

RISK ANALYSIS FOR PROFIT AND LOSS SHARING INSTRUMENTS

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Approval Page

DECLARATION

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all materials and results that are not original to this work.

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The author of this Phd thesis was decisive about becoming an academician in the field of economics but was indecisive about the exact subject matter until the second year of her Phd study. Then, by the help of different things, she decided to work on Islamic finance. Although there is an increasing interest in this subject matter, the author had nothing but a basic level of knowledge. This humble work is the result of a three year effort (whose last two years were very intense) first to understand the basics and second to provide a self-standing work in the field.

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Nomenclature

AAOIFI Accounting and Auditing Organisation for Islamic Financial Institutions

BBA Bay Bithaman Ajil

BDSF Bank Deposit Security Fund

BIS Bank for International Settlements

BNM Bank Negara Malaysia

CAR Capital adequacy ratio

CPI Consumer price index

DF Dickey-Fuller

GDP Gross domestic product

IDB Islamic Development Bank

IDI Islamic Deposit Insurance

IFI Islamic financial institutions

IFSB Islamic Financial Services Board

IIRA International Islamic Rating Agency

IRR Investment risk reserve

IRTI Islamic Research and Training Institute

M – M Modigliani-Miller

MENA Middle East and North Africa

PER Profit equalisation reserve

PIDM Malaysia Deposit Insurance Corporation

PLS Profit and loss sharing

PSIA Profit sharing investment account

ROE Return on equity

ROMD Return on mudarabah deposits

S&P Standard and Poor's

SDIF Savings Deposit Insurance Fund

Abstract

The idea of Islamic banking was built upon two pillars; non-interest bearing structure and profit and loss sharing mechanism. Islamic banks, which are existent since 1960s, are one of the actors in global financial market today. There have been many developments within the last 50 years that one of them is the inadequate use of profit and loss sharing instruments and the existence of questionable applications even if they are used.

This thesis is constructed upon the hypothesis that the aforementioned development is, first and foremost, the result of the extra risks pertaining to profit and loss sharing instruments which are *mudarabah* and *musharakah*. Due to this hypothesis, the aim of this work is to make analysis for each type of extra risks pertaining to *mudarabah* and *musharakah*.

By following the aim, first, detailed information about *mudarabah* and *musharakah* instruments is shared. Then the current profit and loss sharing applications of Islamic banks are analysed. Lastly, asymmetric information, credit risk, rate of return risk and withdrawal risk are analysed through risk management processes which are risk definition, measurement and mitigation. While doing this, both quantitative (such as econometric analysis) and qualitative (such as factor identification) methods are used.

As results, each risk type is (re) defined, risk factors are identified, new measurement approaches are provided and risk mitigation techniques are suggested for *mudarabah* and *musharakah* instruments.

Chapter 1

Introduction

In this chapter, first, the motivation of this work will be clarified. Then the aim and hypothesis together with the research steps will be defined. Third, brief background information about Islamic banking will be shared. Fourth, review of the literature used for the aim of this work will be made. Then the theoretical framework that this work is built upon will be drawn. Lastly, the methodology and methods will be explained.

1.1 Motivation

Islamic banks are modern financial institutions which run their businesses according to shariah (Islamic law/jurisprudence) rules and regulations. For instance; there is the prohibition of dealing with gharar (extreme uncertainty), maysir (gambling) and riba (usury, interest) in Islamic banking. This last item is especially important if it is taken into account that interest is the main motive or idea of conventional banking. Instead of interest, Islamic banking is built upon the idea of partnership where profit and/or loss are shared. The currently applied Islamic partnerships are mudarabah (labor-capital partnership) and musharakah (capital partnership). They are also called as profit and loss sharing (PLS) instruments.

However, today, Islamic banks concentrate on non-PLS based instruments and/or apply PLS based instruments with some measures whose shariah compatibility is controversial. It is important due to several reasons to find why these two anomalies happen in practice; first of all, these are creating clashes with the idealism behind the establishment of Islamic financial institutions (IFIs). Saeed (1998) argues that the initial studies about Islamic finance were based on idealism where the ideal and most 'Islamic' form of each concept shall be accepted as the valid one. And, this idealism has been shifted towards

pragmatism through the development of Islamic finance within last 50 years. Second, due to the increasing pragmatism, the concepts in Islamic finance are evaluated according to their form instead of content. This reflects itself mostly on the attempts of getting approval from shariah boards for a product, service etc. without questioning if these are compatible with the maqasid al shariah (objectives of shariah)¹ or maslahah (public good). This is what makes the shariah compatibility of the PLS applications in Islamic banks controversial i.e. even if they look shariah compatible from outside, they are actually including aspects which are not compatible with the objectives of shariah or public good. Last but not the least, by trying to look shariah compatible without taking into account the content, the difference of Islamic banks becomes a shallow argument.

In sum, the facts that there is small amount of PLS based applications in Islamic banking and these small amount of applications include some controversial aspects which in the end create the aforementioned concerns gave us motivation to work on such an issue.

1.2 Hypothesis, Aim and Research Steps

The question of ‘why do Islamic banks use mostly non-PLS based instruments?’ has been asked by other scholars and different answers have been given e.g. agency problems including asymmetric information (Bacha, 1997; Dar and Presley, 2000; Sarker, 2000; Khan, 2010), regulations (Iqbal and Mirakhor, 1987), mixture of reasons such as agency problem, ambiguity in ownership, contract maturity, privacy and confidentiality (Samad et al., 2005), internality and externality (Ascarya, 2010), finance related problems, legislation, staff related issues (Ahmed, 2006), risk appetite of banks and customers, monitoring costs, lack of transparency (Febianto and Kasri, 2007).

Socio-economic facts are very rarely depending on a single cause. In our case, we accept that there is more than one reason causing the lack of PLS instruments in Islamic banking. Having said that it is difficult to focus on different reasons in detail at once. Hence, it is rather more efficient and effective to focus on one cause which is seen as one of the main causes and which is covering some other causes at the same time. We argue that ‘risk’ is a good candidate since it covers one of the most commonly mentioned problems i.e. agency problem and it can explain some of the other causes such as risk aversion of Islamic banks and customers. Furthermore, risk factor is also a good candidate for being the reason of the second part of the anomalies i.e. disputable PLS applications

¹According to the well-known description of Imam al Ghazali (1058-1111), the objectives of shariah is to promote the well-being of all mankind, which lies in safeguarding their faith, human self, intellect, posterity and wealth.

from shariah point of view. In that regard, our research has the following hypothesis:

H_0 : The basic reason which causes lack of PLS and shariah compatibility problems for partnership applications in Islamic banking is the extra risks inherent to them.

Due to this hypothesis, the aim of our work is:

Aim: To find which extra risk is causing what kind of problems in terms of partnership applications in Islamic banking and to make risk management analysis for each of these extra risks.

Such an aim is built upon an *a priori* idea that the partnerships are the main pillars of Islamic banking and they should continue to be. Connected to the aim and hypothesis mentioned above, the following steps will be taken during the research process:

1. The shariah based background of mudarabah and musharakah type of partnerships will be searched by the help of Islamic jurisprudence, history and early works.
2. The shariah compatibility of the current practices of mudarabah and musharakah instruments in Islamic banking will be discussed.
3. The extra risk types causing shariah compatibility problems in terms of the application of partnerships in Islamic banking will be analysed through risk management process.

1.3 Contributions and Limitations

This research is important due to several reasons. First, as it was mentioned above, the question of ‘why do Islamic banks use mostly non-PLS based instruments?’ has been asked by different scholars but the following question of ‘why do they use PLS instruments in a questionable way that they do?’ has not been concentrated on yet. Our work is an attempt to answer both of these questions with one basic reason. Second, connected to the first point, even though the genuineness of the PLS based applications of Islamic banks has been questioned by some, none of these works go so much into detail about them. In this work, we list each of the problematic applications under a separate section and analyse them in detail. Third, we make a detailed analysis of each of the idiosyncratic risks pertaining to PLS instruments. Works dealing with individual risk analysis for PLS instruments are rare in Islamic finance literature.

On the other hand, this work has some limitations. First of all, most of the sources used in this research are in English and a small part is in Turkish which is the native language of the author. However, since the language of some of the first hand sources is Arabic, lack of Arabic knowledge can be an obstacle. Second, the research requires data sources such as financial and annual reports of Islamic banks. However, this is not always an easy task since most of the Islamic banks are established after 90s and they started to have better reporting since recently. Hence, some findings of this research are limited to the data gathered from Islamic banks.

1.4 Background Information

In this section, first, it will be explained how Islamic banking was born and developed till now. The current picture of it will also accompany to that. Then, the paradigmatic differences of Islamic banks vis a vis conventional banks will be mentioned. Lastly, some of the basic operations of an Islamic bank will be defined.

The necessity of financial institutions based on religious sensitiveness is especially felt by the independence of Muslim communities. This development was accompanied by increasing wealth of the Middle Eastern countries which have rich oil sources. Even though it was not officially named as Islamic bank, the establishment of Mit Ghamr Savings Bank in Egypt in 1963 is commonly referred as the first Islamic banking example in the world. The goal of this savings bank was to provide financial intermediation according to Islamic jurisprudence. As a small note here, a financial institution can be called with different names rather than Islamic, even though it follows Islamic teachings e.g. interest-free banking, participation banking etc. However, today, the commonly used name for such institutions is Islamic banking. Hence, we prefer to use this name in our work. After the first attempts in Egypt, the first modern commercial Islamic bank, Dubai Islamic Bank, was established in 1975. Since then, the number of Islamic banks has increased tremendously. According to Imam and Kpodar (2010), by the year 2006, of the recorded 176 Islamic banks, 70% are in the Middle Eastern countries, 14% in South East Asia and 15% in Sub-Saharan Africa. According to the latest world Islamic banking competitiveness report (Ernst&Young, 2011), the global Islamic banking assets are expected to reach \$1.1 trillion in 2012. The structural development continued by the establishment of different type of Islamic organisations such as Islamic investment banks, intergovernmental development bank, Islamic insurance companies (takaful companies) and Islamic windows run by conventional banks. It should be mentioned here that this research is concentrated only

on Islamic commercial banks. Figure 1.1 can be helpful to see how Islamic banking has diffused around the world.

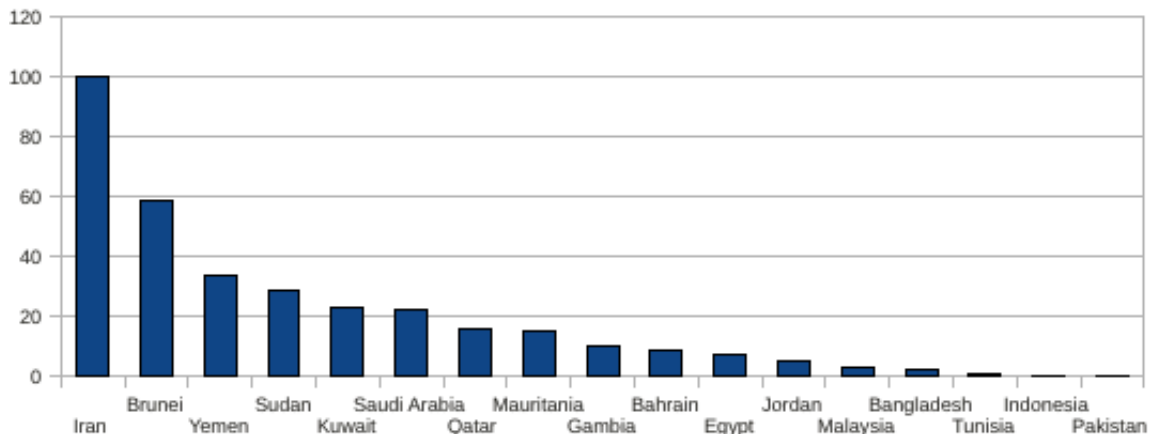


Figure 1.1: Share of credit by Islamic banks in total banking credit for selected countries (average 1992-2006). *Source:* Imam and Kpodar (2010), re-graphed by the author.

The basic idea behind the establishment of Islamic banking is to have banking operations filtered from Islamic point of view. The starting point of such an idea is the acceptance of God as the sole and ultimate owner of everything in this world and hereafter. For human being, to be owner of something is a temporary situation since the owned things are trusted by God. Then, if God is the sole and ultimate owner, it has also the right to determine how these things should and should not be used. This right is not only because of owning the things but also because of knowing them perfectly. Hence, according to Islam, economic activities should be compatible with do(s) and do not(s) of the religion which can be learned and inferred from the basic sources. The collection of all the religious rules is known as shariah (Islamic law/jurisprudence). According to the Glossary of Islamic Economics and Finance written by Khan (2003a), shariah means “The way of Allah as shown by the Qur’an and the sunnah of the Prophet. It is generally spoken to mean the Islamic law.” Hierarchically, the sources of shariah are Quran, sunnah (practice of the Prophet), ijma (consensus of opinion) and qiyas (analogical deduction).

Islamic banking is described as a banking system following shariah due to the guidance of shariah supervisory boards. However, this solely word, shariah, does not refer to homogeneity among the interpretations and applications of the law. As described by Warde (2000), Islam is not monolith and shariah has been accommodated due to local customs, public interest and necessity. Such accommodations caused the existence of different schools of jurisprudence in different parts of the world e.g. Hanafi, Shafi’i, Hanbali and Maliki schools within Sunni tradition or Ismaili and Jafari schools in Shia tradition.

Islamic Banking	Conventional Banking
Part of the wider idea called Islamic economics	Part of the capitalistic interest-based financial system
Follows the rules and regulations of shariah	No religion based rules and regulations
Interest and usury are avoided at all levels of financial transactions	The basis of all financial transactions is interest and usury
Trust based partnership relations	Debtor-creditor relations
Risk is shared	Risk is always on the debtor side
Bank pays zakah (socially responsible tax) on income and inspires clients to pay zakah	There is no socially responsible tax

Table 1.1: Paradigmatic differences in terms of the principles of Islamic and conventional banking. *Source:* Tabulated by the author.

Hence, the word Islamic jurisprudence can as well be used. In our work, this word is especially preferred when different opinions and/or interpretations are of concern.²

The ‘should be’³ differences between the principles of Islamic and conventional banking can be seen on table 1.1. These paradigmatic differences in terms of the principles manifest on operational differences. The operational differences of Islamic banking vis a vis conventional banking can be seen from their hypothetical⁴ balance sheets shown on table 1.2. It can be seen from table 1.2 that on the asset side, Islamic banks use their funds through sales and investments. On the liability side, Islamic banks have investment accounts based on profit and loss sharing partnerships as the basic sources of funds.

²The non-homogeneity of shariah manifests itself inside the shariah boards of Islamic banks since each Islamic bank has its own shariah supervisory board to check the legitimacy of the banking operations according to shariah law. The roles and characteristics of each shariah board are different from each other. The International Association of Islamic Banks (IAIB) tried to establish uniformity among different boards by appointing a Higher Religious Supervisory Board of Islamic Jurisprudence. But this attempt was not fully realised due to declining effectiveness of the association. As a special attempt, Malaysia could attain national harmonisation by the establishment of the National Shariah Board in 1997.

³This expression is to emphasise that the differences are in paradigm level and not necessarily existent in current practices.

⁴The expression ‘hypothetical’ emphasises that this is the ‘should be’ version of a typical Islamic bank’s balance sheet and not necessarily the ‘is’ version.

