iran

4.1 General Introduction

Iran as a developing and very young country has an urgent need to execute large construction projects. According to the newest statistics Iran's population is around 74000000 in 19500000 families who live only in 14000000 dwellings²⁵. It means that in every dwelling 1.39 family live. It is estimated that at least 4 million new houses are necessary to fill this gap and some more to reply to new demands. This demand arise from baby boomer in early years of 80's who all are at the marriage age. So Iran's construction market is a large and still developing market. According to the Iran's Oil and Gas Ministry, Iran needs to invest around 470 billion dollar in Oil and Gas industry in next 20 years²⁶ to stay the second large Oil producer in OPEC after Saudi Arabia. This investment could not be provided by internal resources moreover the internal contractors do not have enough financial and technological capacity in these fields. The same facts could be pointed out about the other infrastructure projects such as new road and highways, railways and etc. Regarding these facts, EPC Turnkey and BOT contracts could play a crucial rule to fill the financial and technological gap as well as other type of contracts such as Joint-Venture contracts, Buy-Back and etc.

On the other hand Construction projects are sensitive to an extremely large matrix of hazards and risks. This sensitivity is due to some of the inherent characteristics of construction projects as follow (Bunni, 2003);

(a) The time required to plan, investigate, design, construct and complete a construction project is very long and often greater than the period of cyclical recurrence, known as the 'return period', of many of the hazards to which such projects are exposed. For example, the hazard of rainfall has usually a return period of less than one year depending on the time for the rainy season. The return period for rainfall of a

²⁵ AftabNews 20 Apr. 2010, stated by Bank Maskan(Housing Bank) Manager G.Sharifi

²⁶ BBC 13 Jan 2008, stated by Iran Oil and Gas Ministry

specific intensity at an individual site would depend on its location. Therefore, the risks associated with rainfall on a particular project would have to be assessed and managed for the number of years taken to complete it. Any reduction in the period of construction introduces its own risks.

(b) The number of people required to initiate, visualize, plan, finance, design, supply materials and plant, construct, administer, supervise, commission and repair any defects in an infrastructure construction project is enormous. Such people usually come from different social classes and in international contracts, from different countries and cultures.

(c) Many infrastructure projects are constructed in isolated regions of difficult terrain, sometimes stretching over extensive areas and exposed to natural hazards of unpredictable intensity, frequency and return period.

(d) The materials selected for use generally include a number of new products of unproved performance or strength. Advanced and complex technology is also necessary in some construction projects.

(e) Extensive interaction is required between many of the parties involved in construction, including those engaged as suppliers, manufacturers, subcontractors and contractors, each with its own different commitments and goals.

(f) Construction projects are susceptible to risk cultivation by the parties themselves or by others associated with them or advising them.

Regarding the importance of construction and risk management and notwithstanding the current political situation and sanctions against Iran, the key to success for foreign contractors and consultants wishing to work in Iran will be to understand both the characteristics of the typical Iranian construction and industrial contract and its applications. In this chapter a comparison between FIDIC and Iran's typical contracts used for construction and industrial EPC contracts Has been made to identify the differences which exist between the two and to examine if the Iranian forms of construction contract are capable of being used in a truly international construction market as may be developed in Iran in the future. The main topic to be concerned is risk management and the main novelty is using Islamic approach to contract management as a criterion to be investigated that Iran typical construction contract; in what level is shari'ah compliant. We will use some comparison methods based on similar works and the results of Chapter 3.

At the first part of this Chapter Iranian and FIDIC type of contracts are introduced and then the methodology is described and finally the results are discussed.

4.2 Iran civil and construction contract codes

4.2.1 Introduction

Iran civil law was drafted and enacted between 1928 and 1936. It was under the inspiration of shari'ah and shari'ah law and to a lesser extent the Code Napoleon and Belgian and Swiss codes (Amin) and also Egypt civil code. Iran civil code is the only civil law inspired by shi'ah jurisprudence (McGlenn, 2001). After a few modifications the revised version based on more shari'ah subjects enacted after Islamic revolution (1983) (Iran civil code). Article 4 of the Iran Constitution provides that:

"All laws, regulations, and.... must be based on Islamic principles. This article applies generally to all the articles of the Constitution and other laws ... The religious jurists of the Guardian Council [will decide] whether or not such laws ... conform to this article."

As mentioned before in the Chapter 2; the source of contract law in sharia'h has been the custom and a lot of Iranian lawyer believe the same (Langroudi, 1999; Feiz, 2003). Regarding these facts they believe that the transactions and contract law in Islam must be compatible to the new customs and beliefs (Langroudi,1999). According to article 10 and 223 of Iran civil code about the binding and validity of private contracts that states any contract entered into is understood to be binding and valid unless its false nature is proved, in construction contracts also any type of private contract is binding and valid. Unless as Ghasemzadeh (2008) argues, there is a hesitation that the contract is contrary to law, and whenever it is contrary to law but not certain that the law is obligatory or complementary, the law must be considered complementary and again contract is valid. And finally if someone believes the construction contract is contrary to the shari'ah; it must be proved through a judicial process.

However, there are some standard format of construction contract issued by the President Deputy of Strategic Planning and Control (or former management and planning organization) which are obligatory only for projects run under public budget. These codes and any new amendments of them, come to force by president signature or the director of President Deputy of Strategic Planning and Control. Therefore, basically no check of shari'ah compliance has been made about them in their legal process. Some of the most commonly used standard forms of construction contracts in Iran issued by the President Deputy of Strategic Planning and Control are as follow:

- 4311(contract works)(1998)
- EPC 84(design and build for construction works)(2005)
- EPC 5490 (industrial EPC)(2002)
- BOT469(Build-Operation-Transfer)(2009)
- C 83(Construction for industrial and infrastructure projects)(2004)
- EP 83(Industrial Engineering-Procurement)(2004)

- PC 84(Industrial Procurement-Construction)(2004)

In this Chapter first we make a general comparison between EPC 84 and FIDIC. The reason for this selection is that EPC 84 is the most updated one and moreover; it is mainly inspired by FIDIC Yellow Book and then has been localized, so it is more practical to be compared with FIDIC. However, according to some evidences (like asking from experts and the application of codes), 4311 is still binding for all public construction projects and others could be used instead only in case, and 4311 could be applied for all type of contracts other than transportation and sale contracts and also all general conditions are binding to be applied with no change but in case of EPC84 they are just as guidelines. Thus we will use 4311 in case- specially about breach matters.

4.2.2 General Overview of EPC-84 and 4311

“The regulations for Executing Design and Build” which is known as EPC-84, has been issued in 2005 by formerly “Iran Management and Planning Organization”. According to the introductory part of that article, it is an “uncommon Method” for executing projects. Some of instructions in this package are type 3 it means that the related employer can use it or use another guideline. It has not mentioned which parts and in what extent and who has the authority to make decision about it and what could be replaced. It is recommended that this type of contract being used in construction projects.

EPC-84 package consists of five main chapters related to contract: Contract Agreement form, General Conditions, Particular Conditions, Appendix to Tender, guidance for Tendering.

4311 issued in 1998 consists of four main chapters; general guidelines, agreement, general conditions and particular conditions. The general conditions consist of 5 chapters and 54 sub-clauses.

4.3 FIDIC’s Standard Forms of Contracts

FIDIC is the international federation of national associations of independent consulting engineers Founded in 1913 by the national associations of three European countries, with membership from over 60 countries FIDIC now represents most of the private practice consulting engineers in the world.

FIDIC’s Red and Yellow Books (i.e. standard forms of contract for works of civil engineering construction and for electrical and mechanical works) have been in widespread use for several decades, and have been recognized for their principles of balanced risk sharing between the Employer and the Contractor. Later we will explain more about the risk management in the FIDIC forms of contracts.

Table 4.1 Design and risk sharing in FIDIC's standard forms

Form of Contract	Design	Risk Sharing
Red Book	By employer	Shared accordingly
Yellow Book	By contractor	Shared accordingly
Silver Book	By contractor	Contractor taking almost all risks

4.4 Methodology

According to Omoto (1992) the followings are the principal topics to be covered by the conditions of contract.

A. Essential Features

1. Definition of Works
2. Price

B. Optional Features

1. Quality of Works
2. Power to vary Works
3. Time for Completion
4. Payments
5. Defining Risks

C. Administrative Features

1. Appointment of "the Engineer", "Quantity Surveyor", etc.
2. Controls and Sanctions
3. Extension of Time for Completion
4. Certification of Interim, Final or any other Payments
5. Insurance

6. Sub-contracts
7. Claims
8. Dispute Resolution
9. Termination
10. Bonds

Since it is impossible and also not so much interesting to cover all these topics, in this chapter we first try to find out the main differences among FIDIC and Iran standard forms of contract. Because EPC 84 and FIDIC Plant and Design Build-Yellow Book- have much more similarities they have been selected for a general comparison in the first step. In the next step regarding the main differences; a comparison among three FIDIC books and EPC 84 has been made with special attention to the risk allocation and risk management and finally; 4311 and Red Book has been compared according to the sub-clauses related to the termination of contract .

4.5 FIDIC and EPC 84 a General Comparison

All of the main differences have been summarized in the Appendix 1, Table A.1 then classified in Table 4.2.

Based on Table 4.2 and ignoring any difference related to the localization of contract that does not make any substantial difference, the main differenced could be classified in categories as:

1. Engineer's Duty and Authority
2. Contractor's/Employer's Obligation
3. Risk Sharing
4. Insurance
5. Variations and Claims
6. Termination and Suspension

Table 4.2 Classification of Differences between EPC 84 and FIDIC Yellow

Clause or Sub-Clause	Category
1.1.4.1	General Definition
1.1.5.4	General Definition
1.1.6.2 Country	Localization
1.2 Interpretation	Localization -Gender
1.4 Law and language	Localization –Law and language
1.5 Priority of Documents	Engineer’s Authorities
1.7 Assignment	Localization
1.15 Privacy	Not clear
3.1 Engineer’s Duties and Authority	Engineer’s Authorities Employer’s Authorities
3.2 Delegation by the Engineer	Engineer’s Authorities
3.5 Determination	Engineer’s Authorities Employer’s Authorities
4.8 Safety Procedure	Employer’s Obligation and risk
6.12 Foreign Staffs and Labours	Localization
6.13 protection of Insects	Localization Contractor’s Responsibility
6.14 Alcohol and Drugs	Localization Contractor’s Responsibility
6.15 Arms and Arsenal	Localization
6.16 Ceremonies and National Holidays	Localization
7.9 Financing	Financial
8.13 Rewards	Financial Contractor’s Benefit
10.1 Taking-Over Committee	Not Clear
10.1 Taking-Over Certificate	Engineer’s Authorities
10.2 Taking over of Parts of the works	Not Clear
11.9 Performance certificate	Engineer’s Authorities Employer’s Authorities
13.1 Right to Vary	Engineer’s Authorities Employer’s Authorities

13.2 Value Engineering	Contractor's Cost/Benefit Employer's Cost/Benefit
13.3 Variation Procedure	Not Clear
13.7 Adjustments for Changes in Legislation	Employer's Risk Contractor's Risk
13.8 Adjustments for Changes in Cost	Employer's Risk Contractor's Risk
14.8 Delayed Payment	Localization - Currency exchange and discount rate
14.14 Cessation of Employer's Liability	Employer's Obligations
14.15 Currencies of Payment	Localization- Currency exchange and discount rate
15.2 Termination by Employer	Employer's Authority
16.1 Contractor's Entitlement to Suspend the Work	Contractor's Risk
16.2 Termination by Contractor	Contractor's Risk
16.2 Termination by Contractor	Employer's Obligation
16.2 Termination by Contractor	Employer's Risk
18-1 General Requirements for Insurances	Contractor's/Employer's Obligation/cost
20.6 Arbitration	Localization

4.6 Risk and Risk Management in Construction

4.6.1 Introduction

For an efficient and effective construction work, risk management is essential. To implement such a system at first step; hazards shall be identified, assessed and analyzed, their management must be allocated to the various parties in order to keep them under control, prevent the occurrence of their harmful consequences and thus reduce the risk. Such allocation is part of the risk management process, where the party to whom a certain hazard and associated risk are allocated should be selected in accordance with certain rules rather than haphazardly. The rules for allocation of risks in a construction project may simply revolve around the ability of a party to (Abrahamson, 1984):

- (a) Control any arrangements which might be required to deal with the hazard or any triggering incident relating to it;
- (b) Control the risk or to influence any of its resultant effects;
- (c) Perform a task relating to the project, such as obtaining and maintaining insurance cover; and
- (d) Benefit from the project.

If risks are not allocated in a contract and a dispute arises between the parties to that contract concerning to whom a particular risk is allocated, then an arbitrator or a judge would most likely examine the following criteria for risk allocation and determine the dispute accordingly (Grove, 1998):

- (i) Which party could best foresee that risk?
- (ii) Which party could best control that risk and its associated hazard or hazards?
- (iii) Which party could best bear that risk?
- (iv) Which party most benefits or suffers when that risk eventuates?

The ultimate goal of optimal risk allocation is to promote project implementation on time and on budget without sacrifice in quality, that is, to obtain the greatest value for money. It is more related to the efficiency and total wellbeing, as discussed in Chapter 3 is not the core subject in Islamic Risk Management which attributes a higher importance to commutative justice.

4.6.2 Risk Allocation and FIDIC Standard Forms

The risk allocation in construction contracts is traditionally based on a sharing between the parties involved in accordance with the provisions of two contracts usually executed between the parties to a construction contract: the first is between the Employer and the Design professionals involved; and the second is between the Employer and the Main Contractor. From the latter agreement, flows another line of risk sharing between the main contractors, on the one hand and sub-contractors, suppliers, manufacturers, insurers and others, on the other hand.

The standard form used by FIDIC for the contract between Employer and Designer is the White Book, which is in its 4th edition (2006)²⁷. This first type of contract does not include in its provisions reference to the topic of risk. Instead it goes directly to liability and insurance which flow from risk. The standard forms used by FIDIC in contracts between Employer and the Main Contractor are FIDIC's Red, Yellow and Silver Books have been recognized for their principles of balanced risk sharing between the Employer and the Contractor. These risk sharing principles have been beneficial for both parties, the Employer signing a contract at a lower price and only having further costs when particular unusual risks

²⁷ FIDIC Client / Consultant Model Services Agreement" 4th edition 2006

actually eventuate, and the Contractor avoiding pricing such risks which are not easy to evaluate (Corbett, 2000).