Islamic Banking	Conventional Banking
Assets	Assets
Cash balances	Cash balances
Financing assets (murabahah, ijarah, istisna, salam)	Securities
Investment assets (mudarabah, musharakah)	Loans
Fee-based services	Other assets
Liabilities	Liabilities
Demand deposits	Deposits
Investment accounts (mudarabah, musharakah)	Borrowings
Equity capital	Shareholders' equity

Table 1.2: Hypothetical balance sheet of a typical Islamic bank versus balance sheet of a typical conventional bank. *Source:* Tabulated by the author.

Some of the idiosyncratic Islamic bank balance sheet items are explained below. Since mudarabah and musharakah are the main subjects of this thesis, they will be discussed in detail later on.

1.4.1 Mudarabah (Labor-capital Partnership)

It is one of the basic business methods which has been used since the pre-Islamic times. According to the definition of Usmani (2002), mudarabah "... is a kind of partnership where one partner gives money to another for investing in a commercial enterprise. The investment comes from the first partner who is called Rabbul-Maal (Investor) while the management and work are exclusive responsibility of the other, who is called Mudarib (Working Partner) and the profits generated are shared in a predetermined ratio." As it can be understood from this definition, it is a way of profit sharing method. In the case of loss, working partner will lose only his/her effort while the investor will lose his/her money unless there is misconduct and/or negligence of the working partner. Hence, it does not guarantee any fixed earnings as in the case of conventional banking. There are many aspects of mudarabah in terms of the content of the contract e.g. under what conditions the contract would be void or what kind of conditions both sides can agree upon etc. For now, it is enough to indicate that mudarabah operation is multiplied by Islamic banks where the bank is making contract with so many agents at the same time both as a working partner and as an investor.

1.4.2 Musharakah (Capital Partnership)

Musharakah type of financing is quite similar to mudarabah. However, there are some key differences between them. For instance; in mudarabah, only one side is contributing to the capital while both sides contribute to the capital in musharakah i.e. the investor is a sleeping partner in mudarabah. Moreover, only the working partner is bearing the loss for mudarabah whereas partners share the loss according to their capital contribution for musharakah.

1.4.3 Murabahah (Mark-up Sale)

Despite it is not one of the traditional modes of financing like mudarabah and musharakah, it has been becoming popular among Islamic banks. Briefly, it is a sale contract based on mark-up profit. A person as a purchaser and a bank as a seller are having a sale contract in which the cost of the material is known and the bank is adding mark-up profit after buying this material for the person and selling it to him/her. This sale contract is controversial among Muslim scholars since some of them argue that there is not so much difference between interest earning and mark-up profit. However, the counter arguments indicate that there are some differences between them since for murabahah transaction, the acts of buying and selling do really happen. Additionally, the bank is facing the risk of holding the material which is accepted as the legitimacy of asking mark-up profit.

1.4.4 Ijarah (Leasing)

Leasing is a regular business activity like sale in which not the subject matter but the right of its use is given to the lessee. Today, in conventional banking it is also used as a mode of financing. The previous type of leasing is called as operational lease while the other one is called as financial lease. Leasing is approved lawful by Muslim scholars with some different aspects than the conventional one. Islamic banks adopt the leasing method called ijarah which is having the following idiosyncratic aspects (Ayub, 2007); first, for financial lease, the rental starts as soon as the agreement is done and for ijarah it starts when the asset is supplied to the lessee. Second, both in a financial lease and Islamic lease, the payment can be done either to the supplier or to the lessee but for ijarah if the payment is done to the lessee, there should be another agreement called agency agreement in addition to the lease agreement. Such kind of an arrangement assures that if the asset is destroyed before delivery, the loss will belong to the principal not to the agent. Hence,

a possible principal-agent conflict can be avoided. Lastly, in Islamic lease, the risk of the asset belongs to the bank but in financial lease it is borne by the lessee.

1.4.5 Salam (Forward Financing)

Salam is a sale contract where advance payment is done for the goods which will be delivered at a specific future time. The aim of such kind of a contract is that money can be provided immediately for the producers and it is possible that the goods can be bought cheaper than their future prices by the buyers. It is a trading contract rather than a loan where "... the seller through this contract transfers the risk of fluctuation to the buyer, while the buyer transfers the business related risk to the seller through guaranteed quantity and quality supply of output at a predefined date and place." (Kaleem and Wajid, 2009). There are some conditions which make the contract lawful. Some of these conditions are the specification of the subject of sale, its quantity, and the place of delivery. All these conditions are especially for mitigating the possible effects of gharar. Another property of such kind of a contract is its interest-free structure. It is because that the contract is not a loan but a sale contract, the link between money and real economic activity is also kept. Such kind of a contract seems similar with modern forward contract. However, the basic difference between salam and forward contract is the existence of up front payment in the former one. Moreover, the sale of the salam contract to a third person is not permissible.

1.4.6 Istisna (Project Financing)

Istisna, like salam, is a contract where the commodity is transacted before it comes into existence. The basic differences between salam and istisna are the following ones; first, the subject matter of istisna should always be something that is manufactured while there is no such restriction for salam. Second, the price should be paid in advance in salam while there is no such a rule for istisna, the time of delivery is an important part of the salam contract which is not necessary for istisna, and third, salam contract can not be canceled unilaterally while istisna can be canceled before the manufacturing starts.

To get an idea about how much each of these products is actually used by Islamic banks, table 1.3 can be seen.

Product Type	Share (%)
Murabahah	37
Diminishing Musharakah	29
Ijarah	22
Others	5
Istisna	3
Musharakah	2
Salam	2
Mudarabah	0

Table 1.3: The percentage share of the financial products among Islamic banks in Pakistan, 2008. *Source:* (Said et al., 2008).

On this table diminishing musharakah refers to a form of musharakah where at the end of an agreed time period, one of the partners owns the asset or venture. It can be seen that the most preferred financial products by Pakistani Islamic banks are murabahah, diminishing musharakah and ijarah. On the other hand, figure 1.2 shows the composition of the financial products used by Islamic banks in the Middle East and North Africa (MENA) region.

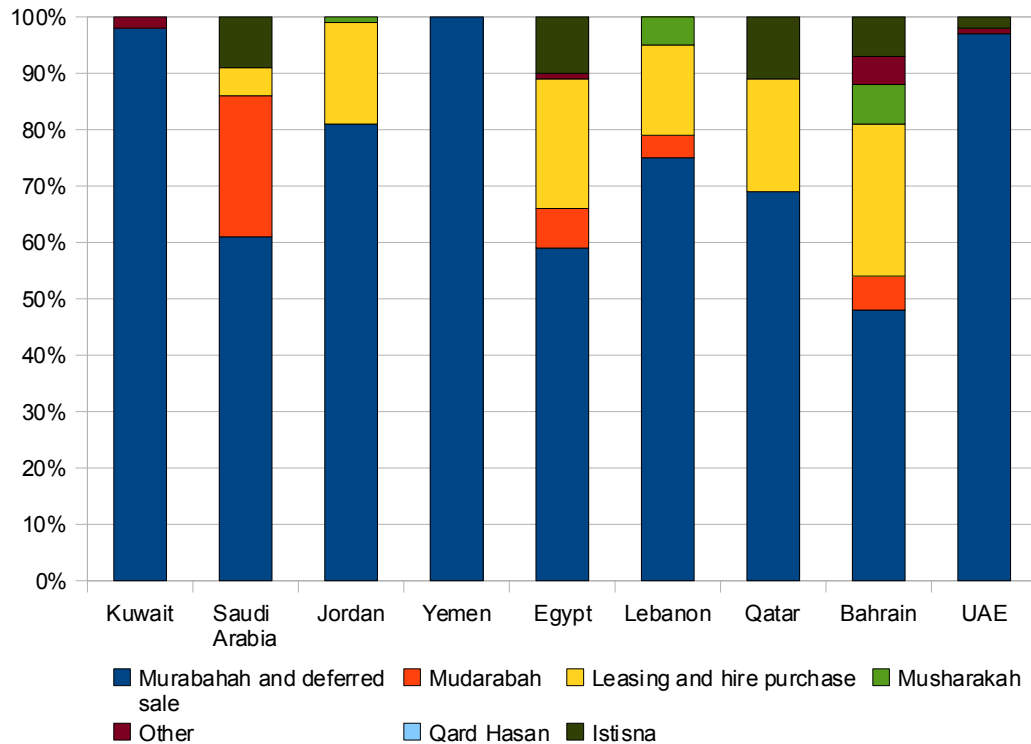


Figure 1.2: Percentage composition of finance products among Islamic banks in MENA region, 2008. *Source:* (Ali, 2011), re-graphed by the author.

As it can be seen from the figure, the most commonly used product is murabahah by all the countries. Leasing and hire purchase are other popular products meanwhile mudarabah and especially musharakah are not commonly used by Islamic banks in MENA region.

1.5 Literature Review

In this section, some examples from the utilised literature for the conduct of this research will be shared. While doing this, the literature is grouped according to its subject.

1.5.1 Literature for Islamic Finance and Banking

Even though Islamic finance in general and Islamic banking in particular are rather new research areas, it is quite easy to find introductory type of literature about them. Some of the introductory works used for this research are the followings: one of the reference books that helped us from the very beginning is the introductory work of Ayub (2007). He enriches the book with the inclusion of some subjects which are connected to Islamic finance such as the features of Islamic economic system, business ethics in Islam, Islamic

law of contracts etc. Only after the explanation of these subjects, he starts to explain the basic products used in Islamic finance.

The next book edited by Hassan and Lewis (2007) provides a systematic overview to Islamic banking since it starts with the foundations of Islamic financing, then continues with the basic operations of Islamic banks and Islamic finance instruments. While doing that each subject is represented by the experts in their fields.

Another book which is written by Warde (2000) uses historical and political perspectives to touch upon different issues e.g. the connection between Islam, economics and finance, how the idea of modern Islamic finance has been developed, the effect of country specific differences etc. This book has been especially useful to understand and define the different approaches within Islamic finance.

Another book which has a special point of view belongs to El-Gamal (2006) whose major concern is to "... refocusing Islamic finance on substance rather than form." Through this aim, he elaborates the basic operations of an Islamic bank by taking into account the position of jurisprudence and arbitration.

Islamic Development Bank (IDB) and its research centre called Islamic Research and Training Institution (IRTI) provide good sources in terms of Islamic banking. For instance; the work of Ahmed (2002) is one of a kind since he attempts to provide an analytical micro model for an Islamic bank. His mathematical expressions to explain the asset and liability side structures should especially be mentioned. In another IDB and IRTI based work, Ahmad (1994) gives information about the theory and practice of Islamic banking together with the further research areas.

On the other hand, Usmani (2002) explains the basic operations of an IFI from the religious point of view. Since he is a well-known shariah scholar, his work includes religious background information for each Islamic banking operation.

Besides the general, introductory literature, it is also important to use literature dealing with more specific issues about Islamic finance and Islamic banking e.g. the underlying principles of Islamic banking. In that regard, Akacem and Gilliam (2002) mention the existence of equity based profit and loss sharing mechanism instead of interest based operations as the basic principle of Islamic banks, meanwhile, Choudhury and Hussain (2005) indicate two basic principles of Islamic modes of financing as being interest-free and being dependent upon the cost and profit sharing.

1.5.2 Literature for Islamic Partnerships

Islamic banking is built upon the paradigm of PLS instead of interest-based operations. The two typical Islamic partnership contracts are *mudarabah* and *musharakah*. To understand the shariah based structure of these partnerships, we benefit from the literature within three categories; jurisprudence, history and early works. For the first category, the jurisprudential aspects of *shirkah*, *musharakah* and *mudarabah* are searched through the following sources; the Quran, hadith (sayings of the prophet Muhammad), major fiqh schools and current Islamic financial authorities. Among them, Quran is the one in which it is difficult to find direct cites of Islamic partnerships. What we do with that source is to track the root words for *mudarabah* and *musharakah*. Some of the exemplary parts from the Quran are; 4:12, 6:139, 30:28 and 62:10⁵. All of the Quran references in this work are from the English translation of Yusuf Ali (2007).

On the other hand, the hadith literature provides more detailed information about the partnerships in Islam. Some of the benefited sources are; *Sunan* (Abu Dawud, 2000), *Sahih Al-Bukhari* (Al-Bukhari, 1994) and *Sahih Muslim* (Al-Hajjaj, 1976) which are all included in the six major hadith collections of Sunni tradition and which were all originally written in 9th century. *Bulugh Al-Maram Min Adillat Al-Ahkam* (Ibn Hajr, 2003) which was originally written in 15th century and *Al-Muwatta* (Imam Malik Ibn Anas, 2005) which was originally written in 8th century are some of the other benefited sources. Among them, *Al-Muwatta* has a unique place since it includes a whole chapter about *qirad* (*mudarabah*).

To reflect the ideas of major fiqh schools, we use the following first hand sources; *Kitab'ul Harac* (Abu Yusuf, 1973) which was originally written in 8th century, *Durer al-Hukkam fi Serh-i Gurer-il-Ahkam* (Molla Husrev, 1979) which was originally written in 15th century, *Radd al-Mukhtar ala ad-Dur al-Mukhtar* (Ibn-i Abidin, 1994) which was originally written in 18th century and *Majallah* (Ahmed Cevdet Pasha, 1978) which was originally written in 19th century. These are all belonging to Hanafi school meanwhile *Bi-dayat al-Mujtahid wa Nihayat al-Muqtasid* (Ibn Rushd, 2000) which was originally written in 12th century and *Al-Risalah* (Al-Qayrawani, n.d.) which was originally written in 10th century are belonging to Maliki school. Here, *Majallah* is especially an important source because that it was the codified law of Ottoman since the beginning of 19th century.

To gather collective information about the juristic point of views of different schools, second hand sources are also benefited such as Donduren (2010), Ellek (2006), Kose (2006), Zuhayli (2006), Gozubenli (2002), Sekerci (1981) and Shahuiddin (2010). All

⁵The first number here shows the number of the verse while the second one shows the number of the ayat. This numbering system will be followed for all the coming Quran references.

these sources, except the last one, are written in Turkish. The first source is the most comprehensive one since it does not only deal with partnerships in Islamic jurisprudence but all kind of business relations. The second one is the most specific one since it only deals with *mudarabah* in Islamic jurisprudence. The third book is about the Islamic partnerships. The fourth and fifth sources are parts from the Islamic *fiqh* encyclopaedia and the encyclopaedia of Islam. The last two sources are Phd theses which include detailed background information about the subject. Lastly, we benefit from the jurisprudential sources of current Islamic financial authorities such as Bank Negara Malaysia (BNM) which is the central bank of Malaysia and Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI). These institutions publish guideline documents about Islamic partnerships (See: BNM, 2009b; AAOIFI, 2002).

Within the category of history, we use the sources which investigate the applications of *mudarabah* and *musharakah* throughout the history. For instance; in his detailed work, Hasan (1989) gives information about how Islamic partnerships were applied in pre-Islamic and early Islamic periods. On the other hand, especially for the period of Middle Ages, we benefit from the sources which are about the history of Western business since they are indirectly focusing on Islamic partnerships e.g. the work of Udovitch (1962) where he concludes that these Western business practices were originated from Medieval Islamic partnership contracts, the work of Goitein (1966) in which one can find documentation about the business transactions and the work of Postan (1973) where he clarifies the connection between Western business practices and classic Islamic partnerships. To see how *mudarabah* and *musharakah* are applied during the late medieval times, we especially use the following sources; Ahmed Cevdet Pasha (1978), Inalcik (1969) and Cizakca (1996). Lastly, to see the transformation from classic Islamic partnership applications to modern Islamic banking, the works of El-Ashker (1987) and Chachi (2005) helped us.