The risks in this second type of contract are dealt with on the basis of the effect they generate; if and when they eventuate the effect can be one of two possibilities as follow:

1. The first type incorporates the risks which could lead to damage, physical loss, or injury, if and when they eventuate; and
2. The second type incorporates risks which could lead to economic and/or time loss, if and when they eventuate.

These two types of risk and their consequences are shown in Figures 4.1 and 4.2 for the contract between Employer and Contractor, with specific reference to the FIDIC forms of contracts.

Examples of the first type of risk which involves damage, physical loss or injury include defective design, defective materials, defective workmanship, acts of God, fire, human error and failure to take adequate precautions. Examples of the second type include late possession of the site, delay in receipt of information necessary for timely construction, changes in design, and variations to the original contract (Bunni, 2005a).

From the shari'ah compliance point of view, all risks classified in these two groups which are unavoidable and arising from the nature of a construction contract could not be considered as gharar. When you start a project; injury or damage is unavoidable. But it is necessary to mitigate it as much as possible. In case of financial risks any party shall comply with the balance between return and liability, for example if the Contractor receives loan from bank and pays a fixed interest to the bank, bank would receive a return without bearing any risk. In addition to riba, it is also kind of gharar. From the other hand if the Contractor insures against insurable risks, it is also sort of gharar and unbalance between return and liability as discussed in details in Chapter 3.

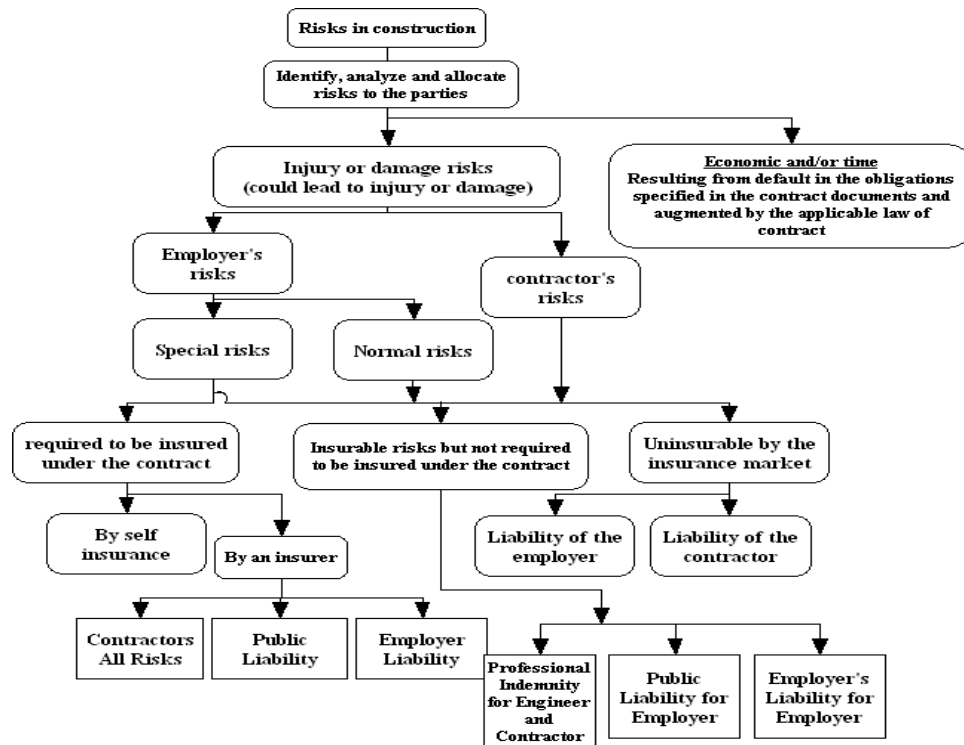


Figure 4.1 Risks of injury and/or damage (Bunni, 2005a)

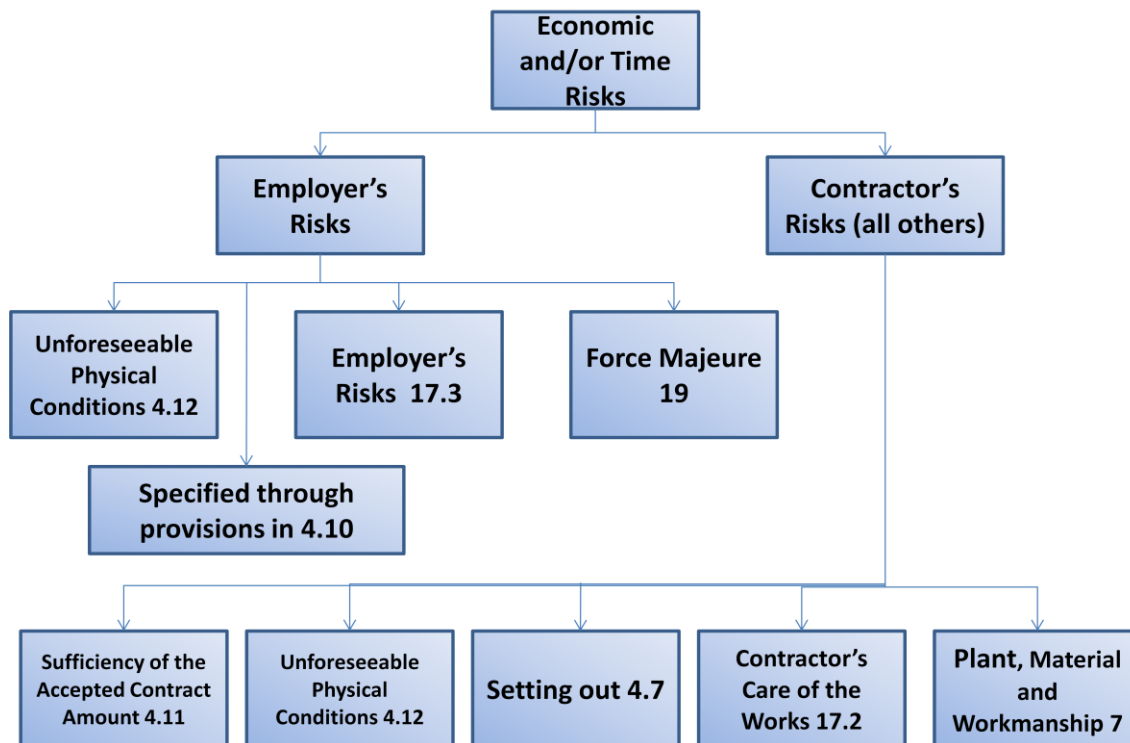


Figure 4.2 Economic and Time Risks Related Clauses as specified in FIDIC's Red and Yellow Books (Bunni, 2003)

4.6.3 Risk, Responsibility, Liability, Indemnity and Insurance

Whatever the rules or the reasons for allocation of risks, the responsibility and liability attaching to these risks, when they eventuate, follow and flow from that allocation. Once liabilities are assigned through the contract documents, the parties involved have the following options to finance the consequences of risks should these risks eventuate (Bunni, 2005b):

a) To retain the responsibility for financing the costs or loss or damage or injury by providing any one or a combination of the following arrangements:

1. An element of their cash flow;
2. Reserves created specifically for the purpose;
3. Funds assigned,

b) To transfer the responsibility for financing the costs of loss or damage or injury or non-performance to:

1. Another party to the contract by agreement, thus creating a sharing of risks;
2. An insurer through an insurance contract which in turn becomes transferred to reinsurers through reinsurance agreements. An insurer may impose his own risk management conditions, thus creating another cycle of transfer.

Generally, liabilities arising from the duties and obligations of the parties to a contract should be covered by indemnities given by one party to the other party, or provided in the form of insurance policies.

Clause 13 has also some important sub-clauses that make a substantial difference between FIDIC and Iran 84 from the risk and liability point of view. The case of breach which could end in a termination is also important as discussed in general comparison of FIDIC Yellow and Iran EPC 84. It can drastically increase risk for both parties and is studied in the next section.

The balance between liability and indemnity in standard form of contract is compliant with the notion of gharar in shari'ah whereby limits the excessive risk especially when it is borne asymmetrically by one party.

4.6.4 Risk, Responsibility, Liability, Indemnity and Insurance in FIDIC's 1999 Red, Yellow, Silver books and Iran EPC 84

One of the common features of all three of the 1999 FIDIC Books for major works is the section on risk. Despite the fact that there is a single clause-17-for risk and responsibility in all three FIDIC books, it does not mean that other clauses have no relation to the subject of risk and risk allocation. Clause 18 which is

titled as insurance is firmly related to this subject as well as clause 19 which is titled as force majeure. Besides there are some topics which could be related to the risk sharing for example in case of variation and termination.

In Table A2(Appendix 1), the wording of all related sub-clauses to risk in three main FIDIC books plus Iran EPC 84 is compared using the Yellow Book as a base-line. The wording of clauses 17, 18, and 19 in three main contracts, the 1999 Red; Yellow; and Silver Books, is very similar. It only differs in some few sub-clauses highlighted in the Table A2. Most of them are either of a minor nature or due to the respective role of the Engineer or the Employer in these forms. The Silver Book's main characteristic is the allocation of almost all risks to the contractor. It is mainly stated in clause 4 which is titled as **Contractor**. In sub-clauses 4-7, 4-8, 4-10 and especially in sub-clause 4.12 the total risk is almost borne by the Contractor and he is responsible for all unforeseen difficulties and costs to comply with his obligations as follows,

"Except as otherwise stated in the Contract (a) the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works; (b) by signing the Contract, the Contractor accepts total responsibility for having foreseen all difficulties and costs of successfully completing the Works; and (c) the Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs."

As mentioned before EPC 84 is more similar to Design and Build Contract or Yellow Book despite the name which is EPC. In Table 4.3, the risk related sub-clauses that are different in Yellow and EPC 84 have been summarized. In clauses 13 and 16 (Variation and Termination), there are some differences which shall be discussed more deeply. There are some important differences in insurance clause as well. Almost in all of the sub-clauses; the modification has been done toward the benefit of Employer. For example the sub-clause-Adjustments for Changes in Cost- 13.8 say:

"... the amounts payable to the Contractor shall not be adjusted according to increasing or decreasing of labor, goods and other effective factors."

It will increase risk of the Contractor substantially if he cannot adjust the Contract Price according to the change in cost. From the shari'ah point of view it could be considered unbalanced risk allocation which only one party is liable for all risks while both parties enjoy the return of contract. Therefore, it is a gharar case.

Table 4.3 Summary of main differences between FIDIC Yellow and Iran EPC 84

Clause or Sub-Clause	Iran vs FIDIC Yellow
4.8 Safety Procedure	Employer's Obligation and Risk Down
13.7 Adjustments for Changes in Legislation	Employer's Risk down
	Contractor's Risk's up
13.8 Adjustments for Changes in Cost	Employer's Risk Down
	Contractor's Risk Up
16.1 Contractor's Entitlement to Suspend the Work	Contractor's Risk Up
	Employer's Risk Down
16.2 Termination by Contractor	Contractor's Risk Up
16.2 Termination by Contractor	Employer's Risk Down
18 Insurance	Contractor's Risk Up

4.7 Breach of Contract, Remedies and Termination

4.7.1 Approach to Breach in Contracts and Remedies

Breach as Saleh(1989) say is the unjustifiable refusal or failure by one party to a lawful and enforceable contract to implement any of the express or implied duties incumbent on that party under the contract, normally by refusing to perform, failing to perform, performing late or performing badly. Some standard codes of construction contract such as FIDIC could be considered as a complete contract. They predict different type of contingency and predict a suitable decision for each condition. In breach cases also there are a lot of pre-estimates in case of liquidated damages and also some other remedies to mitigate the loss of injured party.

Generally, if any breach happens that is out of the scope of the provision of contract then sanctions in the form of damages or equitable remedies will be applied. This approach is different from that under some jurisdictions within the Romano-Germanic system of law where the performance of the contract has to be actually done, that is, there is a legal requirement that what was promised to be done will be done (Bunni2005a, as in German civil code). Under English law, where there is a breach of contract, an injured party may seek any or a combination of the following remedies:

(a) Remedies in the form of damages as follow;

- **Expectation measure**, the breaching party pays an amount that puts the other party in the position he would have been in had the contract been performed.
- **Reliance measure**, the breaching party compensates the other party for his reliance expenditures and returns to the other party payments that he made; thus except for foregone opportunities, the victim of breach is put in the position he was in before he made a contract.
- **Restitution measure**, the breaching party returns only the payments made to him; he does not compensate the other party for reliance expenditures.

(b) Equitable remedies in the form of:

- **Specific performance** is defined in Law of Contract (Cheshire et al, 1991), as a decree issued by the court which constrains a contracting party to do that which he has promised to do. This remedy is rarely available in construction disputes because courts will not enforce a contract requiring constant supervision.
- **Injunctions** are court orders compelling or restraining a specific act.

The reliance measure is always Pareto superior to the restitution measure. However, the relationship among the other remedies depends on the nature of the contractual situation. The expectation measure is Pareto superior to the other remedies if the estimate expectancy is sufficiently precise. The reliance measure is Pareto superior to the other remedies if the problem of excessive performance under specific performance and under the expectation measure (due to overestimation of the expectancy) is more important than the problem of inappropriate breach. Specific performance is Pareto superior to the other remedies if the problem of excessive breach under the expectation measure (due to underestimation of the expectancy) and under the reliance measure is more important than the problem of excessive performance.(Shavel, 1984)

4.7.2 Breach of Contract in Shari’ah Law

In Quran fulfillment of contract has been more considered as a moral subject than an economic one. Muslims are strongly recommended to fulfill their obligations:

“O you who believe! Fulfill all obligations(Uqud)” (Quran 5:1)

“And fulfill every contract (Ahd), for every contract will be enquired into the day of reckoning”
(Quran 17:34)

But in the other hand the right for the breach of contract has been contemplated in order to prevent extra duress. There are some self-help conditions that gives a right to parties for breach as Ma’sum Bilah(2003) mentions: Right to avoid the contract because of an option(Khiyar Al-Faskh), Right to

terminate the contract because of the specific provisions provided in a contract, Right to withhold the performance or payment by doctrine mutuality(Haqqe al-Habs).

There are also some remedies in case of breach. For defined contracts such as Bay'(sale) or Ijarah there are some exact remedies provided by shari'ah. Ma'sum Bilah has categorized these remedies as below:

- **Judicial remedies:** remedies conferred by a court of law on an aggrieved party in a contract against defaulting party.
- **Damages (Daman):** Once a party breaches the contract, the court upon inquiry and finding may oblige the defaulting party to pay damages for non-performance of his obligation unless it is established that the breach resulted from impossibility of performance (force majeure). The damages measure is justified to place the aggrieved party in the position as he would have been in if the contract had been duly performed.
- **Specific performance:** If it is too hardship for defaulting party, according to the principle of justice and fairness the court will provide other possible remedies. (Ma'sum Billah,2003)
- **Injunction:** order of the court against a party to the effect that he shall do or refrain from doing a particular act

But Nabil Salih(1989) argues that these remedies for breach of contract under shari'ah law have such limited effects that they would represent for an unscrupulous party an incentive to breach a contract if a change of circumstance makes it more profitable. To support that belief he makes some examples about contract law in some Muslim countries such as Kuwait, Jordan and UAE that all made endeavor to make more efficient remedies for breach.

To summarize breach from shari'ah point of view, it is recommended to the Muslims to fulfill their contracts but in case that one party is in duress it is recommended to the other party to get along with in a proper way. In case that one party breaches the contract and the injured party may request for some type of remedies by a mutual agreement or through a court decision.

4.7.3 Breach of Contract in FIDIC Redbook and Iran 4311

4.7.3.1 Methodology

In this section to make a comparison among FIDIC and Iran construction contract, the FIDIC Redbook and Iran 4311 have been selected. As mentioned in section 4.2.1, Iran 4311 is binding for all public

construction projects and others could be used instead only in case, and 4311 could be applied for all type of contracts other than transportation and sale contracts and also all general conditions are binding to be applied with no change. Moreover, 4311, despite EPC 84, is not inspired by any international standard contract and so can denote the Iranian approach toward contract law more precisely.

The approach selected to compare 4311 and FIDIC Redbook is a little different from previous comparisons. Since chapters and wording is completely different, the word by word comparison is not viable. Therefore, any of books is considered independently and all sub-clauses which discuss about breach have been concerned. In any clause the injured and defaulting party has been determined and the results also have been mentioned.

The breach could happen by any party including the Engineer who is actually determined by the Employer. As result three possible contingency have been recognized; suspension of the work, damages and termination. The comparison results have been reflected in Table A.1.3 for FIDIC Red and in Table A.1.4 for Iran 4311 in the Appendix 1.

4.7.3.2 Conclusion and Discussion

All possibility that may end in breach of contract in Iran 4311 is included in the sub-clause 46 and 48 of general conditions, and the clauses related to the breach are mainly clauses 8, 15, and 16 in FIDIC books. In the related sub-clauses in FIDIC Redbook according to the Table A.1.3, all the parties' breach is concerned. So any party; the Employer, the Contractor, and the Engineer; can make a breach and both main contract parties can be entitled for a remedy. On the other hand in Iran 4311 as denoted in the Table A.1.4, the Contractor's breaches is solely concerned and consequently only the Employer can be entitled for any remedy, and the remedy is merely in type of Right for Termination. Generally seen, there is no balance between right and obligation of contract parties according to the Iran 4311 and it is unilaterally for the benefit of the Employer.

Hereafter, the Optional Termination (Table 4.4) is regarded to make the comparison in more details. Sub-clause 48 of Iran 4311 and sub-clause 15.5 of FIDIC Redbook are about optional right of Employer to terminate the contract for the Employer's convenience. In FIDIC the termination is conditional by three conditions, 1) terminate the Contract in order to execute the Works himself; 2) The Employer shall not arrange for the Works to be executed by another contractor; 3) The Employer shall not avoid a termination of the Contract by the Contractor under Clause 16.2. However, in Iran 4311 it is almost unconditional. Therefore, the Employer is entitled to terminate the contract any time for any reason. This reason might be execution by another contractor.

The Contractor according to the FIDIC sub-clause 19-6 is entitled to be paid for the following items;

- (a) The amounts payable for any work carried out for which a price is stated in the Contract;
- (b) The Cost of Plant and Materials ordered for the Works ...
- (c) Any other Cost or liability which in the circumstances was reasonably incurred by the Contractor in the expectation of completing the Works;
- (d) The Cost of removal of Temporary Works and Contractor's Equipment from the Site and the return of these items to the Contractor's works in his country (or to any other destination at no greater cost); and
- (e) The Cost of repatriation of the Contractor's staff and labour employed wholly in connection with the Works at the date of termination.

The damage measure considered in this case in FIDIC is the payment for part of work already done which is almost equal to restitution measure and partly reliance measure which is not an efficient remedy compared with expectations damages or specific performance.

Assume that contract price is $p(t)$ and $v(t)$ is the expected value of project for employer assumed to be dependent on time, and r_c is the reliance costs for contractor, r_e is the reliance costs for employer, c is total costs and c_1, r_{c1}, v_1 denote the amounts in time 1. The expected payoff of contractor and employer are respectively as follow;

$$E_c = p(t) - c - r_c$$

$$E_e = v(t) - p - r_e$$

In case of FIDIC contract sub-clause 15-5, the Employer would have interest to terminate the contract in time 1 during the Contract performance; assuming that he need not to pay for the Contractor reliance, if;

$$E_{e1} < 0 \rightarrow v(t_1) - p(t_1) - r_{e1} < 0 \rightarrow v(t_1) < p(t_1) + r_{e1}$$

And if he pays for the Contractor's reliance he would have interest if;

$$v(t_1) < p(t_1) + r_{e1} + r_{c1} \quad (4.1)$$

The payoff of the Employer in this case would be :

$$U_{e1} = -c_1 - r_{e1} - r_{c1} \quad (4.2)$$

Table 4.4 Unconditional (optional) termination in FIDIC Redbook and Iran 4311

FIDIC sub-clause 15.5	Iran 4311 sub-clause 48	Result
<p>Employer’s Entitlement to Termination for Convenience: The Employer shall be entitled to terminate the Contract, at any time for the Employer’s convenience, by giving notice of such termination to the Contractor. <u>The Employer shall not terminate the Contract under this Sub-Clause in order to execute the Works himself or to arrange for the Works to be executed by another contractor or to avoid a termination of the Contract by the Contractor under Clause 16.2</u></p>	<p>Whenever before finishing the contract works and without any default made by contractor, on his convenience or <u>other reasons</u>, the employer may terminate the contract by notifying to the contractor and determining a date for taking over the site.</p>	<p>In Iran 4311 there is no limitation for employer to be entitled for unconditional termination.</p>

In the best situation for the Contractor i.e. the Contractor is paid back for the reliance costs, the payoff of the Contractor then would be as follow;

$$U_{cl} = 0$$

The total payoff in any case is:

$$U_I = U_{el} + U_{cl} = -c_I - r_{el} - r_{cl} \quad (4.3)$$

However, the Contractor’s expected final payoff, U_f , has been;

$$U_f = p(t) - c - r_c > 0$$

Regarding the fact that if $c + r_c > p$ due to the rise in costs, the Contractor may request for price adjustment according to the sub-clause 13.8, then the Contractor will worse off if the Employer uses his option to terminate the Contract. Moreover, the assumptions made in this simple model for the Contractor are very optimistic and in reality there are a lot of costs not to be reimbursed properly according to the Contract such as Opportunity Costs, Tendering Costs and so on.

The situation of the Contractor in Iran 4311 is worse than FIDIC in case of using the optional breach because, in addition to the all above-mentioned items, the Employer has right to find a second contractor who offers a lower price p_a . Then in this case the Employer will terminate if;

$$p - p_a > r_c$$

Therefore, the Employer will breach if in any t_I during the performance:

$$p_a(t_I) < p(t_I) - r_{cl} \quad (4.4)$$

$$\text{or } v(t_I) < p(t_I) + r_{el} + r_{cl} \quad (4.5)$$

The equation (4.4) is condition for terminating the Contract and making a new contract with another contractor. The equation (4.5) is the condition for breaching contract notwithstanding any other contractor's offer which is the same as FIDIC. Therefore, in Iran 4311 there is a higher probability that the Employer breach the contract.

In the condition that the Employer breaches the Contract and makes a new contract with another contractor the any parties' payoff and total payoff would be respectively:

$$U_{2e}=v(t_f)-p_a(t_f)-r_{ef}-r_{cf} \text{ for the Employer (4.6)}$$

$$U_{2a}=p_a(t_f)-c_{af} \text{ for the new Contractor (4.7)}$$

$$U_{2c}=0 \text{ for the former Contractor (4.8)}$$

$$U_{2f}= v(t_f)- c_{af}-r_{ef}-r_{cf} \text{ the total payoff (4.9)}$$

If the Employer continued the Contract with the first Contractor; assuming the same reliance costs in both situations, the payoffs were as follow;

$$U_e=v(t_f)-p(t_f)-r_{ef}-r_{cf} \text{ for the Employer (4.10)}$$

$$U_c=p(t_f)-c_f \text{ for the new Contractor (4.11)}$$

Since $p_a(t_f) < p(t_f)$, then $U_{2e} > U_e$ and since $p(t_f) > c_{af}$, then $U_{2c} < U_c$. Depending on the c_{af} and c_f , the total payoff may increase or decrease in the breach situation. Therefore, if the Employer breach and make a new contract with another contractor, the payoff of the Employer increases and the payoff of the Contractor decrease. Payoffs alter in opposite directions for the Employer and the Contractor. Actually the Contractor, with making a contract, insures the Employer against any loss. So the Contractor is risk-taker and the Employer is risk-averse and there is no balance in risk allocation and no balance between liability and returns. Therefore, referred to the discussions in Chapter 3, it is sort of gharar and cannot be a shari'ah compliant contract.

Moreover, Harisi (2007) believes that this type of unconditional termination according to the article 401 of Iran civil law invalidates the contract. The Article 401 of Iran Civil states:

“If no period is specified for conditions of option to terminate in a contract, both the condition of option and the sale are invalid”

It means that by sub-clause 48 that no date or period has been specified for the option for breach, the whole contract according Iran civil law is invalid.

4.8 Conclusion

The role of construction projects and construction management is indispensable in development of infrastructure in a developing country like Iran. Infrastructure construction projects are highly sensitive

against hazards and risks. Risks shall be clearly identified, categorized, evaluated and allocated according to the construction contract.

Risk management and risk allocation is the main concern in standard forms of contract such as FIDIC and the variety of FIDIC books are well-known for a well balanced risk allocation according to the project type. The appropriate contract shall be selected according to the each party's ability to bear the risks. It is very crucial that no party should accept any risk which cannot bear it.

To evaluate the situation of risk management in Iranian construction projects the starting point is expected to be the topic of risk and risk allocation in Iran's standard forms of construction contracts with a special attention to the Islamic approach and notion of *gharar* based on the results of previous chapters. To make a better understanding of risk allocation in Iran's standard contracts; the FIDIC is concerned to be a base point. In a word by word comparison between Iran EPC 84 and FIDIC Yellow Book, some main topics are emphasized and then based on these topics the risk allocation has been compared between Iran EPC 84 and three main FIDIC forms of contract. Generally the risk allocation in Iran EPC 84 is more similar to FIDIC Yellow. However, in some sub-clauses it creates a high liability and risk for the Contractor which is not in a balance with his return and could be considered an excessive risk and *gharar*. The other main topic which is also very important based on the comparison made between standard contracts, is the breach and termination of contract. The main idea and general views about breach and efficient remedies for breach is argued and the Islamic view point has been discussed. Finally, a comparison between another Iran's standard forms of contract namely Iran 4311 and FIDIC Redbook from the breach and termination point of view has been made. The results denote that in Iran 4311 merely the Contractor's breach has been considered and some liquidated damages have been predicted or the Decision Making process is defined. From the other hand, there is no penalty for the Employer's breach according to the Iran 4311 and the Employer has the right to terminate the Contract in case of the Contractor's breach. While in FIDIC Redbook right and obligation are more balanced and both the Employer and the contractor are entitled to get some damages in case of the other party's breach. The imbalance between right and obligation is a *gharar* case and can make the Contract invalid according to the shari'ah. Also the optional termination of contract for the Employer which is available in both forms is discussed in more details. The results in accordance with the previous results shows an unfair risk allocation and imbalance between liability and return in Iran 4311 compared with FIDIC Redbook.

As a result, the standard forms of construction contracts used in Iran are not shari'ah compliant from the risk and risk allocation point of view compared with FIDIC ones. As Harisi(2007) argues, the relation between the Contractor and the Employer in Iran construction contract law is more similar to the relation between a Lord and Peasants which turns back to the long history of feudalism in Iran. Therefore, it is not

so strange that a contractor who plays the role of peasant has no right and only suffers by unfair obligations.

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Chapter 5

Shari'ah Compliant Financing and its Impact on Infrastructure Investment

5.1 General Introduction

In the previous chapters the main focus was on the prohibition of gharar and its impact on project and risk management. Another main characteristic of Islamic Finance arises from the prohibition of "interest" or riba in shari'ah. In the current Islamic Finance, lenders do not obtain profit from interest but from PLS (Profit/Loss Sharing) by investment in certain projects.

In project financing; Saving Fund Procurement Costs is very important to secure profit. Islamic Finance is getting a very important alternative in fund procurement strategy in project financing. Islamic Finance can be considered as an alternative transaction to the conventional finance in fund procurement from capital market. In such case, both finance and saving markets in the Islamic Finance compete with those of conventional finance. It is not always clear how the rate of PLS are set for both depositor and financed party from the Islamic banks through the arbitrage with saving and loan interests of conventional finance. It has become very important question to reveal the reason why the Islamic Finance coexist with conventional finance and its market mechanism to consider the impact of the Islamic Finance attaining sufficient depth to investment in infrastructure implementation. Islamic Finance is a different financial method and growing as an alternative fund procurement method to conventional finance. In other words, coexistence of conventional finance and the Islamic Finance can be regarded as the differentiation of financial transaction platform.

This chapter proposes "two-sided market model" as a framework to analyze the competition relationship between two transaction platforms. Both conventional finance and the Islamic Finance require depositors as supplier and borrowers as demander. This chapter analyses the *raison d'être* of the Islamic Finance and its market mechanism by modeling competition between conventional finance and the Islamic Finance using two-sided market model as mentioned above.

Moreover, it examines the impact of the development of the Islamic Finance to investment in infrastructure implementation from the result of modeling analysis.