Within the category of early works about Islamic banking, we use sources which were written in between 1945-1987. Inside the earliest one whose first edition was in 1945, Qureshi (2003) concentrates on the ban of *riba* in Islam and partnerships as alternative structure which banks can be built upon. Inside the second earliest source which was first published in 1969, Siddiqi (1983) draws a more concrete structure of an Islamic bank which is based on PLS contracts on the asset and liability sides. The source including the conference speeches of El-Najjar (1992) which were originally made in 1971 is especially important since he was the initiator of the first Islamic banking project called *Mit Ghamr* savings project. Some of the other benefited sources, in which the jurisprudential background of Islamic partnerships in modern Islamic banking is taken place, are belonging to

Chapra (1985) and Maududi (1970).

1.5.3 Literature for the Current Applications of Islamic Banks

In terms of the literature about the problems of Islamic partnerships in current applications of Islamic banks, the benefited literature is dealing with the following issues; lack of PLS instruments and the dominance of debt-based contracts, especially murabahah, guaranteeing PLS based investment deposits and using deposit insurance, smoothing, determination of rate of return and profit sharing ratios. In terms of the first issue, we use sources which show evidences for the lack of PLS and abundance of murabahah such as the work of Samad et al. (2005). Furthermore, we use the sources which attempt to identify the reasons of the lack of PLS such as the work of Dar and Presley (2000) and the work of Febianto and Kasri (2007).

About the issue of guaranteeing, we benefit from some general sources explaining the basic concepts of guarantee and insurance e.g. Briscoe and Fuller (2007). To see the practice of insurance in Islamic banks, documents about Malaysia Deposit Insurance Corporation (PIDM, 2009) is referred often by us. Some of the other sources illuminating the current practices of Islamic banks in terms of guaranteeing and insurance are (*Bankacilik Kanunu*, 2005) and (Hegazy, 2008). On the other hand, the work of El-Gari (2003) is also referred often since it answers some of the frequently asked questions about the issue of guaranteeing investment deposits.

For the next issue which is smoothing especially via the use of special reserves, general sources explaining basic concepts are used e.g. (Albrecht et al., 2008). The current practices of Islamic banks in that regard are especially followed from the works of Sundararajan (2008) and Islamic Financial Services Board (IFSB, 2010). This second source is a guidance note from one of the leading regulatory institutions. Moreover, the annual and financial reports of Islamic banks are utilised.

About the last issue, the current practices of Islamic banks are followed from different works such as (Sadique, 2009) and (Bacha, 2004).

1.5.4 Literature for Risk Analysis

The risk analysis part of this work is dealing with four types of risks; asymmetric information, credit risk, rate of return risk and withdrawal risk. While doing the analysis for each of these risks, we use literature from both classic economics and Islamic economics.

For the risk of asymmetric information, modern literature becomes helpful to understand the background of the basic concepts and the choice between equity and debt. In that regard, the book of Bebczuk (2003) is one of a kind where the lexical definitions of adverse selection, moral hazard and agency costs are shared together with their mathematical representations. The choice between debt and equity under asymmetric information is taking place in the literature of modern economics more than it does in Islamic economics. The first person who made relaxation on the certainty assumption of Modigliani-Miller (M-M) model was Akerlof (1970) and he identified the problem of asymmetric information. Another milestone regarding to that issue is the Pecking order hypothesis of Myers and Majluf (1984). The hypothesis argues that the order of financing decision is firstly internal risk-free debt, then risky debt and lastly equity. The choice between debt and equity for firms, organisations or institutions under asymmetric information is an important concept for Islamic banks since debt based instruments are preferred more and more commonly over equity based PLS instruments. In Islamic economics literature, the choice between debt and equity under asymmetric information has been discussed by some e.g. Aggarwal and Yousef (2000), Khan (1985) and Haque and Mirakhor (1986). The first two of these sources try to prove mathematically why debt based instruments are preferred over equity based ones within IFIs. The third one is for showing mathematically how IFIs make optimal decisions under asymmetric information.

For the credit risk, we again benefit from classic economics especially to understand the basic concepts and to follow the steps of a proper credit risk management process. In that regard, the documents of the Bank for International Settlements (BIS) such as (Basel Committee, 1988), (Basel Committee, 2004) are the primary sources. On the other hand, to understand and reflect the uniqueness of credit risk pertaining to PLS instruments, credit risk related literature from Islamic economics are required e.g the guideline document of IFSB (2005) and the detailed work of Greuning and Iqbal (2008) about risk analysis in IFIs. Moreover, the Islamic bank based applications of some of the well-known rating agencies have been followed e.g. Coughlin (2007) and Hassoune (2009). Lastly, a detailed literature review is shared in terms of the use of derivatives in Islamic jurisprudence. Some of these sources belong to Obaidullah (1998) who supports the idea of the development of already known Islamic contracts such as khiyar al-shart and Kamali (1996) who is known as one of the most liberal figures about the use of derivatives within IFIs.

For the rate of return risk and withdrawal risk, we mostly depend on the sources from Islamic economics since these are unique risks for IFIs. To understand what they are and how they arise when PLS instruments are of concern, the guideline document of

IFSB (2005) and the comprehensive work of Greuning and Iqbal (2008) become the main sources. Since it is difficult to find direct literature for the factors of withdrawal behaviour, literature for depositing behaviour, which is the reverse act of withdrawal, is used. Some of the sources dealing with the depositing behaviour of investment account holders in Islamic banks are (Haron and Ahmad, 2000) and (Kasri and Kassim, 2009) who basically concentrate on the effect of rate of return and interest rates. Lastly, to construct our own model of withdrawals from Islamic banks, the empirical work of Ismal (2011) is benefited.

1.6 Theoretical Framework

Theory is briefly a model for the reality. The reality that we are dealing with is the applications related to PLS instruments in Islamic banks. In that regard, the theoretical framework of our thesis is depicted on figure 1.3.

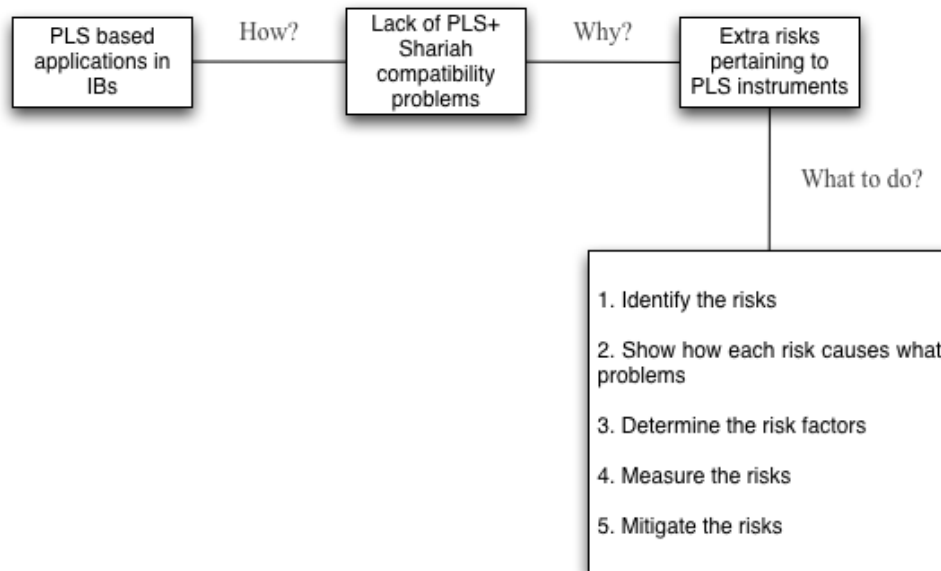


Figure 1.3: Theoretical framework of the thesis

1.7 Methodology and Methods

It was indicated above that theory models the reality. To model the reality, we need methodology and methods. There are two methodologies commonly used in scientific researches; quantitative and qualitative.⁶ Quantitative data analysis is termed by Bryman (2004) as "... a research strategy that emphasises quantification in the collection and analysis of data... (whereas) qualitative analysis can be construed as a research strategy that usually emphasises words rather than quantification in the collection and analysis of data." As a general rule, the former methodology is used by natural scientists who need to calculate and present their data. Meanwhile, the latter one is used by social scientists whose works are more depending on words rather than quantification. Because of the specific location of economics which is in between natural science and social science, the works done by economists generally include both of these methodologies. As indicated by Hausman (2008), "Of all the social sciences, economics most closely resembles the natural sciences. Economic theories have been axiomatised, and articles and books of economics are full of theorems." This work is not an exception. Hence, our research will include quantitative analysis where the calculation and presentation of data are necessary and it will also include qualitative analysis where identification, exemplification, classification or discussion about an issue are necessary.

Each of these methodologies has its own methods. For instance; diagrams and charts, sampling types and statistical tests are some of the methods of quantitative analysis whereas some of the most common qualitative research methods are observations and interviews. For our work, we use charts, graphs, econometric and statistical analyses as quantitative methods. These methods are used by the help of Excel, STATA or SPSS. In addition to this, already done surveys, examination and comparison of Islamic bank reports are used as qualitative methods.

In terms of data sources, Mason (2002) lists some of the commonly used qualitative data sources as people, organisations, texts (published or unpublished), settings and environments and events and happenings. Among those data sources, we especially benefit from texts such as books, articles, speeches, technical reports etc. These sources are mostly in English but there are also sources in Turkish. On the other hand, quantitative data sources are not so different than the qualitative ones since they can be also gath-

⁶Since the subject of this research is related to Islamic finance and therefore related to Islamic economics, it could be expected from us to use the methodology of Islamic economics. However, even though there are some attempts to identify what such a methodology is, there is not a well-developed and widely accepted Islamic economics methodology.

ered from people, organisation or texts. In this research, we mostly benefit from other researchers' quantitative analyses, quantitative data announced by Islamic banks.

Chapter 2

Shariah Background of Islamic Partnerships

In this chapter, shariah background of Islamic partnerships is searched in Islamic jurisprudence, in history and in early works of Islamic banking.

2.1 In Islamic Jurisprudence

In this section, the shariah background of Islamic partnerships will be searched in Islamic jurisprudence.

2.1.1 Shirkah

Both mudarabah and musharakah are part of a larger group called shirkah (partnership) in Islamic jurisprudence. Hence, before anything else, we will give information about shirkah.

As a jurisprudential term, shirkah means “A contract between two or more persons who launch a business or financial enterprise with the purpose of making a profit.” (Khan, 2003a). The legitimacy of shirkah is evidenced by Muslim scholars through Quran, hadith and ijma. The most commonly referred Quran verses are the following ones:

1. “If the man or woman whose inheritance is in question, has left neither ascendants nor descendants, but has left a brother or a sister, each one of the two gets a sixth; but if more than two, they share in a third -after payment of legacies and debts; so that no loss is caused (to any one).” (Yusuf Ali, 2007, 4:12)

2. “And they say: What is in the wombs of such and such cattle is specially reserved (for food) for our men, and forbidden to our women; but if it is still-born, then all have share therein.” (Yusuf Ali, 2007, 6:139)
3. “He does propound to you a similitude from your own (experience): do ye have partners among those whom your right hands possess, to share as equals in the wealth We have bestowed on you? Do ye fear them as ye fear each other?” (Yusuf Ali, 2007, 30:28)
4. “Allah puts forth a Parable a man belonging to many partners at variance with each other, and a man belonging entirely to one master: are those two equal in comparison?” (Yusuf Ali, 2007, 39:29)

In all of the above verses, the word used with the meaning of having shares and being partners is ‘shurake’. On the other hand, the most commonly referred hadith examples are the followings:

1. Narrated Abu Hurayrah: “I (Allah) make a third with two partners as long as one of them does not cheat the other, but when he cheats him, I depart from them.” (Abu Dawud, 2000, Book 22, Number 3377)
2. Narrated Abdullah Ibn Masud: “I, Ammar, and Sa’d became partners in what we would receive on the day of Badr. Sa’d then brought two prisoners, but I and Ammar did not bring anything.” (Abu Dawud, 2000, Book 22, Number 3382)
3. Narrated As-Sa’ib: “The Apostle of Allah said: You (Saib) were my partner and how good a partner; you neither disputed nor quarrelled.” (Abu Dawud, 2000, Book 41, Number 4818)
4. Malik said: “The way of doing things among us is that there is no harm in partnership, transferring responsibility to an agent, and revocation when dealing with food and other things...” (Imam Malik Ibn Anas, 2005, Book 31, Number 40.87)
5. Narrated Amr: “Here (in Mecca) there was a man called Nawwas and he had camels suffering from the disease of excessive and unquenchable thirst. Ibn Umar went to the partner of Nawwas and bought those camels. The man returned to Nawwas and told him that he had sold those camels. Nawwas asked him, ‘To whom have you sold them?’ He replied, ‘To such and such Sheikh.’ Nawwas said, ‘Woe to you; by Allah, that Sheikh was Ibn Umar.’ Nawwas then went to Ibn Umar and said to him,

‘My partner sold you camels suffering from the disease of excessive thirst and he had not known you.’ Ibn Umar told him to take them back. When Nawwas went to take them, Ibn Umar said to him, ‘Leave them there as I am happy with the decision of Allah’s Apostle that there is no oppression.’ ” (Al-Bukhari, 1994, Volume 3, Number 3.312)

6. Narrated Abdullah bin Hisham: “Zuhra bin Mabad stated that he used to go with his grandfather, Abdullah bin Hisham, to the market to buy foodstuff. Ibn Umar and Ibn Zubair would meet him and say to him, ‘Be our partner, as the Prophet invoked Allah to bless you.’ So, he would be their partner, and very often he would win a camel’s load and send it home.” (Al-Bukhari, 1994, Volume 3, Number 3.680)
7. As-Saib Al-Makhzumi narrated that he was the partner of the Prophet before the message. On the day of the conquest of Makkah, the Prophet said to him “Welcome my brother and my partner.” (Ibn Hajr, 2003, Chapter IX, Number 905)

It can be noticed that there is partnership of prisoners in the second hadith and partnership of foodstuff in the sixth one. Both of them are called shirkah al-milk type of partnership which will be explained in detail below. The fifth hadith example is indicating that Nawwas feels responsible for the behaviour of his partner. The other hadith examples are more general in terms of showing the permissibility and use of shirkah. Due to above verses and hadith examples, there is ijma among the scholars that shirkah is legitimate in Islam.

Even though there is ijma among the scholars about the legitimacy of shirkah, there is no unanimity in terms of classifying it. All schools of thought classify shirkah first in two groups; milk and uqood (See: Ahmed Cevdet Pasha, 1978).¹ Milk type of shirkah refers to partnerships by ownership. As a Hanafi scholar who was one of the shayk al-Islam during Ottoman times, Molla Husrev (1979) explains that shirkah al-milk can arise by inheriting, buying, granting or by mixing the capital. It can be seen that buying and granting include the will and action of the partners meanwhile inheriting and mixing do not. Hence, shirkah al-milk is separated into two groups according to how it arises; discretionary and compulsory. In terms of the type of goods owned by the partners, shirkah al-milk can be ayn or deyn. In Hanafi codification of law organised in Majallah² (Ahmed Cevdet Pasha,

¹Some sources add also ibahah to these groups. Ibahah means to be partner in terms of water, grassland, fire and mines due to the hadith that people are partners in three things which are water, grass and fire (Abu Yusuf, 1973).

²Majallah (majalla, medjelle, mejelle) was the civil code of the Ottoman empire in the late 19th century and early 20th century. The code was prepared by a commission headed by Ahmed Cevdet Pasha.

1978) Article 1067 and 1068 explain that shirkah al-ayn is to be partner for goods which are present and certain while shirkah al-deyn is partnership for receivables.

However, the discussions arise in terms of the grouping of shirkah al-uqood. First of all, uqood type of shirkah refers to partnerships based on contracting since uqood means legal contract. Since both musharakah and mudarabah belong to this type of shirkah, we will explain it in more detail. Majallah (Ahmed Cevdet Pasha, 1978) includes rules and regulations about shirkah al-uqood between article 1329 and 1355. Some of these articles are chosen and translated to English.³ From these articles, it can be noticed that Majallah groups shirkah al-uqood into two parts according to the existence of equality in terms of capital contribution and profit sharing, then it describes three contract types which these two can be organised in. As compatible with this grouping, Hanafi scholars such as Tahavi, Kerhi, Zaylai and Kasani classify uqood as amwal, amal and wujooh where each of them is based on either inan or mufawadah i.e. 6 different types of contracts (Sekerci, 1981). On the other hand, Hanbali school classifies shirkah al-uqood in five sub-groups; inan, mufawadah, amal, wujooh and mudarabah (Donduren, 2010; Kose, 2006; Zuhayli, 2006; Sekerci, 1981). According to Maliki and Shafi'i schools, the sub-groups of shirkah al-uqood are inan, mufawadah, amal and wujooh (Donduren, 2010). Additionally, Maliki school accepts the legality of musaqah (partnership in gardening) and muzarah (partnership in agriculture) (Al-Qayrawani, n.d.). On figure 2.1, an organised version of all these classifications can be seen.

³**Article 1329:** Shirkah al-uqood is a shirkah where two or more people contract to share capital and return. **Article 1330:** The main element of shirkah al-uqood is the offer and acceptance either verbally or inwardly. **Article 1331:** Shirkah al-uqood is divided into two groups; if the capital contribution and profit shares of the partners are equal, it is called shirkah al-mufawadah. If there is no such equality, then it is called shirkah al-inan. **Article 1332:** Both shirkah al-inan and shirkah al-mufawadah can be in one of these ones; shirkah al-amwal (partnership in capital), shirkah al-amal (partnership in work), shirkah al-wujooh (partnership in credit). **Article 1333:** All types of shirkah al-uqood comprehend attorneyship.

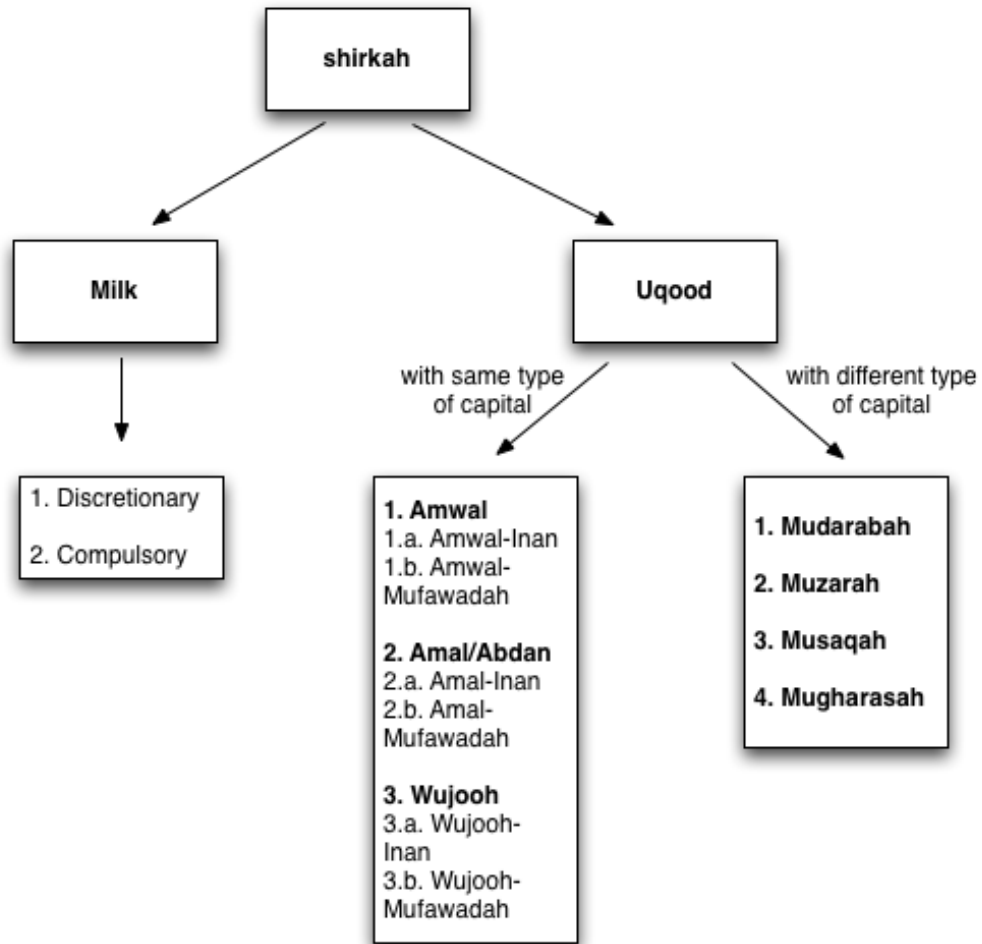


Figure 2.1: Shirkah/partnership types in Islamic jurisprudence. *Source:* Graphed by the author.

On above figure, uqood type of shirkah is classified in two sub-groups; contracts signed by the partners who have the same type of capital and contracts signed by the partners who have different type of capital. The first group has three main contracts in itself; amwal, amal and wujooh. Moreover, each of these contracts can be arranged in two different ways; inan and mufawadah. The second group of uqood has four main contracts; mudarabah, muzarah, musaqah and mugharasah (partnership in plantation).

2.1.2 Musharakah/Amwal-Inan

The term ‘musharakah’ is rather new. Even though it is used synonymous with shirkah, they are not the same things since the definition of musharakah is compatible with inan

contract, especially the amwal-inan type of contract i.e. group 1.a on 2.1. First of all, 'amwal' is the plural version of the word 'mal' which means property, money, wealth (Steingass, 1993). On the other hand, the word inan comes from either 'supply' or 'halter' (Molla Husrev, 1979). It is explained above that article 1331 of Majallah (Ahmed Cevdet Pasha, 1978) defines shirkah al-inan as one of the two basic shirkah al-uqood type of partnerships where neither capital, work or credit contributions nor profit shares of the partners need to be equal. Hence, amwal-inan type of shirkah is a partnership in properties/money/wealth organised due to the conditions of inan.

The legitimacy of amwal-inan type of shirkah can be traced by the Quran and hadith. Even though amwal-inan type of contract is not directly mentioned in the Quran, the verses about partnership which were shared in the previous sub-section can be shown as one of the evidences of the legitimacy of amwal-inan shirkah since it is a type of partnership. When it comes to hadith, one can find some examples directly referring to amwal-inan type of shirkah:

1. Abu Huraira reported Allah's messenger as saying: "When an inan becomes insolvent, and the other person (seller) finds his goods intact with him, he is more entitled to get them than anyone else." (Al-Hajjaj, 1976, Book 10, Number 3787)

Besides this, the hadith examples shared in the previous section can also be used as evidences for the legitimacy of amwal-inan partnership since they show the general acceptance of partnerships.

Before continuing, it should be reminded here that since it is listed under the shirkah al-uqood, amwal-inan shirkah type should provide the conditions of shirkah al-uqood which some of the most important ones were listed above by referring to Majallah. Then, the basic features of amwal-inan type of shirkah can be discussed under the following headings; subject of the contract, time period, partners, capital contribution, profit-loss sharing and work, rights and responsibilities, termination of the contract:

First of all, the subject of an amwal-inan contract can be general or a specific trade (Ibn-i Abidin, 1994; Molla Husrev, 1979). Capital of an amwal-inan contract can only be cash such as dirham or dinar, fair coins, silver and bullion (Molla Husrev, 1979). Ibn Rushd (2000) says that amwal-inan type of partnership with two kinds of goods -or with goods and dirhams or dinars- is permitted by al-Qasim but Malik did not approve it, and according to Shafi'i it is not valid except in dirhams or dinars.

Second, amwal-inan contract can be signed for a specific time period (Ibn-i Abidin, 1994).

Third, in such a partnership, partners are proxies to each other but not guarantors (Ibn-i Abidin, 1994; Molla Husrev, 1979). Hence, the group of people who can make amwal-inan agreement between each other is wide e.g. men, women, muslim, non-muslim.

Fourth, it was mentioned above that the very first property of amwal-inan is that the capital contributions of the partners do not need to be equal to each other. Furthermore, partners can contribute with a part of their capitals i.e. they do not need to put all their wealth which can be capital (Ibn-i Abidin, 1994; Molla Husrev, 1979). Lastly, partners' capitals can be different in genus or qualifications (Ibn-i Abidin, 1994).

Fifth, when contract is signed, the profit sharing ratios should be agreed on. This should be in ratios and not a specific amount e.g. 300 dollars since it is not known whether there would be a profit or not in the end. According to Hanbali and Hanafi schools (Ibn-i Abidin, 1994; Molla Husrev, 1979), the profit sharing ratio can be different than capital contribution ratios, however, Shafi'i and Maliki schools (Ibn Rushd, 2000; Al-Qayrawani, n.d.) argue that the ratio should be proportionate to the capital contributions. The difference among the opinions arises due to the following; for Hanafis and Hanbalis, the right for profit can be due to three things which are capital, work or daman (liability) meanwhile Malikis and Shafi'is argue that profit is subjected to capital only. Ibn Rushd (2000) explains the difference of the opinions about the profit sharing ratio as the following; Malikis and Shafi'is think that sharing of profits is to be compared with the sharing of losses which is proportionate to the contributed capital whereas the others base their argument on the similarity between amwal-inan and mudarabah i.e. work is considered along with capital.

In case of loss caused by one of the partners, then, this partner would be responsible. If no one is responsible for the loss, then, each partner would share the loss according to their capital contributions. There is unanimity among the scholars about loss sharing according to capital contribution of the partners. In terms of the relationship between profit and loss sharing, work and capital contribution, Ibn-i Abidin (1994) explains two different situations where,

- a) Capitals contributed are the same, profit ratios are different: In this case, it is acceptable for both partners to work equally since their working abilities can differ and it is also acceptable if only one of them is decided to work or one of them is decided to work more under the circumstance that this one should be the one who gets more profit share.

- b) Capitals contributed are different, profit ratios are the same: It is acceptable if both of them is decided to work or the one who has less capital is decided to work.

Sixth, according to Hanafis, a partner can buy and sell the partnership goods by cash or credit (Ahmed Cevdet Pasha, 1978). However, Shafi'i school does not accept the right of selling the goods by credit (Sekerci, 1981; Donduren, 2010). Different situations are mentioned by Ibn-i Abidin (1994) in regard of buying goods:

- a) If one of the two partners argues that he paid a part of the partnership good from his money: When both of them agrees on such a claim, the partner who makes the claim can compensate the amount he paid from the other partner. If the other partner does not accept the claim of the act of buying, then he needs to prove his non-acceptance. If the other partner accepts that the goods were bought for the partnership but does not accept that the one who bought the goods did not pay for them, the words of the latter one should be accepted.
- b) If one of the two partners argues that the goods bought by the other partner are not for the partnership: If the goods bought are existent, then they would belong to the one who bought them and if the goods bought are destroyed, then the one who bought them would prove that they were bought for the partnership and share the loss.
- c) If one of the two partners argues that he bought the goods for himself: When the other one does not accept this claim, the one who bought the goods should give oath. If the buying act happens after the partnership has started, then it should be checked whether the goods are compatible with the subject matter of the contract or not. In the latter case, the goods would belong to the one who bought them.

The other rights and responsibilities of the partners are; to give the partnership property as trust to someone else, to lend e.g. house, cars belonging to the partnership to someone else, to appoint a third person as proxy for buying and selling, to sign an ijarah contract, to give e.g. fruit, bread from the partnership property as gift to someone else, to give and get pledge (Sekerci, 1981). Moreover, partners can give from the partnership capital as mudarabah capital to someone else (Molla Husrev, 1979).

Seventh, a partnership, here it is amwal-inan, can terminate due to the following reasons; if one of the partners dies, if one of the partners withdraws from the partnership, if the partnership is decided for a specific period then it would terminate by the end of that period, if the aim of the partnership is achieved, if the capital of the partnership vanishes (Sekerci, 1981).

To see the collection of rules and regulations about amwal-inan type of shirkah in Hanafi fiqh, Majallah should be referred here. In Majallah, as in figure 2.1, shirkah al-inan is listed under the group of shirkah al uqood, and it is indicated that inan can be organised in three different types of shirkah; amwal, amal and wujooh. Rules and regulations about amwal-inan are taking parts in Majallah between Article 1365 and 1385. Some of the relevant parts from these Articles are chosen and translated into English.⁴

Today, the word which is used for amwal-inan type of shirkah is musharakah. It is not known exactly when the term musharakah appeared in Islamic finance literature. Musharakah means ‘sharing’. The root word of musharakah is shirkah and this is why these two are used synonymously. In today’s technical language, musharakah is “A financing technique adopted by Islamic banks. It is an agreement under which the Islamic bank provides funds which are mingled with the funds of the business enterprise and others. All providers of capital are entitled to participate in management, but not necessarily required to do so. The profit is distributed among partners in pre-agreed ratios, while the loss is borne by each partner strictly in proportion to respective capital contributions.” (Khan, 2003a). From this definition, it can understood that what is meant by musharakah is exactly the same thing as amwal-inan type of shirkah. Some of the important current rules and regulations about musharakah can be seen below.

In terms of capital;

1. “Both partners contribute a portion of capital which may not necessarily be equal. The contributed capital can be either in the form of cash or assets with an ascribed monetary value.” (BNM, 2009b)

⁴**Article 1369:** The loss should be shared according to capital contributions unless there is intention of injustice and error. **Article 1373:** Each partner has a right to sell the asset of the partnership in cash or on trust. And, such a sale can be expensive or cheap. **Article 1374:** Each partner can buy an asset by the capital of the partnership in cash or on trust. But if this has an exorbitant price, then the asset belongs to the one who buys it, not to the partnership. **Article 1379:** Each partner can do the following acts by the capital of the partnership; ida (trust), ibda (wealth), mudarabah and ijarah. **Article 1380:** Each partner needs the permit of the others to give qard from the capital to third people. **Article 1381:** If one of the partners makes a trip for the sake of the partnership, the expenses can be taken from the capital of the partnership.