In this chapter; first, the basic idea and its novelty is explained and framework is analyzed after reviewing the existing studies. Later the financial market model is formulated regarding the Islamic Finance as a two-sided market model. Then a comparative statics analysis is introduced, and finally the impact of the development of the Islamic Finance to private financing of infrastructure projects is examined.

5.2 Methodology

5.2.1 Literature Review

Demanded by practical business, there are considerable number of past studies in the Islamic Law which study whether transactions in each Islamic country including interpretations of PLS scheme are shari'ah compliant or not. It is a basic method to apply PLS instead of "interest" in Islamic Finance because "interest" is prohibited in Islamic Law. Ebrahim and Safadi (1995) theoretically indicate that PLS has advantage to debt contract. On the other hand, there are studies which point out the possibility of the Islamic Finance offering long-term finance to growing industries (chapra, 1992; Siddiqi, 1983). However, most of the transaction schemes of practical Islamic Finance do not apply PLS and there are mere differences with conventional finance (Aggarwal, 2000; chong, 2009). Chong and Liu (2009) conclude that the rapid growth of the Islamic Finance is not because of its advantage in applying PLS, but because of the growth of their awareness of the religion. While Aggarwal and Yousef (2000) theoretically indicate that the more remarkable the Agency Problem is, the more the debt contract has advantage, and indicates that the debt contract will exceed PLS by economic reason in the Islamic Finance.

Past economic studies on Islamic Finance, which are mentioned above, have focused on economic reasoning in prohibition of "interest" or transaction scheme such as PLS and there is not any study on analyzing mechanism of decision-making by Islamic banks on rates of PLS (loan/saving interest in conventional market) in Islamic Finance, as far as the author concern. Therefore, this chapter models the problem faced by Islamic banks as price decision problem in two-sided market of both loan market and saving market, and makes it clear the mechanism to decide rates of PLS (quasi-interest).

5.2.2 Islamic Finance

The Islamic Finance has equivalent function with conventional finance in intermediating financial source from profit-making unit to deficit unit. However, the Islamic Finance and conventional finance have

different rules in intermediating. An important factor that characterizes the Islamic Finance as a transaction method of financial transaction is prohibition of *riba*. However, it does not prohibit the donor to make profit and allows them to obtain the distribution, say from joint investment. This scheme is called PLS (Profit Loss Sharing), such as obtaining profit and bearing loss according to the investment ratio of joint investment. There is the Islamic finance schemes, such as *mudarabah* and *musharakah*, which are based on PLS rule, however, only %5 of the total Islamic Finance use these schemes.

The concept of financial transaction in both the Islamic and conventional finance is nearly equivalent, but the Islamic Finance differs from conventional in projects to finance. The Islamic Finance cannot finance to the projects which deal with *haram* products, such as pork, liquor, tobacco, weapon, and etc., which is banned by shari'ah. Therefore, the Islamic Finance has limited customers to finance compared to conventional finance. There are also extra costs, which cannot be ignored, of arranging shari'ah committee to judge the eligibility of the transaction to deal with the Islamic Finance. Moreover, promoting the system, such as law infrastructure and contract standard, and lack of human resource to operate the system will require considerable amount of cost.

5.2.3 Two-sided market in Islamic Finance

The Islamic Finance is used by those who find the value of transaction in compliance with shari'ah. On the other hand, there is a regulation which borrowers business needs to be shari'ah compliant to purchase fund of the Islamic Finance. In indirect finance by the Islamic Banks offering the Islamic Finance, the Islamic Banks set the commission to borrowers (loan interest) and PLS rates to depositors (saving interest). In this chapter, transaction mechanism of the Islamic Finance as is motioned above is formulated by using two-sided model (Rochet, 2003; Rochet, 2006). Moreover, it reveals the mechanism of how the Islamic Banks set quasi-interest such as the commission to borrowers and PLS rates to depositors in the Islamic Finance.

Markets which provide a "platform" that makes mutual activity, such as transactions, between users are called two-sided markets (Rochet, 2003). Good example of this market is Credit Card. There is a character which realizes the business by placing both of the trading sides on same "platform". To spread the transaction using VISA Card, sufficient number of both buyers and sellers needs to be registered to VISA Card system. Demands of both sellers and buyers of products need to be balanced in two-sided market.

Rochet and Tirole (2006) defined two-sided markets as follows:

Say the total volume of transaction using platform is V . The price for users on one side per transaction is a_1 , and on the other side a_2 . When total volume of transaction using platform V depends on the total price that the platform charges $a = a_1 + a_2$, the market of the platform is defined as one-sided market. On the other hand, market is two-sided if the total volume of transaction changes when the total price of the platform a is constant and price of one side a_1 changes.

This study focuses the character of two-sided markets which Islamic Finance has. It is possible to interpret the Islamic Banks as the platform which mediates the transaction of the Islamic Finance.

Islamic Banks need to balance the demands on both sides, such as of depositors' deposit demand and of quasi-borrowers' funds demand. Even if the volume of deposit were large by setting PLS rates preferable to depositors, actual volume of funds mediated between depositors and quasi-borrowers would remain small when there were not enough quasi-borrowers to purchase their funds from the Islamic Banks. Therefore, the Islamic Banks are able to increase the actual volume of funds to mediate by balancing the PLS rates appropriately to both depositors and quasi-borrowers. Two-sided character of the Islamic Finance market does not explain conventional finance market's character. Conventional finance market has competitive circumstances in both deposit market and lending market. Price divergence from the price decided by competitive market would outflow the customers of both deposit and lending markets.

On the other hand, the Islamic Banks have certain monopoly power in both deposit and financing markets in the Islamic Finance. In this case, Islamic Banks are able to control the total volume of transaction by deciding PLS rates.

5.2.4 Framework of Analysis

By conceptualizing the Islamic Finance as a platform and formulating the Islamic Finance market as a two-sided market, it can reveal the endogenous determination mechanism of fund procurement cost considering the additional values of the Islamic Finance explicitly as a transaction method. This chapter's main target is to answer to the question that is "how the development of the Islamic finance market in future effects to the fund procurement cost of the Islamic Finance?" Therefore, a finance market model needs to be formulated considering the economic value of the shari'ah compliant Financing compared with the conventional financing method. In the next section a prototype model of the Islamic Finance market is formulated which explains interest decision making of the Islamic Finance. The impact to the Islamic Finance is studied in section 4 by conducting comparative statics analysis of the parameters which seems to be variable by the development of the Islamic Finance.

5.3 Islamic Finance Market Model

5.3.1 Precondition of the Model

Bank which has financial intermediation function is positioned as a platform for indirect financial transaction as is shown in Figure 5.1.

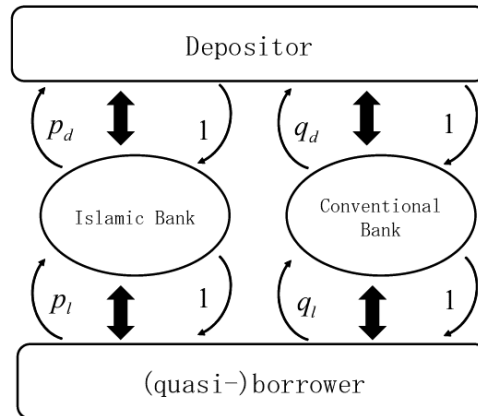


Figure 5.1 Structure of Model

Financial intermediary does not come into effect unless it is balanced by depositor's fund supply and borrower's fund demand. This kind of structure of financial intermediary is able to be formulated using the framework of two-sided model.

First of all, the simplest model is concerned as a base case model. It has two types of banks, one is conventional bank in complete competitive market, and another is the Islamic bank which is able to deal within the Islamic Finance framework. As it is shown in Figure 5.1, q_d is defined as the amount which conventional bank agrees to return after receiving one (1) unit of deposit from depositors (payment to depositors from conventional bank), and p_d as the amount which the Islamic Bank agrees to return (payment to depositors from the Islamic Bank). q_d-1 is equivalent to interest rate of deposit in the concept of conventional finance. Moreover, p_d-1 is defined as quasi-interest rate of deposit in the Islamic Finance for convenience. Furthermore, q_l is defined as the amount which a borrower agrees to return after borrowing one (1) unit of loan from conventional bank (payment to conventional bank from borrower), and p_l as the amount which are returned to the Islamic Bank (payment to the Islamic Bank from quasi-borrower). q_l-1 is equivalent to interest rate of loan in the concept of conventional finance. Moreover, p_l-1 is defined as quasi-interest rate of loan in the Islamic Finance for convenience. Assuming that

conventional financial market is complete competitive, q_d and q_l , interest rate of conventional bank, are given exogenously, and satisfy $q_d = q_l = q_b$.

Depositor's utility depends on 1) whether the bank to save their deposit is Islamic or not, and 2) the degree of the self-awareness to the Islam. The following utility function is assumed to demonstrate this kind of utility which is mentioned above. Say depositor's utility u_S is obtained by saving their deposit in the Islamic Bank, and u_N in conventional bank.

(5.1)

$$\begin{cases} u_S = p_d - 1 + \theta \\ u_N = q_d - 1 \end{cases}$$

where θ is additional utility which depositors obtain by saving their deposit to the Islamic Bank (hereinafter called "the Islamic Utility"). Depositor's Islamic Utility θ is assumed to be a random variable which follows density function $f(\theta)$, and distribution function $F(\theta)$ in the space of nonnegative real numbers $R_+ = [0, +\infty)$. However, $f(\cdot)$ is assumed to satisfy the following condition.

(5.2)

$$f'(\cdot) < 0, f''(\cdot) > 0$$

Each depositor decides which bank to save his deposit after determining his Islamic Utility. Where assumption of $\theta \geq 0$ indicates that even a depositor who does not find any additional utility, if the interest (including quasi-interest) is equal, will be at least indifferent to conventional and the Islamic Bank.

There are fund deficit units (that is borrower) potentially in loan market. Borrowers do not possess their own fund to start business with and need to borrow from (be financed by) Bank. It is assumed that the rate of return of quasi-borrower's business r is considerably large and potential quasi-borrower is able to borrow from (be financed by) either conventional bank or the Islamic Bank in basic model. If quasi-borrower desires to be financed by the Islamic Bank, his business needs to be shari'ah compliant. There are many types of business which does not need to be investigated carefully to comply with shari'ah. On the other hand, there are possibilities that the rate of return is limited due to the conditions to keep the business shari'ah compliant. Moreover, there could be certain transactions which require essential costs, such as quasi-borrowers learning the knowledge and risk in applying the Islamic Finance. These transaction costs are described as ω which is unavoidable to apply the Islamic Finance. This ω is assumed to be a random variable which follows density function $g(\omega)$ and distribution function $G(\omega)$ in the space of nonnegative real numbers $R_+ = [0, +\infty)$. However, $g(\cdot)$ is assumed to satisfy the following condition.

(5.3)

$$g'(\cdot) < 0, g''(\cdot) > 0 \text{ The restriction by handling "haram"}$$

Say quasi-borrower's utility v_S is obtained by being financed by the Islamic Bank, and v_N by borrowing from conventional bank.

(5.4)

$$\begin{cases} v_S = r - \omega - p_l \\ v_N = r - q_l \end{cases}$$

5.3.2 Quasi-demand Functions

Δ_d represents the difference between the payment to depositors from the Islamic Bank, p_d , and the payment to depositors from conventional bank, q_d .

(5.5)

$$\Delta_d = q_d - p_d$$

Where bank selection behavior of a depositor whose Islamic Utility is θ can be described as follows,

(5.6)

$$\begin{cases} \text{Save to the Islamic Bank} & \theta \geq \Delta_d \\ \text{Save to conventional bank} & \theta < \Delta_d \end{cases}$$

If $\Delta_d < 0$, that is the payment to depositors from the Islamic bank p_d is greater than the payment to depositors from conventional bank q_d , all the depositors will save their deposits on the Islamic Bank. In this case, two financial schemes, the Islamic Finance and the conventional finance cannot coexist. Therefore, in this study only deal with $\Delta_d \geq 0$ case, that is $p_d \leq q_d$ from here.

Quasi-demand function (Rochet, 2003) $D_d(p_d)$ in the deposit market of the Islamic bank is described as follows.(Figure 5.2)

(5.7)

$$D_d(p_d) = \int_{\Delta_d}^{+\infty} f(\theta) d\theta = F(\theta \geq \Delta_d)$$

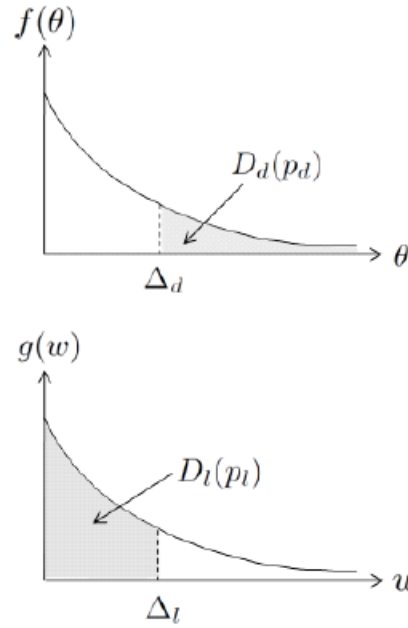


Figure 5.2 Structure of Quasi-demand Function

From assumption (5.2), quasi-demand function in the deposit market of the Islamic bank has the following characteristics.

$$\frac{dD_d(p_d)}{dp_d} > 0, \quad \frac{d^2D_d(p_d)}{dp_d^2} > 0 \quad (5.8)$$

Moreover, if the payment to depositors from the Islamic Bank p_d is equal to the payment to depositors from conventional bank q_d and satisfy $p_d = q_d$, All the depositors who have their Islamic Utility non-negative $\theta \geq 0$, will save their deposit in the Islamic Bank. Therefore, it will satisfy the following formula.

$$D_d(q_d) = 1 \quad (5.9)$$

Similarly, the difference between the payment to the Islamic Bank, p_l , and the payment to conventional bank, q_l , is demonstrated as follows;

$$\Delta_l = q_l - p_l \quad (5.10)$$

where bank selection behavior of a quasi-borrower can be described as follows,

(5.11)

$$\begin{cases} \text{financed by the Islamic Bank} & \omega \leq \Delta_l \\ \text{borrowed from conventional bank} & \omega > \Delta_l \end{cases}$$

If $\Delta_l < 0$, it means the payment to the Islamic bank p_l is greater than the payment to conventional bank q_l , all the quasi-borrowers will obtain the fund from conventional bank. In this case, the Islamic Finance and the conventional finance cannot coexist. Therefore, this study will only deal with $\Delta_l \geq 0$ case, that is $p_l \leq q_l$ from here. Quasi-demand function (Rochet, 2004) $D_l(p_l)$ in the loan/financing market of the Islamic Bank is described as follows (Figure 5.2);

(5.12)

$$D_l(p_l) = \int_0^{\Delta_l} g(\omega) d\omega = G(\omega \leq \Delta_l)$$

From assumption (5.3), quasi-demand function in the loan/financing market of the Islamic bank has the following characteristics.