2. "Musharakah capital shall be readily available, shall be contributed by all partners and debts shall not qualify as capital." (BNM, 2010)
3. "The capital invested shall not be guaranteed by any of the partners." (BNM, 2010)

In terms of management;

1. "While both partners may undertake the management of the business, if a partner chooses to withdraw from the management to become a sleeping partner, such arrangement is allowed. The partner is also allowed to appoint a third party to manage the business on behalf of the musharakah partnership." (BNM, 2009b)
2. "Non-managing partners may waive their voting rights relating to the management of musharakah and this shall be specified in the contract." (BNM, 2010)

In terms of profit and loss sharing;

1. "The proportion of profit to be distributed between the partners must be mutually pre-agreed upon inception of the contract." (BNM, 2009b)
2. "The profit sharing ratio may either be proportionate to the capital contribution or be based on a ratio or percentage which is agreed upon by all partners irrespective of their capital contribution." (BNM, 2010)
3. "The mechanism for estimating profit on musharakah capital employed may be benchmarked to conventional benchmarks, such as but not limited to base lending rate in order to determine the indicative profit rate." (BNM, 2010)
4. "During the musharakah contract period, the partners may mutually agree to set aside a portion of the profit as a reserve or for any other purpose specified and mutually agreed by the partners." (BNM, 2010)
5. "Any losses shall be distributed between the partners according to the capital contribution ratio. However, if the loss is due to the negligence of the managing partner or management team, such losses shall be borne by the respective partner or the management team." (BNM, 2009b)
6. "Any loss of capital in the course of the venture shall be recognised as capital impairment." (BNM, 2010)

7. “Upon realisation of loss, a partner may agree, without any prior condition, to bear the loss of another partner at the time such a loss is realised.” (BNM, 2010)

It can be seen from these contemporary rules and regulations that many of them are compatible with the rules and regulations about amwal-inan contract in classic Islamic jurisprudence e.g. capitals contributed do not need to be equal, management can be done by all of the partners, by one of them or by a third party, profit sharing ratio may or may not be proportionate to the capital contributions, loss without misconduct or negligence should be shared proportionately to the capital contributions. On the other hand, it can also be realised that there are some novelties due to the necessities of the current financial system e.g. non-managing partners and their voting rights, use of conventional benchmarks for estimating profits, to put aside a portion of the profit as reserves.

2.1.3 Mudarabah

It was mentioned above that mudarabah is an uqood type of partnership where the partners have different type of capitals. This type of partnership is also called as qirad, muqaradah and muamalah. Today, the commonly used word is mudarabah, hence, we prefer to use this one. Mudarabah comes from the expression ‘darabah fil ard’ which means to travel or to make a journey for trade. In legal terms, mudarabah is a partnership where one side (rabb al mal) puts capital and the other side (mudarib) puts work (Ibn-i Abidin, 1994; Molla Husrev, 1979; Zuhayli, 2006). Ibn Rushd (2000) who was a Maliki school member describes mudarabah/qirad as the following; “... it is the giving of wealth by one person to another so that he may trade with it (in return) for a defined ratio of the profit that the worker (amil) earns, that is, a part that is agreed upon by both as a third, fourth, or half.” Briefly, mudarabah is a capital-labor partnership.

The legitimacy of mudarabah can be followed through the basic sources of Islam. Below verses are the commonly referred ones from the Quran:

1. “It is no crime in you if ye seek of the bounty of your Lord (during pilgrimage)” (Yusuf Ali, 2007, 2:198)
2. “And when the Prayer is finished, then may ye disperse through the land, and seek of the Bounty of Allah...” (Yusuf Ali, 2007, 62:10)
3. “He knoweth that there may be (some) among you in ill-health; others travelling through the land, seeking of Allah’s bounty...” (Yusuf Ali, 2007, 73:20)

Even though there is no direct mentioning of mudarabah in the Quran, the expression of 'darabah fil ard' i.e. making journey for trade is used in above verses. More direct references about mudarabah can be found from hadith literature. In that regard, some of the hadith examples about the legitimacy of mudarabah can be seen below:

1. Narrated Ibn Abbas: "Ukaz, Majanna and Dhul-Majaz were market places in the pre-Islamic period of ignorance. When Islam came, Muslims felt that marketing there might be a sin. So, the Divine Inspiration came: 'There is no harm for you to seek the bounty of your Lord.' " (Al-Bukhari, 1994, Volume 3, Number 3.266)
2. Suhaib narrated that the messenger of Allah said "There are three things which are blessed, selling with a postponed credit, muqaradah and mixing wheat and barley for one's household and not for sale." (Ibn Hajr, 2003, Book VII, Number 930)
3. Hakim bin Hizam narrated that he used to say that if he gives money to someone by way of muqaradah: "You should not trade with my money in living beings, do not transport it by sea, and do not come down with it into the bottom of a river bed. If you do any of these acts, you should guarantee to return me my money." (Ibn Hajr, 2003, Book VII, Number 931)
4. Malik said, "Abdullah and Ubaydullah, the sons of Umar ibn al-Khattab went out with the army to Iraq. On the way home, they passed by Abu Musa al-Ashari who was the amir of Basra. He greeted them and made them welcome, and told them that if there was anything he could do to help them, he would do it. Then he said that 'There is some of the property of Allah which I want to send to the amir al-muminin, so I will lend it to you, and you can buy wares from Iraq and sell them in Madina. Then give the principal to the amir al-muminin, and you keep the profit.' They said that they would like to do it, and so he gave them the money and wrote to Umar ibn al-Khattab to take the money from them. When they came to sell they made a profit, and when they paid the principal to Umar he asked, 'Did he lend everyone in the army the like of what he lent you?' They said, 'No.' Umar ibn al-Khattab said, 'He made you the loan, because you are the sons of the amir al-muminin, so pay the principal and the profit.' Abdullah was silent. Ubaydullah said, 'You do not need to do this, amir al-muminin. Had the principal decreased or been destroyed, we would have guaranteed it.' Umar said, 'Pay it.' Abdullah was silent, and Ubaydullah repeated it. A man who was sitting with Umar said, 'Amir al-muminin, better that you make it a qirad.' Umar said, 'I have made it qirad.'

Umar then took the principal and half of the profit, and Abdullah and Ubaydullah, the sons of Umar ibn al-Khattab, took half of the profit.” (Imam Malik Ibn Anas, 2005, Book 32, Number 1.1)

5. Malik related to me from al-Ala ibn Abd ar-Rahman from his father from his father that Uthman ibn Affan gave him some money as qirad to use provided the profit was shared between them. (Imam Malik Ibn Anas, 2005, Book 32, Number 1.2)
6. Malik said, “The recognised and permitted form of qirad is that a man takes capital from an associate to use. He does not guarantee it and in traveling pays out of the capital for food and clothes and what he makes good use of, according to the amount of capital.” (Imam Malik Ibn Anas, 2005, Book 32, Number 2.3)
7. Yahya said that Malik spoke about an investor who made a qirad loan and stipulated to the agent that only certain goods should be bought with his money or he forbade certain goods which he named to be bought. He said, “There is no harm in an investor making a condition on an agent in qirad not to buy a certain kind of animal or goods which he specifies. It is disapproved of for an investor to make as a condition on an agent in qirad that he only buy certain goods unless the goods which he orders him to buy are in plentiful supply and do not fail either in winter or summer. There is no harm in that case.” (Furthermore) Malik spoke about an investor who loaned qirad money and stipulated that something of the profit should be his alone without the agent sharing in it. He said, “That is not good, even if it is only one dirham unless he stipulates that half the profit is his and half the profit is the agent’s or a third or a fourth or whatever. When he names a percentage, whether great or small, everything specified by that is halal. This is the qirad of the muslims.” (Imam Malik Ibn Anas, 2005, Book 32, Number 3.5)
8. Yahya said that Malik said, “The person who puts up the principal must not stipulate that he has something of the profit alone without the agent sharing in it, nor must the agent stipulate that he has something of the profit alone without the investor sharing. In qirad, there is no sale, no rent, no work, no advance, and no convenience which one party specifies to himself without the other party sharing unless one party allows it to the other unconditionally as a favour and that is alright to both... When there is a profit, and it is time to separate the capital, then they divide the profit according to the terms of the contract. If the principal does not increase or there is a loss, the agent does not have to make up for what he spent on himself or for the loss. That

falls to the investor from the principal. Qirad is permitted upon whatever terms the investor and the agent make a mutual agreement, of half the profit, or a third or a fourth or whatever.”

He (also) said, “It is not good for the investor to stipulate that the qirad money should not be returned for a certain number of years which are specified, because the qirad is not for a term. The investor loans it to an agent to use for him. If it seems proper to either of them to abandon the project and the money is coin, and nothing has been bought with it, it can be abandoned, and the investor takes his money back. If it seems proper to the investor to take the qirad loan back after goods have been purchased with it, he cannot do so until the buyer has sold the goods and they have become money. If it seems proper to the agent to return the loan, and it has been turned to goods he cannot do so until he has sold them. He returns the loan in cash as he took it.”

(Additionally), Malik spoke about an investor in qirad who stipulated a guarantee for an amount of money from the agent, “The investor is not permitted to stipulate conditions about his principal other than the conditions on which qirad is based or according to the precedent of the sunnah of the Muslims. If the principal is increased by the condition of guarantee, the investor has increased his share of the profit because of the position of the guarantee. But the profit is only to be divided according to what it would have been had the loan been given without the guarantee. If the principal is destroyed, I do not think that the agent has a guarantee held against him because the stipulation of guarantees in qirad is null and void.” (Imam Malik Ibn Anas, 2005, Book 32, Number 4.6)

9. Yahya said that Malik said, “No one should make a qirad loan except in coin, because the loan must not be in wares.” (Imam Malik Ibn Anas, 2005, Book 32, Number 5.7)
10. Yahya said that Malik spoke about a man who made a qirad loan to a man and he bought wares with it and transported them to a commercial centre. It was not profitable to sell them and the agent feared a loss if he sold them, so he hired transport to take them to another city, and he sold them there and made a loss, and the cost of the hire was greater than the principal. Malik said, “If the agent can pay the cost of the hire from what the capital realised, his way is that. Whatever portion of the hire is not covered by the principal, the agent must pay it.” (Imam Malik Ibn Anas, 2005, Book 32, Number 6.8)

11. Yahya said Malik spoke about an investor who made a qirad loan to a man, and the agent spent more than the amount of the qirad loan when buying goods with it and paid the increase from his own money. Malik said, “The investor has a choice if the goods are sold for a profit or loss or if they are not sold. If he wishes to take the goods, he takes them and pays the agent back what he put in for them. If the agent refuses, the investor is a partner for his share of the price in increase and decrease according to what the agent paid extra for them from himself.”

Malik (also) spoke about an agent who took qirad money from a man and then gave it to another man to use as a qirad without the consent of the investor. He said, “The agent is responsible for the property. If it is decreased, he is responsible for the loss. If there is profit, the investor has his stipulation of the profit, and then the agent has his stipulation of what remains of the money.”

(Lastly) Malik said about an investor who paid qirad money to a man, and the agent borrowed some of the cash and bought goods for himself with it, “The investor of the capital has a choice. If he wishes, he shares with him in the goods according to the qirad, and if he wishes, he frees himself of them, and takes all of the principal back from the agent. That is what is done with some one who oversteps.” (Imam Malik Ibn Anas, 2005, Book 32, Number 7.9)

12. Yahya said that Malik spoke about an investor who made a qirad loan to a man. He said, “When the investment is large, the travelling expenses of the agent are taken from it. He can use it to eat and clothe himself in an acceptable fashion according to the size of the investment. If it saves him trouble, he can take a wage from some of the capital, if it is large, and he cannot support himself. There are certain jobs which an agent or his like are not responsible for, amongst them are collecting debts, transporting the goods, loading up and so forth. He can hire from the capital someone to do that for him. The agent should not spend from the capital nor clothe himself from it while he resides with his family. It is only permitted for him to have expenses when he travels for the investment. The expenses are taken from the capital. If he is only trading with the property in the city in which he resides, he has no expenses from the capital and no clothing.” (Imam Malik Ibn Anas, 2005, Book 32, Number 8.10)
13. Yahya said that Malik said, “The generally agreed on way of doing things among us about an investor who pays qirad money to an agent to buy goods, and the agent then sells the goods for a price to be paid later, and has a profit in the transaction,

then the agent dies before he has received payment, is that if his heirs want to take that money, they have their father's stipulated portion from the profit. That is theirs if they are trustworthy to take the payment. If they dislike to collect it from the debtor and they refer him to the investor, they are not obliged to collect it and there is nothing against them and nothing for them by their surrendering it to the investor. If they do collect it, they have a share of it and expenses like their father had. They are in the position of their father. If they are not trustworthy to do so, they can bring someone reliable and trustworthy to collect the money. If he collects all the capital and all the profit, they are in the position of their father." (Imam Malik Ibn Anas, 2005, Book 32, Number 10.12)

14. Yahya said that Malik spoke about an investor who gave qirad money to a man, and then the man sought a loan from the investor or the investor borrowed money from the agent, or the investor left goods with the agent to sell for him, or the investor gave the agent dinars to buy goods with. Malik said, "There is no harm if the investor leaves his goods with him knowing that if the agent did not have his money and he had asked a similar thing of him, he would have still done it because of the brotherhood between them or because it would have been no bother to him and that had the agent refused that, he would not have removed his capital from him. Or if the agent had borrowed from the investor or carried his goods for him and he knew that if the investor had not had his capital with him, he would have still done the same for him, and had he refused that to him, he would not have returned his capital to him. If that is true between both of them and it is in the way of a favour between them and it is not a condition in the terms of the qirad, it is permitted and there is no harm in it." (Imam Malik Ibn Anas, 2005, Book 32, Number 11.13)
15. Yahya said that Malik spoke an investor who paid a man qirad money and the man told him that it was collected with him and asked him to write it for him as a loan. He said, "I do not like that unless he takes his money from him and then lends it to him or keeps it as he wishes. That is only out of fear that he has lost some of it, and wants to defer it so that he can make up what has been lost of it. That is disapproved of and is not permitted and it is not good." (Imam Malik Ibn Anas, 2005, Book 32, Number 12.14)
16. Yahya said that Malik spoke about an investor paying qirad money to an agent who made a profit and then wanted to take his share of the profit and the investor was away. He said, "He should not take any of it unless the investor is present. If he takes

something from it, he is responsible for it until it is accounted for in the division of the capital.”

Malik (also) spoke about an investor who put qirad money with an agent. The agent used it and then came to the investor and said, “This is your portion of the profit, and I have taken the like of it for myself, and I have retained your principal in full.” Malik said, “I do not like that, unless all the capital is present, the principal is there and he knows that it is complete and he receives it.” (Imam Malik Ibn Anas, 2005, Book 32, Number 13.15)

17. Yahya said that Malik spoke about an investor who put qirad money with an agent who bought goods with it, and the investor told him to sell them. The agent said that he did not see any way to sell at that time and they quarrelled about it. He said, “One does not look at the statement of either of them. The people of experience and insight concerning such goods are asked about these goods. If they can see anyway of selling them they are sold for them. If they think it is time to wait, they should wait.”

Malik (also) spoke about a man who took qirad money from an investor and used it and when the investor asked him for his money, he said that he had it in full. When he held him to his settlement he admitted that “Such-and-such of it was lost with me,” and he named an amount of money. “I told you that so that you would leave it with me.” Malik said, “He does not benefit by denying it after he had confirmed that he had it all. He is answerable by his confession against himself unless he produces evidence about the loss of that property which confirms his statement. If he does not produce an acceptable reason he is answerable by his confession, and his denial does not avail him... Similarly, had he said, ‘I have had such-and-such a profit from the capital,’ and then the owner of the capital asked him to pay him the principal and his profit, and he said that he had not had any profit in it and had said that only so it might be left in his possession, it does not benefit him. He is taken to account for what he affirmed unless he brings acceptable proof of his word, so that the first statement is not binding on him.”

(Furthermore) Malik spoke about an investor who put qirad money with an agent who made a profit with it. The agent said, “I took the qirad from you provided that I would have two-thirds.” The owner of the capital says, “I gave you a qirad provided that you had a third.” Malik said, “The word is the word of the agent, and he must take an oath on that if what he says resembles the known practice of qirad or is close

to it. If he brings a matter which is unacceptable and people do not make qirads like that, he is not believed, and it is judged to be according to how a qirad like it would normally be.”

(Lastly) Malik spoke about a man who gave a man one hundred dinars as a qirad. He bought goods with it and then went to pay the one hundred dinars to the owner of the goods and found that they had been stolen. The investor says, “Sell the goods. If there is anything over, it is mine. If there is a loss, it is against you because you lost it.” The agent says, “Rather you must fulfil what the seller is owed. I bought them with your capital which you gave me.” Malik said, “The agent is obliged to pay the price to the seller and the investor is told, ‘If you wish, pay the hundred dinars to the agent and the goods are between you. The qirad is according to what the first hundred was based on. If you wish, you are free of the goods.’ If the hundred dinars are paid to the agent, it is a qirad according to the conditions of the first qirad. If he refuses, the goods belong to the agent and he must pay their price.” (Imam Malik Ibn Anas, 2005, Book 32, Number 14.16)

The first hadith explains the reasoning behind the first Quran verse we shared above. The second hadith tells us that muqaradah i.e. mudarabah is blessed. The third hadith shows that it is acceptable to have limited mudarabah and if the agent-mudarib does not respect the limitations, he shall guarantee the capital. The fourth hadith shows how an already resulted business act can be decided as mudarabah afterwards and one of the possible ways of profit sharing under mudarabah is half-half. The fifth hadith shows one of the typical applications of a mudarabah partnership. The sixth hadith reveals that capital is not guaranteed under mudarabah. The seventh hadith example gives a bit more detailed information about the legitimate and illegitimate limitations for a mudarabah partnership. The eighth hadith indicates the importance of the profit sharing between principal and agent and if there is loss, the agent is not responsible from it. Also, the conditions of legitimate and illegitimate stipulations are identified. By the ninth hadith, it is specified that the capital must be in coins i.e. money. The tenth hadith shows how hiring can be done under mudarabah. On the other hand, different issues are covered by the eleventh hadith e.g. if agent spends also his own money to buy goods, if agent makes another qirad with someone without the consent of principal, if agent buys goods for himself from the mudarabah capital. The twelfth hadith shows how some expenses can be taken from the capital. The next hadith explains different scenarios for the situation that the agent dies. The fourteenth hadith covers again some different issues e.g. if mudarib asks loan from investor, if the investor borrows money from the mudarib. The fifteenth hadith sets the

conditions for making qirad money as loan. The sixteenth hadith shows that both the investor and capital should be present when the shares are divided between the actors. The last hadith gives different examples where mudarib and investor have disputes between each other and it shows how these disputes can be solved.

Due to above evidences from the Quran and hadith, there is a unanimity among Muslim scholars that mudarabah is legitimate. Imam Abu Yusuf, who was the student of Abu Hanifah, mentions in his work called Kitab'ul Harac (Abu Yusuf, 1973) that as far as he is concerned, there is no dispute about the acceptance of mudarabah partnership among scholars.

On the other hand, the basic features of a typical mudarabah contract are; foundation, capital, management, types of mudarabah, rights and responsibilities, profit-loss sharing, termination and disputes.

First of all, since mudarabah is one of the types of shirkah al-uqood, its foundation depends on the offer and acceptance. For instance; 'I gave this good to you to make mudarabah' can be an offer expression and 'I agreed!' can be an acceptance (Molla Husrev, 1979).

Second, there is agreement among scholars that the subject matter being dinars and dirhams and majority of them does not permit mudarabah with goods, however, if the capital is composed of that for which goods are sold, Hanafi school accepts this (Ibn Rushd, 2000). The capital should be known in terms of quantity, quality and genus when the contract is sealed (Ibn-i Abidin, 1994). Moreover, capital should not be in form of receivables (Molla Husrev, 1979).

Third, since mudarib puts only his work into the partnership, he is the solely manager. According to scholars, if rabb al-mal suggests also to work, then mudarabah deal would be broken (Sekerci, 1981).

Fourth, a mudarabah agreement can be limited/bounded or non-limited where the latter one does not include limitations such as where to trade, when to trade etc. (Molla Husrev, 1979). According to Hanafi and Hanbali schools, limitations can be about the following issues; place of the business, specification of goods being traded, length of the partnership and whom to trade with (Donduren, 2010). On the other hand, Malik and Shafi'i argue that specification of one kind of goods is not permitted unless it does not vary throughout the year (Ibn Rushd, 2000).

Fifth, *mudarib* has the following rights through a non-limited *mudarabah* agreement; to sell on cash or credit, to appoint someone for buying and selling, to travel, to give *ibda*, to pledge, to transfer the money (Molla Husrev, 1979). About traveling, scholars differed whether *mudarib* has the right of maintenance from the capital. Shafi'i did not accept such a right unless there is the acceptance of *rabb al-mal* whereas Malik and Abu Hanifa accepted the right of maintenance to the extent of food and clothing during the travel (Ibn Rushd, 2000).

Sixth, the profit shares of the parties should be known when the contract is sealed (Ibn-i Abidin, 1994). Moreover, the profit shares should not be in definite numbers but a proportion/part of it e.g. half of the profit amount, otherwise, *mudarabah* would be vicious (Ibn-i Abidin, 1994; Molla Husrev, 1979). Ibn Rushd (2000) says that there is no disagreement among scholars that the additional profit stipulated for any of the parties is not permitted, but there is disagreement in details. Malik permitted if the working partner stipulates all the profit for himself while Shafi'i did not permit this and Abu Hanifa said that it becomes *qard* and not *qirad/mudarabah*. For instance; Malik and Shafi'i did not permit if *rabb al-mal* stipulates liability for loss on *mudarib* while Abu Hanifa and his disciples said that the *mudarabah* is valid but the condition is void.

Seventh, a *mudarabah* agreement would terminate under the following conditions; the death of one of the parties, the loss of mind for one of the parties, the end of the agreed period, the dismiss of *mudarib*, the will of *mudarib* to end the contract, the capital is perished (Sekerci, 1981).

Lastly, if there are any disputes between *rabb al-mal* and *mudarib*, according to classical jurists, agent's claim will be accepted due to a priori acceptance of his/her trustworthiness in the following disputes; the amount of capital, the amount of profit, capital damage and denial of negligence (Shaharuddin, 2010). There is disagreement among the scholars about the dispute over the amount of share for which they contracted since Malik said that *mudarib*'s claim should be accepted while Abu Hanifa and his disciples argued that *rabb al-mal*'s statement is the acceptable one (Ibn Rushd, 2000).

On the other hand, the collective rules and regulations about *mudarabah* in Hanafi school can be followed from *Majallah*, between article 1404 and 1431. Some of the relevant points of these articles are chosen and translated into English.⁵

⁵**Article 1404:** *Mudarabah* is a *shirkah* type where there is the union of capital on one side and labor on

Today, mudarabah is applied in Islamic banks with the same name as it was applied earlier. However, there can be some different pronunciations such as mudaraba, mudharabah. Some of the current regulations about mudarabah can be seen below.

In terms of general structure;

1. There are two contracting parties to a mudharabah financing, i.e. the provider of funds (rabbulmal) and the entrepreneur (mudarib) (BNM, 2009b).
2. Mudharabah financing can be divided into two main types, i.e. restricted mudharabah and unrestricted mudharabah. Under restricted mudharabah, the Islamic banking institution may specify certain terms and conditions, for example stipulate a particular business or particular place for the customer to invest the capital. The customer is bound by all these restrictions and any violation of these restrictions may make the customer liable for the loss, if any (BNM, 2009b).

In terms of capital;

1. "In principle, the capital of mudarabah must be provided in the form of cash. However, it may be presented in the form of tangible assets, in which case the value of the assets is the contribution to the mudarabah capital. The valuation of the assets may be conducted by experts or as agreed upon by the contracting parties." (AAOIFI, 2002)
2. "The capital of mudarabah should be clearly known to the contracting parties and defined in terms of quality and quantity in a manner that eliminates any possibility of uncertainty or ambiguity." (AAOIFI, 2002)

the other side. The capital owner is called as rabb al-mal and the acting party is called as mudarib. **Article 1405:** The conditions of mudarabah are offer and acceptance. **Article 1406:** There are two types of mudarabah; limited mudarabah and unlimited mudarabah. The second one does not include any specifications about time, place or type of business. **Article 1411:** The capital should be known and the profit shares of the actors should be decided as ratios such as half-half or one-three. **Article 1413:** Mudarib is accepted as trustworthy. Hence, capital is trust in his hands. He can do the followings with this trusted capital; he can buy an asset to sell it for profit, he can sell an asset in cash or trick with an expensive or cheap price, he can accept payment transfer, he can appoint a proxy to buy and sell an asset, he can use the capital for ida, ibda, pledge and ijarah, and lastly, he can go to other places to do the business. **Article 1419:** If mudarib goes to another place for the sake of the mudarabah business, the expenses can be taken from the mudarabah capital. **Article 1423:** If rabb al-mal puts a time limit for mudarabah, the contract would expire by the end of that period. **Article 1425:** Mudarib has the right from profit due to his labor. **Article 1426:** Rabb al-mal has the right from profit due to his capital. **Article 1428:** Rabb al-mal is responsible from loss, if any. **Article 1429:** If rabb al-mal or mudarib dies or becomes lunatic without turning back, then the contract would be terminated.

3. "It is not permitted to use a debt owed by the mudarib or another party to the capital provider as capital in a mudarabah contract." (AAOIFI, 2002)⁶
4. "The manager shall not guarantee the mudarabah capital." (BNM, 2009a)
5. "The capital provider may require the manager to arrange for an independent third party performance guarantee. The guarantee shall be executed as a separate contract and be utilised to cover for any loss or depletion of capital in the event of misconduct, negligence, dishonesty, fraud or breach of the terms of the contract by the manager." (BNM, 2009a)

In terms of rights and responsibilities;

1. "If a mudarabah contract is concluded on an unrestricted basis, the mudarib is permitted, in general, to do what entrepreneurs do in his field of activity, including the following: attending to all permissible investment or trading fields that are feasible, carrying out the work himself or appointing another person to carry out some work if necessary, choosing as far as possible appropriate places and markets that are seemingly free of risks, selling and buying on a deferred payment basis." (AAOIFI, 2002)
2. "The capital provider is not permitted to stipulate that he has a right to work with the entrepreneur (mudarib)." (AAOIFI, 2002)
3. "If the mudarib has a right to receive living expenses from the mudarabah funds that has been approved by the capital provider, then he is entitled to the amount so approved for him. If there is no agreement on this, then the mudarib should take living expenses in accordance with custom and reason." (AAOIFI, 2002)

In terms of profit and loss sharing;

1. "Profit is shared between the capital provider and the entrepreneur according to a pre-determined profit sharing ratio. The profit sharing ratio has to be mutually consented upon and explicitly stated at the time of contracting and has to be a proportion/percentage of the profits." (BNM, 2009b)

⁶These three articles are taken from the 'Shariah Standard on Mudarabah' prepared by AAOIFI. The shariah standard on mudarabah was adopted by the shariah board meeting no. 8 held in Madina. There were 12 shariah board members who contributed to it.

2. "In principle, it is not permissible to earn a share of profit in addition to a fee in a mudarabah contract." (AAOIFI, 2002)
3. "If losses are greater than profits at the time of liquidation, the balance (net loss) must be deducted from the capital. In this case, as he is a trustee, the mudarib is not liable for the amount of this loss, unless there is negligence or misconduct on his part." (AAOIFI, 2002)
4. "The profit sharing ratio may be tiered to a target specific profit rate or threshold amount as per a specified benchmark." (BNM, 2009a)
5. "The parties to the contract may agree to set aside a portion of the profit as a reserve (e.g. profit equalisation reserve) or for any other purpose." (BNM, 2009a)

In terms of the termination of the contract;

1. "The termination of a mudarabah contract can be done under these circumstances; if the manager has not started the business yet, if there is a mutual agreement to terminate it even before the maturity date, if the maturity date arrives, if the manager dies, if the capital is lost and if there are any conditions making the contract invalid." (BNM, 2009a)

As in the case of musharakah, many of the contemporary rules and regulations about mudarabah are compatible with the rules and regulations in classic Islamic jurisprudence e.g. the definition of mudarabah, two types of mudarabah, non-acceptance of debt as mudarabah capital, not guaranteeing the capital, the rights and responsibilities of mudarib in case of unrestricted mudarabah, the use of maintenance from the capital, the ultimate liability of rabb al-mal when there is loss without negligence and misconduct, termination conditions. On the other hand, there are also some novelties due to the necessities of the current financial system e.g. third party guarantee, to tier the profit sharing ratio to a specific target, the existence of reserves.

2.2 In History

In this section, the shariah background of mudarabah and musharakah is searched in history.

The terms *mudarabah*, *muqaradah* and *qirad* are inter-changeable. The terms *muqaradah* and *qirad* were used in Hijaz while *mudarabah* was used in Iraq. *Mudarabah* was commonly practised in pre-Islamic Arab peninsula. The prophet's actions toward pre-Islamic Arab practices were the followings; prohibition, keeping and modifying. In terms of the action towards the practice of *mudarabah*, the prophet followed the second option and kept the practice as it was. Then, how was *mudarabah* practised in pre-Islamic Arab peninsula? According to Hasan (1989), the basic two properties of pre-Islamic application of *mudarabah* were "... the possibility of the bilateral contribution of capital and greater liberty left to the parties in the contract." Here, greater liberty means more freedom in terms of the division of profits. *Musharakah*, even though it was used under a different name, was also pre-Islamic trade application which was kept by the prophet. After the prophet, the application of *mudarabah* and *musharakah* was continued during the companions' times. How *mudarabah* and *musharakah* were applied during the prophet's and companions' times can be followed from the hadith literature mentioned in the previous sub-section.

One can follow how Islamic partnerships were applied in early medieval times in two ways; first, by screening through the documents in which such partnership applications are registered and second, by searching through the contracts in other civilisations which were inspired by the Islamic partnerships. In regard to the first way, there are some historians dealing with the documentation of partnerships in early times. One of them is Goitein (1966) who searches through the selected bankers' accounts from Cairo Geniza and finds the following record of a restricted partnership example; the record is from 11th century, the partnership was between a Jew and a Muslim, the junior partner (agent) contributed a little over 10%, with that contribution he shared in profit and loss the amount of almost one third. It can be seen that the partnership is quite similar to *musharakah*. In regard to the second way, we will mention some contracts here. One of them is *commenda* which was spread to Europe and Asia.⁷ According to Udovitch (1962), the origin of this widespread contract was nothing but *mudarabah*. *Mudarabah*-like arrangements were known by the Jews under the name of *isqa* which can be defined as a semi-loan liability for the agent and by the Byzantines under the name of *chreokoinonia* but neither *isqa* nor *chreokoinonia* was the inspiration for *commenda* since they were lacking the concept of limited liability.⁸ The parallelism between *mudarabah* and *commenda* can be noticed from the following definitions of *commenda*:

⁷As referred by Cizakca (1996), *commenda* was applied under the name of *wederlegginge* in Germany, *bagilaba-samatoela* among Malays and *muzarat* among the Armenians of Isfahan.