(5.13)

$$\frac{dD_l(p_l)}{dp_l} < 0, \quad \frac{d^2D_l(p_l)}{dp_l^2} > 0$$

Moreover, if the payment to the Islamic bank p_l is equal to the payment to conventional bank q_l and satisfy $p_l = q_l$, All the quasi-borrowers who spends additional transaction cost ω as $\omega \geq 0$, will obtain their fund from conventional bank. Therefore, it will satisfy the following formula.

(5.14)

$$D_d(q_l) = 0$$

5.3.3 Two-sided Character of Islamic Finance Market

Let us confirm that the Islamic Finance Market satisfies the character of two-sided market under the preconditions mentioned above. When the payment to depositors from the Islamic Bank is p_d , and to bank from quasi-borrower is p_l , the volume of transaction by the Islamic Finance is defined as amount of fund which actually had been financed, such as $V(p_d, p_l)$. If the quasi-demand of financing market exceeds that of deposit market $V(p_d, p_l)$ will be equal to quasi-demand of deposit market, and the quasi-demand of

deposit market exceeds that of financing market V will be as same as that of financing market. Therefore the volume of transaction by the Islamic Finance will be formulated as follows,

(5.15)

$$V(p_d, p_l) = \min\{D_d(p_d), D_l(p_l)\}$$

5.3.4 Social Optimum Solution

Here, the socially optimum payment to depositors from the Islamic Bank and payment to the Islamic Bank from quasi-borrower are derived as a benchmark to evaluate the economic efficiency. It is assumed that the Islamic Bank needs to finance the entire fund that they have purchased from depositors.

First of all, surplus which is obtained by the Islamic bank Sector $\phi(p_d, p_l)$ is described as follows from the assumption of $q_d = q_l$ and $D_d(p_d) = D_l(p_l)$.

(5.16)

$$\begin{aligned}\phi(p_d, p_l) &= p_l \times \min\{D_d(p_d), D_l(p_l)\} - p_d D_d(p_d) \\ &= \Delta_d D_d(p_d) - \Delta_l D_l(p_l)\end{aligned}$$

Surplus of conventional bank sector is ZERO from the assumption of the complete competition market. Secondly, Surplus of quasi-borrowers $\psi_l(p_l)$ is sum of surplus of quasi-borrowers' from Islamic Banks and that of the borrowers from conventional banks.

(5.17)

$$\begin{aligned}\psi_l(p_l) &= \int_0^{\Delta_l} (r - \omega - p_l) g(\omega) d\omega + \int_{\Delta_l}^{+\infty} (r - q_l) g(\omega) d\omega \\ &= \int_0^{\Delta_l} (\Delta_l - \omega) g(\omega) d\omega + r - q_l\end{aligned}$$

Surplus of depositors is summing of surplus of depositors those who save their fund to the Islamic bank, and that of those to conventional bank.

(5.18)

$$\begin{aligned}\psi_d(p_d) &= \int_0^{\Delta_d} (q_d - 1) f(\theta) d\theta + \int_{\Delta_d}^{+\infty} (p_d - 1 + \theta) f(\theta) d\theta \\ &= \int_{\Delta_d}^{+\infty} (\theta - \Delta_d) f(\theta) d\theta + q_d - 1\end{aligned}$$

Total surplus of whole financial market $W(p_d, p_l)$ is defined as sum of surplus of the Islamic Bank sector, conventional bank sector, and depositors as is mentioned above.

(5.19)

$$W(p_d, p_l) = \phi(p_d, p_l) + \psi_d(p_d) + \psi_l(p_l) \\ = \int_{\Delta_d}^{+\infty} \theta f(\theta) d\theta + q_d - 1 - \int_0^{\Delta_l} \omega g(\omega) d\omega + r - q_l$$

Here, the problem to calculate socially optimum payment to depositors from the Islamic bank and payment to the Islamic Bank from quasi-borrowers can be formulated as follows,

(5.20a)

$$(p_d^{FB}, p_l^{FB}) = \arg \max_{(p_d, p_l)} W(p_d, p_l)$$

(5.20b)

$$\text{s.t. } D_d(p_d) = D_l(p_l)$$

By solving this optimization problem, the following Lemma 1 derives.

Lemma 1 Socially optimum quasi-interest p_d^{FB} and p_l^{FB} satisfy following characteristics.

(5.21a)

$$p_d^{FB} = p_l^{FB}$$

(5.21b)

$$D_d(p_d^{FB}) = D_l(p_l^{FB})$$

Lemma 1 indicates following two conditions are required to maximize social welfare, 1) quasi-demand of deposit and financing markets are equal, and 2) the optimum payment to depositors from the Islamic bank and payment to the Islamic bank from quasi-borrowers are equal. Moreover, the transaction volume of the Islamic Finance to maximize social welfare is the point which the aggregated marginal utility of the Islamic Financial transaction and marginal cost of the Islamic Finance is equal.

5.3.5 The Islamic Bank's Monopoly Behavior Model

To reveal the decision structure of quasi-interest of the Islamic Finance in its embryonic period, the Islamic Bank's behavior is analyzed under Islamic banks' monopolized market circumstances which decision of quasi-interest of the Islamic Bank have an impact to its transaction volume. The Islamic Bank

decides the payment to depositors from the Islamic Bank p_d and payment to the Islamic bank from quasi-borrower to p_l to maximize its profit. As maximizing model of the social welfare, it is assumed that the Islamic Bank has a condition that its supply and demand from quasi-borrower to p_l to maximize its profit.

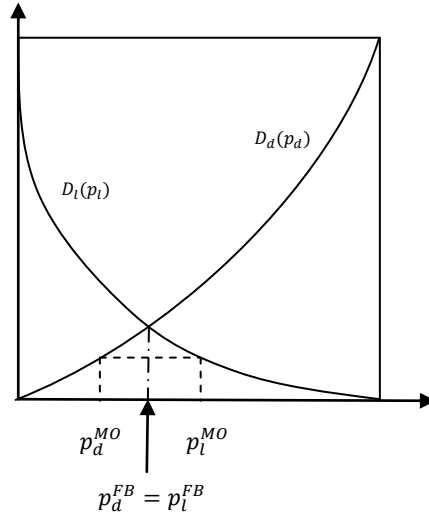


Figure 5.3 Price decision structure of the Islamic financial market

As maximizing model of the social welfare, it is assumed that the Islamic Bank has a condition that its supply and demand needs to be equalized (Figure 5.3). In this case, the Islamic Bank's profit maximization problem can be formulated as follows,

(5.22)

$$\begin{aligned} & \max \phi(p_d, p_l) \\ & (p_d, p_l) \\ & \text{s.t. } D_d(p_d) = D_l(p_l) \end{aligned}$$

If the condition which is satisfied by the optimum solution selected by the Islamic bank under its monopoly market is derived, the following **Proposition 1** is obtained.

Proposition 1 the payment to depositors from the Islamic Bank p_d^{MO} and payment to the Islamic Bank from quasi-borrowers p_l^{MO} which maximizes the Islamic Bank's monopoly profit satisfies the following formulas.

(5.23a)

$$p_l^{MO} = \alpha p_d^{MO}$$

(5.23b)

$$D_l(p_l^{MO}) = D_d(p_d^{MO})$$

However,

$$(5.24a)$$

$$\alpha = \frac{1 - 1/\eta_d}{1 - 1/\eta_l}$$

$$(5.24b)$$

$$\eta_d = -\frac{p_d \left(\frac{dD_d}{dp_d} \right)}{D_d} (< 0)$$

$$(5.24c)$$

$$\eta_l = -\frac{p_l \left(\frac{dD_l}{dp_l} \right)}{D_l} (> 0)$$

If the quasi-interests are compared with those of "first best" case, the following formations are derived.

$$(5.25a)$$

$$p_d^{FB} > p_d^{MO}$$

$$(5.25b)$$

$$p_l^{FB} < p_l^{MO}$$

As it is describe in the previous subsection, when $p_d > p_l$ is satisfied, social welfare can be improved in any case. Therefore, social welfare $W(p_d^{MO}, p_l^{MO})$ under the monopoly market circumstances satisfies the following condition and the equilibrium of monopoly market could be judged socially inefficient.

$$(5.26)$$

$$W(p_d^{MO}, p_l^{MO}) < W(p_d^{FB}, p_l^{FB})$$

5.3.6 Ramsey Optimum Pricing Regulation

When the Islamic Bank has monopoly power; the optimum situation that maximizes social welfare cannot be realized. Here, a pricing regulation by Ramsey Price is considered as a strategy to improve social welfare in monopoly market. Ramsey Price is the price that maximizes consumers' surplus that is social

surplus, under the condition that limits the producers' surplus to ZERO. As it is obvious by the analysis result in **5.3.4**, it is indicated that the Islamic Bank's surplus with social optimum solution will be ZERO. Therefore, it is secured that Ramsey optimum solution which can be realized by Ramsey Pricing regulation will be equal to socially optimum solution.

This result is indicated as **Proposition 2**

Proposition 2 Ramsey optimum solution is equal to socially optimum solution.

5.3.7 Complete Competitive Market

Here, a case of complete competitive market is analyzed because there are many global financial organizations entering to the Islamic Financial market, and it is getting more competitive increasingly in recent years.

Here, let us consider a case that the Islamic Bank sets quasi-interest rate which satisfies $\hat{p}_l > \hat{p}_d$ and $D_d(\hat{p}_d) = D_l(\hat{p}_d)$. The Islamic Bank obtains positive profit in this case. Moreover, $V(\hat{p}_d, \hat{p}_l) = \hat{V} < V(p_d^{FB}, p_l^{FB})$ is satisfied. If the cost for new entry to the market can be neglected, new entrant Islamic Bank can definitely obtain positive profit by setting p_d, p_l which make transaction volume, $\hat{V} + dV$, slightly larger than \hat{V} . Repeating this new entry process, the following conditions are satisfied in complete competitive equilibrium.

$$(5.27a)$$

$$p_d^{PC} = p_l^{PC}$$

$$(5.27b)$$

$$D_d(p_d^{PC}) = D_l(p_l^{PC})$$

Comparing with condition formula of socially efficient solution in **Lemma 1**, it is secured that the complete competitive equilibrium is equal to the socially efficient solution. **Proposition 3** is described by the result of analysis above.

Proposition 3 The efficient solution in complete competitive Islamic Financial Market is equal to social optimum solution.

5.4 Comparative Statics Analysis

5.4.1 Increase of the Islamic Utility

Now, let us analyze the impact when self-awareness of Muslims to Islam increases subjective Islamic Utility. Say, as a result of increased self-awareness to the Islam, the distribution function increased from $F(\cdot)$ to $\tilde{F}(\cdot)$ which stochastically rules original function $F(\cdot)$. Here, density function of $\tilde{F}(\cdot)$ is described as $\tilde{f}(\cdot)$. Where, Monotone Likelihood Ratio Condition (MLRC) is assumed in relation between two (2) probability density functions.

$$(5.28)$$

$$\frac{d(f/\tilde{f})}{d\theta} < 0$$

MLRC condition requires f/\tilde{f} is monotone decreasing to θ . Here, the following formula is satisfied by any θ on probability density function $F(\cdot)$ and $\tilde{F}(\cdot)$.

$$(5.29)$$

$$\tilde{F}(\theta) \leq F(\theta)$$

Quasi-demand function based on distribution function \tilde{f} satisfies the following formulas.

$$(5.30)$$

$$\left\{ \begin{array}{l} \frac{dD_d(p_d)}{dp_d} > \frac{d\tilde{D}_s^d(p_d)}{dp_d} > 0 \\ \frac{d^2D_d(p_d)}{dp_d^2} > \frac{d^2\tilde{D}_s^d(p_d)}{dp_d^2} > 0 \\ \tilde{D}_s^d(0) > D_s^d(0) \\ \tilde{D}_s^d(q_d) = D_s^d(q_d) = 1 \end{array} \right.$$

Here, the quasi-interest in monopoly market after distribution function has shifted to \tilde{F} is described as $p_d^{MO_0}, p_l^{MO_0}$ and quasi-interest in social optimum solution as $p_d^{FB_0}, p_l^{FB_0}$. Then the following formulas are satisfied.

$$(5.31a)$$

$$p_d^{MO_0} < p_d^{MO}, p_l^{MO_0} < p_l^{MO}$$

$$(5.31b)$$

$$p_d^{FB} = p_l^{FB} > p_d^{FB_0} = p_l^{FB_0}$$

Moreover, the following is also satisfied.

$$(5.32)$$

$$W(p_d^{FB}, p_l^{FB}) < W(p_d^{FB_0}, p_l^{FB_0})$$

The **Proposition 4** is obtained from what is mentioned above.

Proposition 4 The more depositors' self-awareness to Islam and additional utility of saving fund to the Islamic Bank increase, the more equilibrium in monopoly market, payment to the bank from quasi-borrowers and to depositor from the bank in social optimum solution will decrease, and also social welfare definitely increases.

5.4.2 Impact of reducing transaction cost

Here, let us consider the case that transaction cost of quasi-borrowers in using the Islamic Finance shifted decreasingly in whole by development of the Islamic Finance. Say, as a result of decreased transaction cost, the distribution form $G(\cdot)$ of transaction cost ω shifted to $\tilde{G}(\cdot)$, and the distribution function of $\tilde{G}(\cdot)$ is described as $\tilde{g}(\cdot)$. However, as the previous subsection, monotone likelihood ratio condition (MLRC) is assumed in relation between two (2) probability density functions.

(5.33)

$$\frac{d(\tilde{g}/g)}{d\omega} < 0$$

Here, the following formula is satisfied by any ω on probability density function $G(\cdot)$ and $\tilde{G}(\cdot)$.

(5.34)

$$\tilde{G}(\omega) \geq G(\omega)$$

Quasi-demand function based on distribution form \tilde{G} satisfies the following formula.

(5.35)

$$\tilde{D}_l(p_l) \geq D_l(p_l)$$

Here, the quasi-interest in monopoly market after distribution function has shifted to \tilde{g} is described as $p_d^{MO_{00}}, p_l^{MO_{00}}$ and quasi-interest in social optimum solution as $p_d^{FB_{00}}, p_l^{FB_{00}}$. Then the following formulas are satisfied.

(5.36a)

$$p_d^{MO_{00}} > p_d^{MO}, p_l^{MO_{00}} < p_l^{MO}$$

(5.36b)

$$p_d^{FB} = p_l^{FB} < p_d^{FB_{00}} = p_l^{FB_{00}}$$

Moreover the following is also satisfied:

(5.37)

$$W(p_d^{FB}, p_l^{FB}) < W(p_d^{FB_{00}}, p_l^{FB_{00}})$$

The following **Proposition 5** is obtained from summarizing what is analyzed above.

Proposition 5 The more quasi-borrowers' transaction cost to use the Islamic Finance decrease, the more equilibrium in monopoly market, payment to the bank from quasi-borrowers and to depositors from the bank in social optimum solution will increase, and also social welfare definitely increases.

5.5 Policy Indication

5.5.1 Impact to Infrastructure Projects

The Islamic Finance is considered as a platform in financial market and formulated as two-sided market. As the result, the Islamic Finance is a system which makes the Islamic Bank capable to purchase the fund from Muslims with low cost and finance to shari'ah compliant business also with low cost. It also indicates that Infrastructure Project Organizers who purchase their fund from the Islamic Finance are able to purchase project fund with low cost relatively. It is also to be said that when the Islamic Financial Market becomes more competitive, the difference of quasi-interest with conventional bank gets larger, and also the purchasing fund from the Islamic Financial Market becomes more attractive for Infrastructure Project Organizers.

The governments of Islamic nations will be able to make fund demanders to access necessary fund relatively with low cost and also make national economy developed by making the Islamic Finance popular. It is also possible that the Islamic Utility increases more when Muslims understand the procedures of the Islamic Finance sufficiently by marketing the Islamic Finance. If the Islamic Bank succeeds in marketing to depositors, it will be able to purchase fund even with lower cost. Therefore, there is possibility that this kind of marketing could reduce fund procurement cost for infrastructure projects that require massive fund procurement, and accelerate the infrastructure implementation as a result.

Development of the Islamic Finance has possibility to increase fund demand of the quasi-borrowers from the Islamic finance and also financing rate in the Islamic Financial Market. Despite of this risk, it is needless to say that a deeper understanding of the Islamic Finance and related topics such as risk

management is definitely an efficient method to procure fund with less cost for the investors in infrastructure projects at the present moment.

5.5.2 Conditional Item

If depositors and quasi-borrower of Islamic Banks, Muslim or Non-Muslim, have any restriction of depositing their money in or borrowing from conventional banks (due to refusal or unavailability of conventional bank for example in Iran or Sudan as mentioned in chapter 2), it cannot be secured that result of analysis in this chapter is always true.

All the indications that are mentioned above are based on the assumption of this chapter that the Islamic Finance is two-sided market. It cannot be secured that the indications derived theoretically are always true in reality. Increase of fund demand to the Islamic Finance could lead the rise of quasi-interest.

5.6 Conclusion

In this chapter the Islamic Financial Market model was formulated which decides simultaneously quasi-interests in both deposit market and financing market to analyze the impact of recent development of the Islamic Finance to infrastructure investment focusing the two-sided character of the Islamic Finance. Moreover, when depositors have additional utility to save their fund in the Islamic Bank rather than in conventional bank, it revealed that the quasi-interest of the Islamic Bank in both deposit and financing market will be lower than the interests of conventional bank, through comparative statics analysis of market equilibrium. It also indicated that the more competitive the market becomes, the difference of quasi-interest becomes larger. Moreover, the deeper the depositors' understanding of the Islamic Finance and the larger the demand of the deposit, the more the volume of the Islamic Finance and social welfare increases. If the standardization of the Islamic financial transaction is improved and the transaction fee using the Islamic finance reduces, the volume of the Islamic finance will increase and also the quasi-interests rise. Using the Islamic Finance will be an alternative to make all parties more competitive by reducing the transaction cost, such as revealing the shari'ah compliant eligibility or hedging risk of the Islamic law for enterprises which are willing to enter to infrastructure projects in the future.

The followings are the remaining problems for future works. 1) When Muslim depositors refuse to save their fund in conventional bank, the result of this chapter is not always true. 2) A model considering only two platforms was proposed, such as conventional finance and the Islamic Finance, as financial

transaction methods in this chapter. However, in actual transaction, financial organizations that have entered the Islamic financial market are executing various differentiation strategies including shari'ah compliant degree. 3) Any cost of Islamic Banks was not taken into account in this chapter. However, Islamic Banks spend considerably to secure the shari'ah compliant of the financed businesses. Average cost of Islamic Bank will reduce when the volume of transaction increases. By structuring the Islamic financial model considering differentiation strategy and economy of scale, more micro level strategy could be analyzed.

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Chapter 6

Conclusion and Future Study

6.1 Summary and Recommendations

The main objective of this dissertation is to provide a framework for Islamic approach to the contract management and financing of infrastructure projects. The main question of the research which is; What are the main characteristic of an Islamic approach to infrastructure projects that may make a remarkable difference with conventional approach?; is approached by a very comprehensive literature review starting from basic definitions of shari'ah and shari'ah compliance and then followed by a comprehensive study about contracts, risk and risk management in contracts and in shari'ah. This literature review includes the statements from main shari'ah resources Quran, Hadith and the jurist's opinion extracted from secondary resources. This literature review also consists of a huge amount of papers and writings which describe Islamic finance and Islamic risk management tools and methods. After literature review some analytical tools such as game theory has been utilized to interpret notion of risk and gharar in Islam through some controversial transactions. By applying the resulted framework, some standard forms of contract have been analyzed and also a model is derived for an efficient risk allocation in Islamic fund procurement.

The importance and objective of research through some facts about Islamic economics and Islamic finance was presented in chapter 1. The main question of the research was developed through some discussion and the main structure of chapters and dissertation was introduced.

In Chapter 2, the basic concept of the study about shari'ah, shari'ah compliance, and shari'ah compliant contract was developed. To find out the notion of Shari'ah Compliance; the main challenge to be discovered was; what are the relevant prescriptions in shari'ah? This led us to a very brief study of Islamic jurisprudence, i.e. the investigation of Islamic texts which are the sources of shari'ah. These texts include the Quran, the traditions, and the *fiqh* books of authoritative scholars filled with casuistry and reasoning by analogy or other type of reasoning. The main challenge in this concern was "How shari'ah is understood and applied?". The concept of shari'ah as used in religious, legal, political and economic discourse conveys different meanings. In this regard four types of shari'ah was described: the abstract

shari'ah, the classical shari'ah, the historical shari'ah(s), and the contemporary shari'ah(s). The main concern is to clarify the contemporary shari'ah; however, it is inevitable to briefly introduce the other types. Later in the Chapter 2 in order to make a comparative study among the current situation of Muslim countries, the relation between shari'ah and national and sub-national law of Muslim countries is considered. As a result the legal system of Muslim countries is classified into three groups, the main group with a mixed system and two small groups with classical shari'ah system and secular system. Moreover; the Islamic Financial Institution regulatory and supervisory system of Muslim countries could be classified into four shari'ah governance models as; passive approach, minimalist approach, pro-active approach and passive-interventionist approach. Then, a shari'ah compliant construction contract is defined as a construction contract with its subject matter, agreement, terms and the conditions that embrace the Islamic belief, practice and value system.

In Chapter 3 the Islamic approach to risk and risk management in contracts was investigated. To disentangle risk in Islam, understanding of gharar in transactions is crucial. By discussing different views about prohibition of gharar and tolerable risk, it was concluded that every type of risk or uncertainty is not prohibited in Islam. Risk associated with normal economic transactions, i.e. value-adding and wealth-creating activities is inevitable for the society well-being and acceptable. Only when risk is a tool or mediator to make one party profits at the expense of the other or risk associated with “eating wealth for nothing”, where no net additional wealth is created; it becomes gharar and so it is prohibited. To make a comprehensive measure of gharar, a typical example of gharar narrated by a lot of jurists is considered. This example was modeled through a game theoretic model to be compared with another transaction known as ja'alah to investigate any correlation between notion of gharar and risk management in Islam with some economic variables such as Pareto efficiency, commutative justice, zero-sum payoff, and attitude toward risk. To get a more comprehensive result two other controversial topics also were modeled carefully. Firstly, the Options and its shari'ah equivalent urbun and then insurance and takaful; were investigated. Through a comparative study between insurance and takaful the main points of difference are investigated. Finally regarding to the all cases, some propositions are offered to be used as a measure for gharar and Islamic risk allocation and risk management in contracts. The main recommended measure is related to the risk attitude of parties in a contract.

In Chapter 4, the risk and risk management in construction management was presented through some standard forms of contract such as FIDIC and the variety of FIDIC books which are well-known for a well balanced risk allocation according to the project type and also Iran standard forms of contract. To evaluate the situation of risk management in Iranian construction projects the starting point was expected to be the topic of risk and risk allocation in Iran's standard forms of construction contracts with a special attention to the Islamic approach and notion of gharar based on the results of previous chapters. To make

a better understanding of risk allocation in Iran's standard contracts; the FIDIC was considered to be a base point. As a result of a word by word comparison between Iran EPC 84 and FIDIC Yellow Book, some main topics were emphasized and then based on these topics the risk allocation has been compared between Iran EPC 84 and three main FIDIC forms of contract. The other presented subject was the breach and termination of contract. The main idea and general views about breach and efficient remedies for breach was argued including the Islamic view point. Finally, a comparison between another Iran's standard forms of contract namely Iran 4311 and FIDIC Redbook from the breach and termination point of view was made. As a result, the standard forms of construction contracts used in Iran are not shari'ah compliant from the risk and risk allocation point of view compared with FIDIC ones.

In Chapter 5, a formulation of the Islamic Financial Market was presented which decides simultaneously quasi-interests in both deposit market and financing market to analyze the impact of recent development of the Islamic Finance to infrastructure projects focusing the two-sided character of the Islamic Finance. It was indicated that when depositors have additional utility to save their fund in the Islamic Bank rather than in conventional bank, the quasi-interest of the Islamic Bank in both deposit and financing market will be lower than the interests of conventional bank, through comparative statics analysis of market equilibrium. It was also indicated that the more competitive the market becomes, the difference of quasi-interest becomes larger. Moreover, the deeper the depositors' understanding of the Islamic Finance and the larger the demand of the deposit, the more the volume of the Islamic Finance and social welfare increases. If the standardization of the Islamic financial transaction is improved and the transaction fee using the Islamic finance reduces, the volume of the Islamic finance will increase and also the quasi-interests rise. Using the Islamic Finance will be an alternative to make all parties more competitive by reducing the transaction cost, such as revealing the shari'ah compliant eligibility or hedging risk of the Islamic law for enterprises which are willing to enter to infrastructure projects in the future.

6.2 Recommendation for Future Study

This research could be as a starting point and pioneer to the Islamic approach to the contract management and financing of infrastructure projects or more generally any type of construction project. Therefore, any subject in a contract could be a new topic for a future study. Among these some could be mentioned as follow:

- A comprehensive survey about current practice in construction procurement in any Muslim country.

- A comparative study of standard forms of construction law in different Muslim countries from the shari'ah compliance point of view.
- An empirical study about the perception of gharar among contemporary jurists which could be implemented through questionnaires or by studying real decisions made by Shari'ah Advisory Board in IFIs.
- An empirical investigation about the attitude toward risk in Muslim societies.
- To consider real costs of Islamic banks to develop a more precise model of PLS.

Appendix 1

Table A.1.1 Comparison between FIDIC Design and Build 1999 Yellow Book and EPC 84 Iran- General Conditions

Clause or Sub-Clause	FIDIC-YELLOW	EPC84	Result and Description
1.1.4.1	<p>"Accepted Contract Amount" means the amount accepted in the Letter of Acceptance for the design, execution and completion of the Works and</p> <p>the remedying of any defects.</p>	<p>"Accepted Contract Amount" means the amount accepted in the Letter of Acceptance, for execution and completion of the Works and</p> <p>the remedying of any defects.</p>	<p>General Definition</p> <p>Even in the clause 5 has been mentioned that contractor is responsible for designing works!</p>
1.1.5.4	<p>"Permanent Works" means the Permanent Works to be designed and executed by the Contractor under the Contract.</p>	<p>"Permanent Works" means the Permanent Works to be executed by the Contractor under the Contract.</p>	<p>General Definition</p> <p>Same as above!</p>
1.1.6.2	<p>"Country" means the Country in which the Site (or most of it) is located, where the Permanent Works are to be executed.</p>	<p>Has been added that country means Iran unless otherwise stated in the particular conditions</p>	<p>Localization</p> <p>Sort of localization with keeping chance for international contracts!</p>
1.2	<p>(a) words indicating one gender include all genders;</p>	<p>Removed</p>	<p>Localization-Gender</p> <p>Women participation has been neglected!</p>
1.4	<p>Law and Language</p> <p>The Contract shall be governed by the law of the Country (or other jurisdiction) stated in the</p>	<p>The law governing the contract is Islamic Republic of Iran's Law and the language is Persian unless otherwise -in case of language only-stated in the</p>	<p>Localization – Law and language</p>

	Appendix to Tender.	Appendix to Tender. The agreement and Contract's Conditions are in Persian.	<u>Only language can change and governing law in any case is Iran's law</u>
1.5	Priority of Documents If an ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction.	If an ambiguity or discrepancy is found in the documents, the Engineer shall proceed in accordance with sub-claus 3.5(determinations) if necessary.	Engineer's authorities Down
1.7 Assignment	-	(c) Employer may assign his rights and obligations to the related subsidiaries which mentioned in the particular conditions if any.	Localization Regarding the organization chart of public organizations looks normal.
1.15	N.A	Privacy The privacy regulations if any, shall be stated in the particular conditions	-
3.1 Engineer	The Employer undertakes not to impose further constraints on the Engineer's authority, except as agreed with the Contractor.	Deleted	Engineer's authorities Down Employer's authorities Up
3.2	The Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [<i>Determinations</i>].	The Engineer shall not delegate the authority to determine any matter in accordance with Sub-Clause 3.5 [<i>Determinations</i>]. Unless agreed by two parties.	Engineer's authorities Down
3.5	Determination ... If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances. The	...If agreement is not achieved, the Engineer shall make a fair determination in accordance with the Contract, taking due regard of all relevant circumstances. The Engineer shall give notice to both Parties	Engineer's authorities Down Employer's