⁸Even though there is not unanimity on the acceptance of *mudarabah* as the basis of *commenda*, Udovitch's theory is one of the most well-developed and recognised ones.

- “Commenda was a sleeping partnership, by which the commendator, or the sleeping partner, delivered goods or money to the tractator, or the active partner. The commendator contributed capital and no labour, while the tractator contributed labour and no capital.” (Postan, 1973)
- “The unilateral commenda is arrangement whereby an investor or group of investors entrusts capital or merchandise to an agent-manager, who is to trade with it, and then return to the investor(s) the principal and a previously agreed upon share of the profits. The remaining share of the profits goes to the agent as a reward for his labor. Further, the agent is in no way liable for any loss resulting from the exigencies of sea travel or from an unsuccessful business venture. This is borne by exclusively by the investor(s), the agent losing only his expended time and effort.” (Udovitch, 1962)
- “The basic commenda was involving only two parties, an investing party and a traveling party. The commenda was an equity investment contract, specifying investments and payoffs. The investing party provided capital in the form of goods and cash that was used for the purchase of the trade goods and for travel-related costs. He was entitled to a share of the profit. In the end, the profits were split between the two parties according to different ratios.” (Harris, 2009)

As it can be understood from above descriptions, tractator is the mudarib and commendator is the rabb al-mal. Another contract type called collegantia or societas had the following properties:

- “In that type of contract both -or all, if there were several- parties contributed capital, and only one, or some, contributed labor.” (Postan, 1973)
- “The investing party who remains at home contributes two thirds of the capital whereas the traveling party contributes one third in addition to his labor. Profits usually are divided by the half according to original investments; losses are borne by both investors according to their respective contributions to the capital.” (Lopez and Raymond, 2001)

It can easily be noticed that these are the properties of a regular musharakah (or inan) contract. This contract was also known as bilateral collegantia since both sides are contributing to the capital. This is also the reason why commenda is called as unilateral collegantia since only one side contributes to the capital. It is also possible to find archived

examples of commenda and collegantia. Lopez and Raymond (2001) share a collegantia document from 1073 signed in Venice. In this bilateral agreement, both of the partners contribute to the capital by the proportion of 1 to 2 while only one of them is decided to work. It is written inside the contract that if the capital is saved, they would divide the profit half-half. The same authors record a commenda document from 1252 signed in Barcelona. According to the contract, the working partner promises to use the capital of the investors in a best way that he could do. The agreed profit ratio between the agent and the investor was 1/4 versus 3/4.

The shariah based applications of Islamic partnerships in late medieval times can especially be followed from the Ottoman sources since they were one of the most representative Muslim societies until the end of 19th century. According to Udovitch (1970), “The treatment of partnership and commenda in Islamic legal treaties remained essentially the same from the time of Shaybani⁹ to that of the Ottoman Majallah.” It can be remembered that Majallah’s regulations about partnerships were mentioned above. Besides Majallah, the juristic aspects of mudarabah and musharakah can be searched through the registries (sivil) and judicial records of Ottomans. While searching the roots of capital formation in Ottomans, Inalcik (1969) indicates that commenda (mudarabah) was one of the important means of bringing together capital and specialist skill. Then he clearly explains how it was practised in Ottoman society; “A gives money to B, and B travels and trades with this money; they divide the profit. B, while traveling, has complete use of the goods, but cannot use them for a loan or a pledge. A condition laid down beforehand with regard to the profit may invalidate the mudaraba contract. If the goods are lost, B is not obliged to recompense A. B has a share of the profit, but cannot claim it all.” In the same work, as an example of musharakah, Inalcik (1969) shares the following agreement from the book of the qadi (judge) of Bursa; a person called Khayr al-Din and his partner had a shirkah in which Bursa and the port Antalya as the centres of business and trade was run with Egypt and Syria. Since the partners contributed with the same amount of capital, their share of profit and loss was equal.

In Ottoman history, waqf was another structure including partnership applications in itself. The term waqf (foundation) comes from the word waqafa which means ‘stand still’. The functioning of a typical waqf is defined by Cizakca (1998) as the following: “A founder who has accumulated private wealth decides to endow his personal property for a specific, often pious, purpose. The amount of the original capital, corpus, the purpose

⁹Muhammad Ibn al-Hasan al-Shaybani was an Islamic jurist who lived in 8th century. In his well-known book, Introduction to the Law of Nations, he also covered the topic of Islamic economic jurisprudence.

for which it is endowed and all the other conditions of management are clearly registered in a deed of endowment submitted to the authorities.” On the other hand, cash waqf was briefly a foundation established with cash instead of real estate. It started to flourish in 15th century. However, the legitimacy of cash waqf caused discussions among the then religious authorities. In the end, it was announced as legitimate by two prominent figures; Ibn Kemal and Ebussuud. Their approval was based on the view of Hanafi scholar Imam Zufar who argued that cash waqf is permissible if the money is used through mudarabah and the income is used for the benefit of people. Then, cash waqfs became credit supplying institutions (Ozcan, 2006). The principal of these waqfs was operated by mudarabah, musharakah, murabahah, bida and qard hasan. And, cash waqfs developed in a way that it was possible to call them as waqf-banks (Donduren, 2008). However, it is not clear with what percentage mudarabah and musharakah were used and how they were practised. Moreover, there was an important difference between the cash waqf and bank system i.e. there was the pooling of deposits from so many individuals in the bank system while there was only one individual’s savings in the former one (Kuran, 2001). As a matter of fact, “... the cash waqf system was superseded by modern banks as suppliers of credit.” (Cizakca, 2004).

In sum, mudarabah and musharakah type of contracts gave inspiration to Western *com-menda* and *collegentia* which became the root of corporations and then modern banks. Meanwhile, in Muslim societies, mudarabah and musharakah could not be evolved into modern financial applications until 1960s. For the reasons of such a phenomenon (See: Kuran, 2003).

In 1960s, with the help of decolonisation of Muslim societies and increasing wealth of oil producing countries, the very first attempts of evolving Islamic partnerships into modern financial institutions have been made. As it was mentioned before, these early attempts, under the name of savings projects, were in Egypt. In his detailed work about the history of banking, Chachi (2005) expresses the basic reason behind the establishment of these saving projects as “...to mobilise the idle savings of the majority of the Muslim Egyptian population without transgressing the laws of the Shari’ah and to provide them with halal returns on their savings as well.” In structural terms, El-Ashker (1987) gives detailed information about the Mit Ghamr Local Savings Bank where the basic operations were deposit accounts, loan accounts, equity participation, direct investment and social services. Inside deposit accounts, there were savings accounts in which there was no reward or expense for the depositors. There were also investment accounts inside deposit accounts which were built upon the profit and loss sharing procedure where the profit shar-

ing was depending on the amount of the money put into the account, time and generated profit. So, during the establishment process of Islamic banking, the traditional mudarabah and musharakah contracts have been taken as bases and some modifications have been made e.g. the existence of many investors and many entrepreneurs instead of one-to-one contracts, the increasing role of intermediary-bank which becomes both an entrepreneur and financier and the lack of direct contact among individual investors and entrepreneurs.

2.3 In Early Works about Islamic Banking

In this section, we will follow the juristic aspects of mudarabah and musharakah in early works of Muslim scholars who suggested the transformation of ancient Islamic partnerships to modern IFIs.

One of the earliest works mentioning the concept of Islamic banking based on partnerships belongs to Qureshi (2003). The first edition of his book was published in 1945. His work is a typical example of the condemnation of riba, which he accepts it as the same thing with interest and usury¹⁰, and suggestion of PLS mechanism as an alternative method for the conventional banking system. He argues that the legal business in Islam is "... co-partnership in which one of the capital supplying partners becomes entitled to the income in view of the capital he supplies without taking any active part in the concern." It can be noticed that what he is describing is the sleeping partnership i.e. mudarabah. Hence, the conventional banking system can not be accepted from Islamic point of view since it entirely depends on interest. According to him, the basic reason behind the illegality of interest in Islam is that it assures the earning of one party apart from the result of the business or the situation of the borrower. He argues that there are two modifications which conventional banks should make to be acceptable by Islam; first, they should not pay any interest to their depositors and second, they should not charge any interest from their clients. As an answer to the question of how banks can survive without paying and taking interest, he says that "This can be achieved only if the banks instead of becoming creditors of industry, trade, business and commerce, become their partners." Even though there is not a detailed explanation or vision for the possible structure of an Islamic bank, he sees Bait-ul-Mal, which he names as the Central National Finance House, as a model for Islamic financial institutionalisation.

The idea of Islamic banking became more visible and concrete in the work of Sid-

¹⁰He argues that "Interest and usury are mere words which easily shade into one another; for what is considered a reasonable rate of interest today may be regarded as a usurious rate tomorrow."

diqi (1983). His work was originally written in Urdu in 1969. When it is compared with Qureshi's aforementioned work, this work explains more clearly how an Islamic banking structure can be configured. Before anything else, he indicates that an Islamic bank might be established on the principle of shirkat al-inan where shareholders own the bank. Shareholders' profit and loss distribution would be done according to their size of shares i.e. capital contribution. Even though he indicates that the financial obligations of the shareholders would be unlimited, by the expansion of banking business, limited liability should be established to protect the interest of depositors.

Even if he does not mention it directly, he means the asset side of the balance sheet of an Islamic bank by the title of 'business of the bank' and the liability side by the title of 'the bank and the owners of capital'. For the asset side, he indicates three activities for an Islamic bank which are charged services, partnership and mudarabah investments¹¹, uncharged services. What is vital for us here is the second category. For the case of partnership, "... the bank will be free to settle its own terms with its partners for the division of profit. But it is necessary to fix the profit shares of the bank and of its partners in percentages, and not to earmark any fixed amount for any party. With this condition the bank is free to agree to a division of profit proportionate to the invested amount or to settle other ratios. The bank will be free to agree to different ratios of profit sharing with different partners. If at the expiry of the partnership the invested capital of the bank is returned along with profit then this profit will go to the profit pool of the bank. If a loss occurs in some partnership this too will be accounted for out of that pool." Here, what is meant by the partners are the Islamic bank and entrepreneurs. In case of mudarabah, the bank would not have the right of management but only of auditing. For the liability side, he mentions mudarabah account and loan account. Some of the aspects of the mudarabah account are; "If the bank suffers a loss, the loss will be spread over the entire capital of the business. The loss apportioned as a result of such calculation will be borne by each account holder... At the end of each quarter every depositor will be informed about his profit or loss." At one point, he asks a very crucial question: "Is it right to arrange to make up losses from the profits reserved from profits earned against mudarabah account, so that the capital does not suffer reduction?" As an answer, he argues that "A's loss is not made up from B's profits. It should be clearly known what amount of profit for a particular account holder has been included in the reserve profits and only the loss suffered by that account holder should be adjusted against reserve profits while closing his accounts." This point should be kept in mind for coming discussions.

¹¹Interestingly, he only means musharakah by partnership and accepts mudarabah as a separate category.

Maududi is one of the well-known Muslim thinkers. In one of his books, Maududi (1970) tries to answer the question of how to make economic reconstruction without interest and he discusses the issue of Islamic form of banking in this context. According to him, banks are useful and necessary institutions but they need to be re-arranged according to the interest prohibition of Islam. Even though he does not mention any specific name for these re-organised banks, he draws the outlines of their structure. In interest free banks, there would be two types of accounts; first, current or savings accounts whose deposited money will not be invested by the banks but instead will be used for daily cash dealings and short-term interest free loans, second, investment account¹² in which the money will be invested. In this investment account, the banks and depositors will be partners and they will share the profits, if there is any, among each other according to a fixed ratio.

It was mentioned before that the first Islamic banking attempt was in Egypt. The initiator behind this attempt was Ahmed el-Najjar. Below, we will share some of his ideas about Islamic banking which were presented in different conferences in 1971 and then collected in an edited book. El-Najjar (1992) had the initial idea that interest-free banking is the appropriate model for social and economic development of Muslim societies. Such a model has two building blocks; decentralised structure and partnership instead of interest. In that regard, he shares the details about the model through the example of Mit Ghamr local savings banks. In these banks, there are three types of deposit accounts; savings account, investment account and social services fund. Money can be taken whenever it is wanted in the first account and there shall not be any interest payment. The investment account holders are the partners of the bank due to the amount and time of their capital contribution. The third account depends on the donations made by free will and it serves as insurance when it is necessary. On the other hand, these interest-free banks are giving two types of credits to their customers; non-investment credits and investment credit. In the former one, the customer shall pay back the credit without any interest and in the latter one, the bank and the customers are partners to each other.

Even though there are more works from 50s, 60s and 70s, it is difficult to reach these sources. The works which are more accessible are mostly from 80s. One of these works is belonging to Chapra (1985). As one of the aspects of the alternative monetary system, Islamic banks' general structure is described by the author under two headings; resource mobilisation and forms of investment. According to this, Islamic banks mobilise their resources through demand deposits and mudarabah deposits. Demand deposits can be

¹²The author does not name it directly in that way but according to his descriptions, this is what is meant by him.

withdrawn on demand, they are fully insured and they do not give any return. On the other hand, the basic forms of investment are; mudarabah, shirkah or acquisition of shares of joint stock companies.

Another work from 80s is belonging to Iqbal and Mirakhor (1987). Their book is first dealing with theoretical considerations about Islamic banking and then concentrating on the specific attempts of the Islamisation of banks in Pakistan and Iran. The first part of their book is our main concern. As in most of the other works, they start by the indication of the prohibition of interest in Islam. In accordance to the prohibition of interest, "... the shariah has developed two specific forms of business arrangements, mudarabah and musharakah." Connected to the reasoning of the prohibition of interest, they indicate that "... shariah condemns even a guarantee by the working partner to restore the invested capital intact." This point should also be kept in mind.

In this sub-section, we shared six different works about the initiative ideas for interest free/Islamic banking within the period of 1945-1987. In all of these works, Islamic banking is presented as an alternative model for conventional commercial banking. This alternative model is constructed upon partnerships instead of interest/riba. Among the aforementioned works, only the last one mentions both mudarabah and musharakah as partnership types. In some of these works, the structure of an Islamic bank is described in more detail by explaining the sources of fund (liability side) and uses of fund (asset side). The jurisprudential properties of these items are also indicated by some e.g. investment/mudarabah deposits should not be guaranteed, demand deposits should not get any return, profit and loss sharing rules and criticism for the existence of reserves.