	Engineer shall give notice to both Parties of each agreement or determination, with supporting particulars...	<u>of his judgement</u> with supporting particulars <u>then employer shall make a fair determination and give notice to engineer and contractor. ...</u>	authorities Up
4.2 Performance Security	The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount and currencies stated in the Appendix to Tender. <u>If an amount is not stated in the Appendix to Tender, this Sub-Clause shall not apply.</u> <u>...Performance Security shall be in the form annexed to the Particular Conditions</u>	The Contractor shall obtain (at his cost) a Performance Security for proper performance, in the amount and currencies stated in the Appendix to Tender. <u>...Performance Security shall be in the form determined in the Appendix to Tender</u>	Employer's Benefit Up The differences are slightly for making more security for employer. In this case Performance Security shall be one of contract's documents.
4.8 Safety Procedure	-	Employer has no responsibility in any safety case in the site. Engineer may cease the work or part of it which does not comply with safety procedures.	Employer's Responsibility Down A part has been added in order to relief the employer's whole responsibility about safety in the site
6.12	-	Foreign staffs and labors. They could be employed in case of having no legal limitations.	Localization
6.13	-	Protection of Insects and baneful animals. Contractor's duty	Localization Contractor's Responsibility Up One extra duty

			for contractor and Iran compliant sub-clause!
6.14	-	Alcohol and Drugs. Contractor shall not import and sell Alcohol and drugs or facilitate it for labors.	Localization Contractor's Responsibility Up Another duty for contractor and Shariah compliant sub-clause!
6.15	-	Arms and Arsenal. Contractor shall not participate in these type of business	Localization Is it necessary to re-ban the illegal affairs?
6.16	-	Ceremonies, Religious and National holidays. Shall be respected by contractor.	Localization Iran and Shariah compliant.
7-9	-	The financing of the project if any stated in the particular conditions.	Financial
8-13	-	Reward for early completion. If the work or part of it, is completed earlier than completion time, contractor shall be entitled to receive a reward which is determined in Appendix to Tender. The maximum reward shall not exceed 5% of Accepted Contract Amount.	Financial Contractor's Benefit Up
10.1	Taking-over of the works and sections	<u>Taking-over committee</u> is a committee which is established for taking-over of the works and consists of a representative from each party and a representative	Not Clear which party will get more benefit?! May be some

		from engineer.	more bureaucratic process
10.1	<p>Taking-over certificate The Engineer shall, within 28 days after receiving the Contractor's application:</p> <p>(a) issue the Taking-Over Certificate to the contractor, stating the date on which the Works or Section were completed in accordance with the Contract,</p>	<p>The Engineer shall, within 28 days after receiving the Contractor's application, visit the works or sections completely and :</p> <p>(a)Get assured that there is no outstanding defect and state the completion date and invite the Taking-Over Committee to visit the site. The Taking-Over Committee shall attend in the site within the period and if the work is in accordance with the contract -except for any minor defects which will not substantially affect targets-shall issue the Taking-Over certificate .</p>	<p>Engineer's authorities Down</p> <p>*it is a main difference again in order to limit the engineer's authority but regarding that there is a member of contractor in the committee, it could be a positive point for contractor. It is not clear in case of disagreement between members what will happen.</p>
10.2 Taking over of Parts of the works	The Engineer may, at the sole discretion of the Employer, issue a Taking-Over Certificate for any part of the Permanent Works.	The Employer at his sole discretion may take over any part of the permanent works under sub-clause 10.1	<p>Not Clear</p> <p>The sub-clause looks unclear because under 10.1 is not by sole discretion of employer!</p>

11.9 Performance certificate	The Engineer <u>shall issue</u> the Performance Certificate within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. A copy of the Performance Certificate shall be issued to the Employer.	The Engineer <u>shall prepare</u> the Performance Certificate <u>and send it for employer's confirmation</u> within 28 days after the latest of the expiry dates of the Defects Notification Periods, or as soon thereafter as the Contractor has supplied all the Contractor's Documents and completed and tested all the Works, including remedying any defects. Employer shall approve it within 14 days after receive and give notice to the Contractor A copy of the Performance Certificate shall be issued to the Employer.	<p>Engineer's authorities Down</p> <p>Employer's authorities Up</p> <p>*The process has changed again to increase employer's superintendence.</p>
13.1 Right to Vary	Variations may be initiated by the Engineer at any time prior to issuing the Taking-Over Certificate for the Works.	Engineer, after employer's approval, may initiate Variations at any time prior to issuing the Taking-Over Certificate for the Works.	<p>Engineer's authorities Down</p> <p>Employer's authorities Up</p> <p>*The process has changed again to increase employer's superintendence.</p>

13.2 Value Engineering	-	Any proposal from contractor to make a change in design for reducing the cost or time ...could be entitled to get a reward. It could be half of the percentage stated in Appendix to Tender.	<p>Contractor's Benefit up</p> <p>Employer's Benefit unclear</p> <p>*Making incentive for improving efficiency and effectiveness at work. It is very unclear and could depend on employer.</p>
13.3 Variation Procedure	-	<p>(d) Total amount of variations including Variations under sub-clause 13.6 and excluding Variation under sub-clause 13-2 and 1307 shall not exceed:</p> <ol style="list-style-type: none"> 1. 25% more than Accepted Contract Amount 2. 25% less than Accepted Contract Amount unless contractor agrees to continue with decreased amount, otherwise he can terminate the contract under 16.2. 	<p>Not Clear</p> <p>Two items added to variation conditions both in decreasing and increasing limitation.</p>

13.7 Adjustments for Changes in Legislation	-	<p>Has been added at the end of this Sub-clause:</p> <p>If Adjustment in Legislation decrease the time for completion or Contractor's costs, Employer or Engineer may proceed subject to Sub-Clause 2.5 [<i>Employer's Claims</i>]</p>	<p>Employer's risk down</p> <p>Contractor's risk's up</p> <p>Part of additional claim for Employer.</p>
13.8 Adjustments for Changes in Cost	<p>If this Sub-Clause applies, <u>the amounts payable to the Contractor shall be adjusted</u> for rises or falls in the cost of labour, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause.</p>	<p>If not stated in the particular conditions, <u>the amounts payable to the Contractor shall not be adjusted</u> according to increasing or decreasing of labor, goods and other effective factors.</p>	<p><u>Employer's risk up</u></p> <p><u>Contractor's risk down</u></p> <p>Drastically!</p> <p>A great risk for contractor. Similar to the case of EPC. Even though it could be predicted in the particular conditions.</p>
14.2	<p>deductions shall be made at the <u>amortisation rate of one quarter (25%)</u> of the amount of each Payment Certificate (excluding the advance payment and deductions and repayments of retention) in the currencies and proportions of the advance payment, until such time as the advance payment has been repaid.</p>	<p>deductions shall be made at the amortisation rate of each Payment Certificate (excluding the advance payment and deductions and repayments of retention), as stated in the Appendix to Tender</p>	<p>Referring to particular Conditions</p>
14.8 Delayed Payment	<p>Unless otherwise stated in the Particular Conditions, these financing charges shall be calculated at the annual rate of</p>	<p>Unless otherwise stated in the Particular Conditions, for payments in Rial , these financing charges shall</p>	<p>Localization-Currency exchange and</p>

	three percentage points above the discount rate of the central bank in the country of the currency of payment, and shall be paid in such currency.	be calculated at the annual rate of 5 years accounts noticed by Iran National Bank. For foreign currencies it shall be calculated by inter banks discount rates in the international markets which is determined by Islamic Central bank	discount rate No Shariah compliant condition regarding discount rate.
14.14	However, this Sub-Clause shall not limit the Employer's liability under his indemnification obligations, or the <u>Employer's liability in any case of fraud, deliberate default or reckless misconduct by the Employer.</u>	However, this Sub-Clause shall not limit the Employer's liability under his indemnification obligations.	Employer's Responsibility Down
14.15	Currencies of Payment	Currencies of Payment	Localization-Currency exchange and discount rate
15.2	Termination By Employer	Termination By Employer	Employer's authority up One Phrase has been added to the Employer's entitlement to terminate the Contract.

16.1 Contractor's Entitlement to Suspend the Work	<p>If the Engineer fails to certify in accordance with Sub-Clause 14.6 [<i>Issue of Interim Payment Certificates</i>] or the Employer fails to comply with <u>Sub-Clause 2.4</u></p> <p><u>[Employer's Financial Arrangements]</u> or Sub-Clause 14.7 [<i>Payment</i>], the Contractor may, after giving not less than 21 days' notice to the Employer, suspend work (or reduce the rate of work) unless and until the Contractor has received the</p> <p>Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.</p>	<p>If the Engineer fails to certify in accordance with Sub-Clause 14.6 [<i>Issue of Interim Payment Certificates</i>] or the Employer fails to comply with Sub-Clause</p> <p>Sub-Clause 14.7 [<i>Payment</i>], <u>if the unpaid amount exceed the amount stated in the Appendix to Tender</u>, the Contractor may, after giving not less than 21 days' notice to the Employer, suspend work (or reduce the rate of work) unless and until the Contractor has received the</p> <p>Payment Certificate, reasonable evidence or payment, as the case may be and as described in the notice.</p>	<p>Contractor's risk up</p> <p>One phrase added and one phrase removed to decrease Contractor's entitlement to <u>suspend the work</u>.</p>
16.2 Termination by Contractor	<p>(a) The Contractor does not receive the reasonable evidence within 42 days after giving notice under Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work] in respect of a failure to comply with Sub-Clause 2.4 [Employer's Financial Arrangements],</p>	<p>Not Available.</p>	<p>Contractor's risk up</p> <p>Decreasing Contractor's entitlement to terminate the work.</p>
16.2 Termination by Contractor	<p>the Engineer fails, within <u>56</u> days after receiving a Statement and ...</p> <p>(c) the Contractor does not receive the amount due under an Interim Payment Certificate within <u>42</u> days after the ...</p>	<p>the Engineer fails, within <u>63</u> days after receiving a Statement and ...</p> <p>(c) the Contractor does not receive the amount due under an Interim Payment Certificate within <u>84</u> days after the ...</p>	<p>Employer's responsibility down</p> <p>All days changed to increase the time Employer and Engineer need to perform their duties.</p>

16.2 Termination by Contractor	<p>(d) the Employer substantially fails to perform his obligations under the Contract,</p> <p>(e) the Employer fails to comply with Sub-Clause 1.6 [Contract Agreement] or Sub-Clause 1.7 [Assignment],</p>	<p>(d) The Employer substantially fails to perform his obligations about getting licenses or for ground delivery more than 84 days.</p> <p>(e) Under sub-clause 3-13 phrase 2, the total amount of decrease is more than 25% of Accepted Contract Amount</p> <p>(g) the Employer becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him...</p>	<p>Employer's risk down</p> <p>In (d) the employer's fails is limited to 2 items that are still general.</p> <p>In (e) referred to 3.13 it needed to be changed toward the employer's benefit!</p> <p>The bankruptcy looks strange in public companies.</p>
General Requirements for Insurances 18-1	Contractor, Employer or Jointly Insured	Contractor (unless otherwise stated in particular conditions) If Contractor does not perform his obligations to get insurance, employer will do it on behalf of him	<p>Contractor's responsibility and costs up</p> <p>Employer's responsibility and risk down</p> <p>The Clause 18 is totally changed so the direct Sub-Clauses are not mentioned here.</p>
20.6 Arbitration	<p>Unless settled amicably, any dispute in respect of which the DAB's decision (if any) has not become final and binding shall be finally settled by <u>international arbitration.</u></p> <p>Unless otherwise agreed by both Parties:</p> <p>(a) the dispute shall be finally settled <u>under the Rules of Arbitration of the</u></p>	<p>Unless settled amicably, any dispute in respect of which the DAB's decision (if any) has not become final and binding shall be finally settled by the <u>Iran management and planning organization</u></p> <p><u>Unless otherwise agreed by both Parties. If the Manager of that organization agrees with that requirement the arbitration will be performed by the Technical Council</u></p>	<p>localization</p> <p>The arbitrator from international organizations has changed to the internal ones.</p>

	<p><u>International Chamber of Commerce,</u></p> <p><u>(b) the dispute shall be settled by three arbitrators appointed in accordance with these Rules, and</u></p> <p><u>(c) the arbitration shall be conducted in the language for communications defined in Sub-Clause 1.4 [Law and Language].</u> The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DAB, relevant to the dispute. Nothing shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.</p> <p>Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence or arguments previously put before the DAB to obtain its decision or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the DAB shall be admissible in evidence in the arbitration.</p> <p>Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, the Engineer and the DAB shall not be altered by reason of any arbitration being conducted during the progress of the Works.</p>	<p><u>of that organization. The settlement shall be done according to the contract's framework and other related regulations. After receiving the arbitration both parties shall accept the settlement.</u></p> <p>The arbitrator(s) shall have full power to open up, review and revise any certificate, determination, instruction, opinion or valuation of the Engineer, and any decision of the DAB, relevant to the dispute. Nothing shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator(s) on any matter whatsoever relevant to the dispute.</p> <p>Neither Party shall be limited in the proceedings before the arbitrator(s) to the evidence or arguments previously put before the DAB to obtain its decision or to the reasons for dissatisfaction given in its notice of dissatisfaction. Any decision of the DAB shall be admissible in evidence in the arbitration.</p>	
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Table A.1.2 Risk Related Clauses and Sub-Clauses: Comparison between FIDIC Yellow, Red, Silver and Iran EPC 84 -General Conditions

Clause	Yellow	Red	Silver	IRAN EPC 84
4.7 Setting Out, para. 2 and 3	<p>The Employer shall be responsible for any errors in these specified or notified items of reference, but the Contractor shall use reasonable efforts to verify their accuracy before they are used.</p> <p>If the Contractor suffers delay and/or incurs Cost from executing work which was necessitated by an error in these items of reference, and an experienced contractor could not reasonably have discovered such error and avoided this delay and/or Cost, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 to:</p> <p>(a) an extension of time ...</p> <p>(b) payment ...</p>	Same as Yellow	(There is no responsibility for the Employer in setting out items and contractor is not entitled to any payment and extension of time according to Silver.)	Same as Yellow

<p>4.10 site data</p>	<p>"The Contractor shall be responsible for interpreting all such data. To the extent which was practicable (taking account of cost and time), the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Tender or Works. To the same extent, the Contractor shall be deemed to have inspected and examined the Site, its surroundings, the above data and other available information, and to have been satisfied before submitting the Tender as to all relevant matters, including (without limitation): (a) the form and nature of the Site..."</p>	<p>Same as Yellow</p>	<p><u>"...The Contractor shall be responsible for verifying and interpreting all such data. The Employer shall have no responsibility for the accuracy, sufficiency or completeness of such data, except as stated in Sub-Clause 5.1"</u></p>	<p>Same as Yellow</p>
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4.12	<p>"If and to the extent that the Contractor encounters physical conditions which are Unforeseeable, gives such a notice, and suffers delay and/or incurs Cost due to these conditions, the Contractor shall be entitled subject to Sub-Clause 20.1 [Contractor's Claims] to:</p> <p>(a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [Extension of Time for Completion], and</p> <p>(b) payment of any such Cost, which shall be included in the Contract Price."</p>	Same as Yellow	<p>"Except as otherwise stated in the Contract</p> <p><u>(a) the Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works;</u></p> <p><u>(b) by signing the Contract, the Contractor accepts total responsibility for having foreseen all difficulties and costs of successfully completing the Works; and</u></p> <p><u>(c) the Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs."</u></p>	Same as Yellow
13.7	-	Same as Yellow	Same as Yellow	<p>Has been added at the end of this Sub-clause:</p> <p>If Adjustment in Legislation decrease the time for completion or Contractor's costs, Employer or Engineer may proceed subject to Sub-Clause 2.5 [<i>Employer's Claims</i>]</p>
13.8	<p>...If this Sub-Clause applies, <u>the amounts payable to the Contractor shall be adjusted</u></p>	Same as Yellow	If the contract price is to be adjusted for rises or falls in the cost of labour, Goods and other	If not stated in the particular conditions, <u>the amounts payable to the</u>

	for rises or falls in the cost of labour, Goods and other inputs to the Works, by the addition or deduction of the amounts determined by the formulae prescribed in this Sub-Clause....		inputs to the Works, the adjustment shall be calculated in accordance with the provisions in the Particular Conditions	<u>Contractor shall not be adjusted</u> according to increasing or decreasing of labor, goods and other effective factors.
17.1(a)	"...by reason of the design, execution..."	"...by reason of the <u>Contractor's design(if any)</u> , execution..."	Same as Yellow	Same as Yellow
17.1(b)(i)	"...by reason of the design, execution..."	"...by reason of the <u>Contractor's design(if any)</u> , execution..."	Same as Yellow	Same as Yellow
17.1(b)(ii)	"is attributable to any negligence, willful act or breach of the Contract by the <u>Contractor</u> , the <u>Contractor's</u> Personnel, their respective agents, or anyone directly or indirectly employed by any of them."	Same as Yellow	"is <u>not</u> attributable to any negligence, willful act or breach of the Contract by the <u>Employer</u> , the <u>Employer's</u> Personnel, their respective agents, or anyone directly or indirectly employed by any of them."	Same as Yellow

17.3	Risks referred to in Sub-Clause 17.4 are from (a) to (h) "...(f) use or occupation by the Employer of any part of the Permanent Works, except as may be specified in the Contract (g) design of any part of the Works by the Employer's Personnel or by others for whom the Employer is responsible, if any, and (h) any operation of the forces of nature which is Unforeseeable or against which an experienced contractor could not reasonably have been expected to have taken adequate preventative precautions."	Same as Yellow	Risks (f), (g) and (h) do not appear in Silver	Same as Yellow
17.4 1st para.	"...the Contractor shall promptly give notice to the Engineer and shall rectify this loss or damage to the extent required by the Engineer."	Same as Yellow	"...the Contractor shall promptly give notice to the Employer and shall rectify this loss or damage to the extent required by the Employer."	Same as Yellow
17.4 2nd para.	"... the Contractor shall give a further notice to the Engineer and shall be entitled subject to Sub-Clause 20.1"	Same as Yellow	"... the Contractor shall give a further notice to the Employer and shall be entitled subject to Sub-Clause 20.1"	Same as Yellow
17.4(b),	"payment of any such Cost, which shall be included in the Contract Price. In the case of sub-paragraphs (f) and (g) of Sub-Clause 17.3 [Employer's Risks], reasonable profit on the Cost shall also be included."	Same as Yellow	Does not appear in Silver	Same as Yellow

17.4 last	"... the Engineer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters."	Same as Yellow	... the Employer shall proceed in accordance with Sub-Clause 3.5 [Determinations] to agree or determine these matters.	Same as Yellow
17.5(a)	"...compliance with the Employer's Requirements or..."	"...compliance with the contract , or ..."	Same as Yellow	Same as Yellow
17.5, 4th paragraph	"The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the Contractor's design, manufacture, construction or execution of the Works, (ii) the use of Contractor's Equipment, or (iii) the proper use of the Works."	"The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i)the manufacture, use, sale or import of any Goods, (ii)any design for which the contractor is responsible "	Same as Yellow	Same as Yellow
18.1 2nd para.	"These terms shall be consistent with any terms agreed by both Parties before the date of the Letter of Acceptance"	Same as Yellow	"These terms shall be consistent with any terms agreed by both Parties before they signed the Contract Agreement. .."	No special date appears in IRAN EPC-84
18.1 3rd para.	"Wherever the Employer is the insuring Party..."	Same as Yellow	Same as Yellow	Employer has no liability about insurance in EPC 84 unless otherwise stated in

				Particular Conditions
18.1 4th para.	"If a policy is required to indemnify joint insured..."	Same as Yellow	Same as Yellow	Not appeared
18.1 7th para.	"Whenever evidence or policies are submitted, the insuring Party shall also give notice to the Engineer."	Same as Yellow	Not appeared	Not appeared
18.1 9th para.	"Neither Party shall make any material alteration to the terms of any insurance without the prior approval of the other Party."	Same as Yellow	Same as Yellow	Not appeared
18.1 10th para.	"If the insuring Party fails to effect and keep in force any of the insurances it is required to effect and maintain under the Contract, or fails to provide satisfactory evidence and copies of policies in accordance with this Sub-Clause, the other Party may (at its option and without prejudice to any other right or remedy) effect insurance for the relevant coverage and pay the premiums due."	Same as Yellow	Same as Yellow	18.2: "If the Contractor fail to effect or keep in force all or part of insurances, the Employer may do it and pay all premiums on behalf of Contractor and then may deduct this amount from any money due, or become due, to the contractor."
18.1	Payment is the insurer party's responsibility	Same as Yellow	Same as Yellow	Last Para.:" Unless otherwise stated in the particular conditions, all the premium is the Contractor's liability"

18.2 2nd para	"...damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability] and Clause 12 [Tests after Completion])"	"...damage caused by the Contractor in the course of any other operations (including those under Clause 11 [Defects Liability])"	"...damage caused by the Contractor or Subcontractor in the course of any other operations (including those under Clause 11 [Defects Liability] and Clause 12 [Tests after Completion])"	Not appeared
18.2 (d)	"(d) shall also cover loss or damage to a part of the Works which is attributable to the use or occupation by the Employer of another part of the Works, and loss or damage from the risks listed in sub-paragraphs (c), (g) and (h) of Sub-Clause 17.3 [Employer's Risks], excluding (in each case) risks which are not insurable at commercially reasonable terms, with deductibles..."	Same as Yellow	"...damages from the risks listed in sub-paragraph© of Sub-Clause 17.3[Employer's Risks], with deductible..."	Not appeared
19.6 2nd para.	"Upon such termination, the Engineer shall determine the value of the work done and issue a Payment Certificate which shall include..."	Same as Yellow	"Upon such termination, the Employer shall pay to the Contractor..."	Same as Yellow

Table A.1.3 The summary of breach in FIDIC Redbook

Sub-Clause No.	Employer Breach	Engineer Breach	Contractor Breach	Description	Eligible Party	Result(termination, suspension, damages)
8.6			●	If revised methods which the Contractor proposes to adopt in order to expedite progress and complete within the Time for Completion cause the Employer to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay these costs to the Employer,	Employer	(delay) damages
8.7			●	... fails to comply with Sub-Clause 8.2 [Time for Completion], the Contractor shall subject to Sub-Clause 2.5 [Employer's Claims] pay delay damages to the Employer for this default.	Employer	(delay) damages
8.9	●	●		If the Contractor suffers delay and/or incurs Cost from complying with the Engineer's instructions under Sub-Clause 8.8 [Suspension of Work] and/or from resuming the work, the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 for an extension of time for any such delay and payment of any such cost	Contractor	(delay) damages
8.10	●	●		The Contractor shall be entitled to payment of the value (as at the date of suspension) of Plant and/or Materials which have not been delivered to Site	Contractor	Damages
8.11	●	●		If the suspension has continued for more than 84 days, the Contractor may request the Engineer's permission to proceed. If the Engineer does not give permission within 28 days , the Contractor may , by giving notice to the Engineer, treat the suspension as an omission of the affected part of the Works. If the suspension affects the whole of the Works, the Contractor may give notice of termination under Sub-Clause 16.2	Contractor	Right for Termination
15.2			●	fails to comply with Sub-Clause 4.2 [Performance Security]	Employer	Right for termination(upon giving 14 days' notice to the Contractor)

15.2			●	abandons the Works or the intention not to continue performance of his obligations under the Contract	Employer	Right for termination(upon giving 14 days' notice to the Contractor)
15.2			●	fail to proceed with the Works in accordance with Clause 8[Commencement, Delays and Suspension]	Employer	Right for termination(upon giving 14 days' notice to the Contractor)
15.2			●	...fail to comply with a notice issued under Sub-Clause 7.5 [Rejection] or Sub-Clause 7.6 [Remedial Work], within 28 days after receiving it	Employer	Right for termination(upon giving 14 days' notice to the Contractor)
15.2			●	subcontracts the whole of the Works or assigns the Contract without the required agreement	Employer	Right for termination(upon giving 14 days' notice to the Contractor)
15.2			●	becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him	Employer	Right for termination(upon giving 14 days' notice to the Contractor)
15.2			●	gives or offers to give to any person any bribe, gift, gratuity,...as an inducement or reward for doing or forbearing to do any action in relation to the Contract	Employer	Right for termination(upon giving 14 days' notice to the Contractor)
16.1			●	fails to certify in accordance with Sub-Clause 14.6 [Issue of Interim Payment Certificates]	Contractor	suspension(after giving notice)
16.1	●			fails to comply with Sub-Clause 2.4 [Employer's Financial Arrangements] or Sub-Clause 14.7 [Payment],	Contractor	suspension(after giving notice)
16.1		●		If the Contractor suffers delay and/or incurs Cost as a result of suspending work in accordance with this Sub-Clause,	Contractor	penalty(extension of time and payment subject to 20.1)
16.2			●	the Contractor does not receive the reasonable evidence within 42 days after giving notice under Sub-Clause 16.1 [Contractor's Entitlement to Suspend Work] in respect of a failure to comply with Sub-Clause 2.4 [Employer's Financial Arrangements],	Contractor	Right for termination(upon giving 14 days' notice to the Contractor)
16.2			●	fails, within 56 days after receiving a Statement and supporting documents, to issue the relevant Payment Certificate,	Contractor	Right for termination(upon giving 14 days' notice to the Contractor)

16.2	●	●	the Contractor does not receive the amount due under an Interim Payment Certificate within 42 days after the expiry of the time stated in Sub-Clause 14.7 [Payment] within which payment is to be made (except for deductions in accordance with Sub-Clause 2.5 [Employer's Claims])	Contractor	Right for termination (upon giving 14 days' notice to the Contractor)
16.2	●		substantially fails to perform his obligations under the Contract in such manner as to materially and adversely affect the ability of the Contractor to perform the Contract,	Contractor	Right for termination (upon giving 14 days' notice to the Contractor)
16.2	●		fails to comply with Sub-Clause 1.6 [Contract Agreement] or Sub-Clause 1.7 [Assignment]	Contractor	Right for termination (upon giving 14 days' notice to the Contractor)
16.2	●	●	a prolonged suspension affects the whole of the Works as described in Sub-Clause 8.11 [Prolonged Suspension]	Contractor	Right for termination (upon giving 14 days' notice to the Contractor)
16.2	●		becomes bankrupt or insolvent, goes into liquidation, has a receiving or administration order made against him...	Contractor	Right for termination (upon giving 14 days' notice to the Contractor)

Table A.1.4 The summary of breach in Iran 4311

Employer Breach	Engineer Breach	Contractor breach	Description	Eligible Party	Result(termination, suspension, damages)
		●	Delay in taking-over the site more than 30 days after commencement	Employer	Right for Termination
		●	Delay in submitting a detailed programme	Employer	Right for Termination
		●	delay in mobilisation of the site for commencement of the contract works more than half of the determined time in the agreement	Employer	Right for Termination
		●	delay in commencement of the contract work more than one-tenth of the contract time or two month whichever is earlier	Employer	Right for Termination
		●	delay in completion of any planned work in accordance with the detailed programme	Employer	Right for Termination
		●	delay in completion of whole the work more than 25% of whole work	Employer	Right for Termination
		●	Not to recommence the work after removing the force majeure and notification by Employer	Employer	Right for Termination
		●	leaving the site or stopping the work without permission more than 15 days	Employer	Right for Termination
		●	not to follow the engineer's instructions to rectify defective works according to su-clause 32d	Employer	Right for Termination

		●	Contractor company goes into liquidation	Employer	Right for Termination
		●	becomes bankrupt or his equipments and properties are holdup by courts somehow that causes stop or lag in the work	Employer	Right for Termination
		●	it is proved that he has given the employer's staff any bribe or gift or reward or has shared them in his properties	Employer	Right for Termination
		●	assigns the contract to the another party	Employer	Right for Termination
		●	is inclusive for the legal restriction in accordance with sub-clause 44 (government workers restriction to be involved in contracts)	Employer	Right for Termination