2.4 Conclusion

In this chapter, we searched the shariah background of two specific Islamic partnerships, mudarabah and musharakah, in Islamic jurisprudence, in history and in early works of Islamic banking and finance. Below figure can be helpful to see how this background has been changed since the birth of Islam until today:

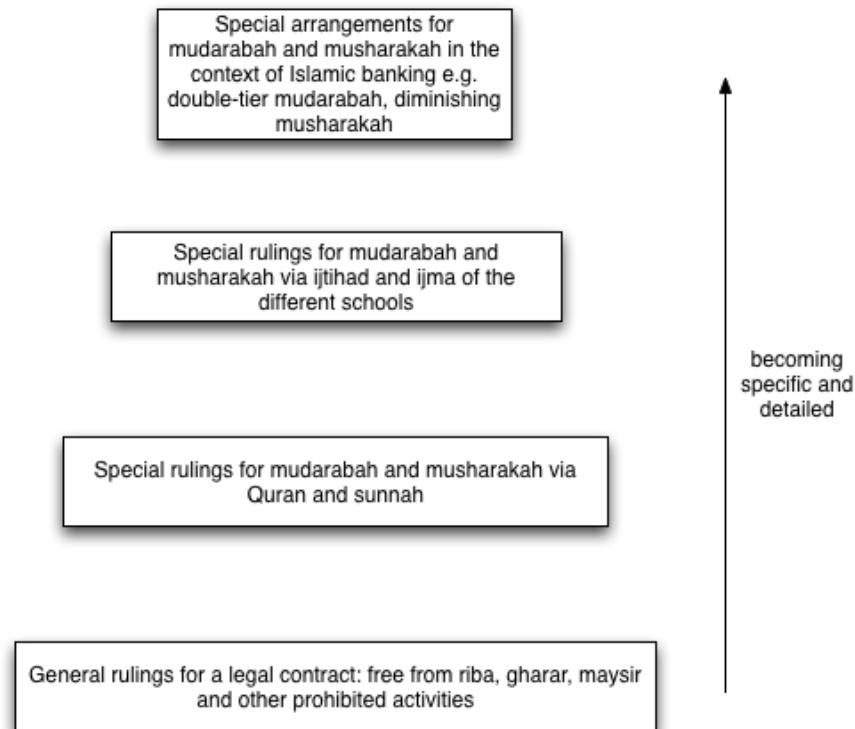


Figure 2.2: Evolution of shariah background of mudarabah and musharakah. *Source:* Graphed by the author.

It can be seen from above figure that the shariah aspect of mudarabah and musharakah has become more specific and detailed throughout the evolution. From this process, we have observed the following primary shariah related aspects of mudarabah and musharakah:

- Mudarabah is a sleeping partnership in which one partner puts capital and the other one his labor. Musharakah is a capital partnership in which all the partners put capital and at least one of them puts also labor.
- In mudarabah, profit is shared according to pre-agreed ratios and loss is totally belonging to the owner of capital. In musharakah, profit sharing ratio should either be proportioned to capital contributions or be set freely, while loss sharing ratio should definitely be proportioned to capital contributions.
- Neither in mudarabah nor in musharakah, capital is guaranteed. Furthermore, there should not be any fixed return for any of them.
- In mudarabah, the agent is wakil (proxy) to the principal which means that he holds

the capital by the permission of the principal. Hence, mudarib is responsible from the loss if and only if there is misconduct and/or negligence. This is compatible with the rule of daman (responsibility/liability)¹³ in Islamic jurisprudence.

These are also the aspects which will be the focal points when the current Islamic banking PLS applications are discussed.

¹³Technically, it means “Surety against and responsibility for all insurable risks as well as uncertainty.” (Khan, 2003a)

Chapter 3

Partnership Applications in Islamic Banks

In chapter 2, the shariah background of Islamic partnerships was shared. In this chapter, we will concentrate on the current partnership applications of Islamic banks and we will discuss what kind of shariah related concerns these applications create.

3.1 Lack of PLS and Abundance of Murabahah

One of the most idiosyncratic aspects of Islamic banking is the principle of PLS which is carried out by mudarabah and musharakah instruments. It can especially be seen in early works of Islamic banking that PLS was designed as the building block of this new modern alternative banking system. However, it has been a widely pronounced fact that Islamic banks' financing depends more and more heavily on debt-based, short term instruments rather than Islamic partnerships. According to Samad et al. (2005), 2002 reports of two Islamic banks reveal the following results; for the Bank Islam Malaysia Berhad, mudarabah accounts only 0.66% and musharakah does 3.53% of total financing whereas for Bahrain Islamic Bank, mudarabah constitutes 9.33% and musharakah does 2.16% of total financing. IDB which was founded in 1975 is expected to be one of the role-model institutions. According to our calculations based on IDB annual reports, table 3.1 is prepared. It can be seen that equity investments are taking small place within total assets.

Year	Equity capital inv./TA
1999	0.04
2000	0.04
2001	0.04
2002	0.06
2003	0.06
2004	0.07
2005	0.01
2006	0.11
2007	0.13
2008	0.01
2009	0.01

Table 3.1: The ratio of equity capital investment in total assets for IDB, 1999-2009. *Source:* Annual reports of IDB in between 1999-2009, graphed by the author.

On the other hand, table 3.2 shows the amount of mudarabah and musharakah financing within total assets of some Islamic banks as of 2010.

Name	Musharakah/TA	Mudarabah/TA
ABC Islamic Bank (IB)	0.001	0.001
Al Baraka Bahrain	0.041	0.019
Bahrain IB	0.086	0.040
Dubai IB	0.108	0.041

Table 3.2: The ratio of musharakah and mudarabah financing in total assets in some Islamic banks, 2010. *Source:* Annual reports of the aforementioned banks as of 2010, tabulated by the author.

The number of Islamic banks included on this table is not so many due to data availability. According to the table, mudarabah and musharakah financing are less than 10% in general. It can also be seen that mudarabah financing is less than musharakah financing in all of the cases. The question here is; if Islamic banks are not using their original partnership arrangements for financing, what else are they using? The answer is short-term, debt-based financing modes, and especially murabahah. In its original form, murabahah is a sale contract but not a financing method. However, because of the difficulties arising in the application of mudarabah and musharakah financing, its use as a financing method is accepted by the scholars¹. However, murabahah applications create some shariah related

¹Murabahah transaction has been approved during the Islamic Bank Conference held in Dubai in 1979

discussions. For instance; to have a contract with subject matter different than commodities, to shorten the commodity owning period, to purchase the commodity from the client i.e. 'buy back'. In that regard, Bayindir (2005) searches through the murabahah contracts and notices that some of the Islamic banks include conditions such as payment of interest if there is delay. He asserts that such conditions taken place on murabahah contracts make Islamic banks as credit providing institutions instead of being seller of the goods demanded by customers. Hence, Usmani (2002) asserts that murabahah "... should neither be taken as an ideal Islamic mode of financing, nor a universal instrument for all sorts of financing. It should be taken as a transitory step towards the ideal Islamic system of financing based on musharakah or mudarabah." Yousef (2004) calls the massive use of murabahah as 'murabahah syndrome'. Figure 3.1 shows the existence of such a syndrome.

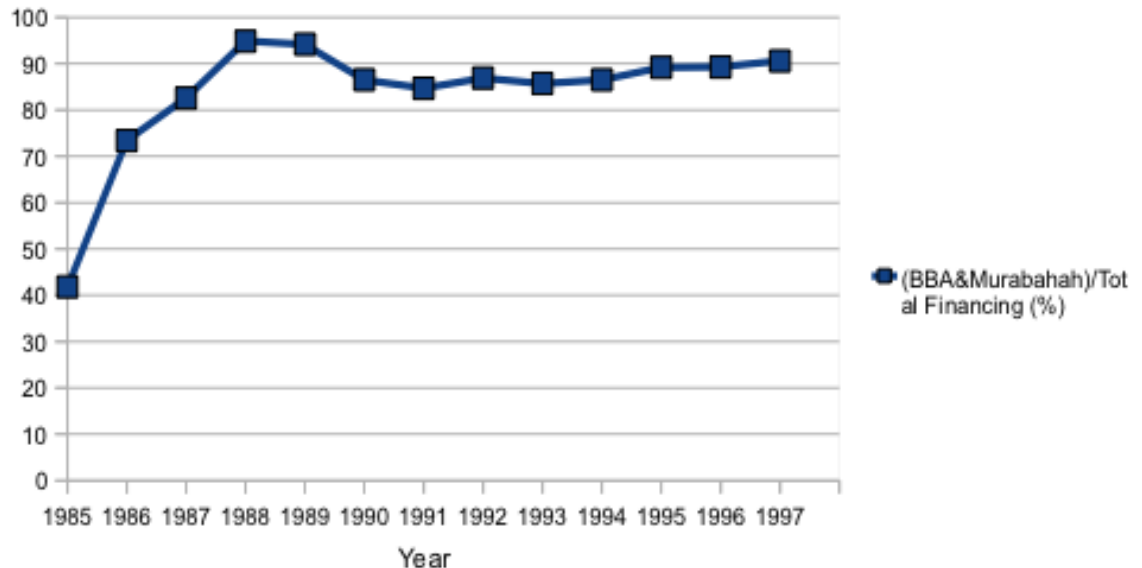


Figure 3.1: Financing structure of Bank Islam Malaysia Berhad, 1985-1997. *Source:* (Rosly, 1999), graphed by the author.

It can easily be seen from these numbers that the dominance of bai bithaman ajil (BBA)² and murabahah was increasing throughout the 80s and 90s. More evidences of the fact that murabahah is more preferred than PLS instruments can be seen from table 1.3 and also during the second Islamic Bank Conference held in Kuwait in 1983. Moreover, during the third juristic forum held in 1990, murabahah was accepted.

²Deferred payment sale.

figure 1.2 shared in chapter 1.

The lack of PLS and the abundance of debt based short term instruments are problem since, as Bacha (1995) correctly indicates, with the use of debt-like instruments, Islamic banks will stay in the periphery of the finance and such a case is not compatible with the social needs of the countries. The ultimate question is why such a situation occurs for Islamic banks. So far, different reasons have been indicated for the lack of PLS based deposits and financing. In his re-visited country specific study, Ascarya (2010) lists the reasons of the lack of PLS in Indonesia. The reasons are grouped as internal and external. The outstanding internal problems are technical and managerial meanwhile the basic external problems are lack of commitment of the authorities and the lack of trust among society. In another work, Dar and Presley (2000) list the reasons of the lack of PLS in general. Some of these reasons are; PLS contracts are vulnerable to agency problems, they are riskier, they need well-defined property rights and they are not feasible for short-term funding. Febianto and Kasri (2007) have their own list to explain why Islamic banks tend to avoid PLS arrangements. Some of these reasons are the lack of transparency, high monitoring costs and asymmetric information. Lastly, as a result of the facts and figures from Malaysia and Bahrain, Samad et al. (2005) assert the following reasons for the low level of PLS instruments; agency problem, ambiguity in assets' ownership and investment constraints.

Even though we accept the validity of all these arguments, according to our main hypothesis, the lack of PLS is basically due to the extra risks arising by the application of Islamic partnerships. Here, these extra risks are asymmetric information and credit risk. Asymmetric information occurs "... whenever the lender lacks the necessary information and control on the borrower's ability and willingness to repay her debt." (Bebczuk, 2003). The most common asymmetric information forms are adverse selection and moral hazard. The first one appears when a lender "... is not capable of distinguishing between projects with different credit risk when allocating credit." (Bebczuk, 2003). Moral hazard is "... the borrower's ability to apply the funds to different uses than those agreed upon with the lender, who is hindered by his lack of information and control over the borrower." (Bebczuk, 2003). Briefly, the first form appears before the contract is signed or a deal is sealed and the second form occurs after the agreement is done. The existence of asymmetric information causes lack of PLS on both asset and liability sides of Islamic banks. Connected to asymmetric information, another risk which triggers the lack of PLS in Islamic banks is credit risk. Credit risk is simply the risk of default of the borrower. When Islamic banks sign a mudarabah contract as a rabb al-mal, there is high probability of credit risk since

the contract “... does not give the bank appropriate rights to monitor the mudarib or to participate in management of the project.” (Greuning and Iqbal, 2008). Even though credit risk is not specific to Islamic banks, credit risk pertaining to PLS instruments in Islamic banks is having idiosyncratic properties. Furthermore, equity investment risk and capital impairment risk come into scene by the existence of credit risk. The detailed analysis of how asymmetric information and credit risk appear in terms of PLS instruments and how they can be measured and mitigated will be performed in chapter 4.

3.2 Guaranteeing deposits and deposit insurance

Even though they are used synonyms, guarantee and insurance do mean different things. Hence, before anything else we would like to clarify them. According to the Harriman’s financial dictionary (Briscoe and Fuller, 2007) guarantee is “A commitment made by a person to be answerable for the debts or liabilities of another.” On the other hand, insurance is “A contract in which payment of premiums covers the insured against something that may, or may not occur.”

In chapter 2, it was found out by the help of different sources (e.g. Malik’s hadith on mudarabah, AAOIFI 8/7 regulation on mudarabah, BNM’s regulation on musharakah, Majallah, early works about Islamic banking) that neither profit nor capital shall be guaranteed and insured in PLS contracts. However, today, guaranteeing and insuring the PLS based investment deposits in Islamic banks started to become a common practice. Of course, these practices are not done directly. One of the most common ways of guaranteeing and insuring is the third party involvement e.g. PIDM which was established in 2005. What PIDM does is to provide “... protection to depositors against loss of insured Islamic deposits placed with Islamic member institutions in the unlikely event that an IMI is unable to meet its financial obligations.” (PIDM, 2009). In this system, a member institution pays annual premium to the deposit insurance fund. Annual premiums are depending on the member institution’s total insured deposits. The system is built upon kafalah bil ujr (guarantee by fee) principle. Shortly, kafalah “... is a contractual guarantee given by the guarantor to assume the responsibilities and obligations of the party being guaranteed on any arising claims.” (PIDM, 2009). The legal permissibility for the establishment of PIDM was given by the Shariah Advisor Council of BNM in 2002. According to the council, “... deposit insurance scheme in Islamic banking is permissible, based on the concept of mutual guarantee among the IFIs, as participants to the scheme. The implementation of deposit insurance scheme does not contradict Shari’ah principles, since its objective

is to protect the public interest, especially the depositors and the banking industry as a whole.” (PIDM, 2009). A similar deposit insurance fund called Bank Deposit Security Fund (BDSF) was established in Sudan in 1996. As in the case of Malaysia, member banks pay premiums to BDSF in order to protect investment deposits.

Turkey is another example which we would like to share more information about. In Turkey, interest free banking was established under the name of ‘special finance house’ in 1983. Their names have been changed to ‘participation banking’ since 2005. According to the third article in banking law (*Bankacilik Kanunu*, 2005), participation account is an account in which the deposit holders do not get fixed return but they share the results of the use of their funds by the bank and there is no guarantee for their capital. Between the years 1984 and 1999, there was no insurance for such accounts. In 2001, ‘trust fund for special current and participation accounts in special finance houses’ was established. The management of the fund was belonging to the association of special finance houses. The trust fund was not a real insurance institution, instead, it was based on the risk distribution among special finance houses. This application has been ended in 2005 by the transfer of the fund to the ‘savings deposit insurance fund’ (SDIF). SDIF is a public institution connected to the treasury of Turkey. Before the inclusion of the participation banks’ funds, its main aim was to insure the savings deposits in conventional banks.

It was mentioned at the conclusion part of chapter 2 that mudarib is wakil to rabb al mal hence he is responsible from the loss if there is misconduct and negligence. This is due to the rule of daman. Hegazy (2008) searches through mudarabah contracts of some Islamic banks to see how this daman principle is applied in practice. He finds that the contracts ask some protective measures such as pledge, personal guarantee or third-party guarantee. He concludes that “In an attempt to avoid abusive practices by their mudaribs, some IFIs resort to a contractual provision that reverses the presumption innocence, which Islamic law grants to the mudarib, if the mudaraba fails to reach its projected profits or if the mudarib fails to abide by the terms of the mudaraba.” It can clearly be understood from his findings that by the inclusion of some protective measures such as guarantees in mudarabah contracts, Islamic banks actually violate the granted rights of mudaribs.

There are two legitimising arguments behind these insurance or guaranteeing practices; third-party guarantee and necessity. In that regard, Khan (2003b) argues that Islamic banks give two choices to depositors, security but not growth in their savings, growth in their savings but no security. These two exclusionary choices cause low and medium level income groups to put their savings on murabahah rather than mudarabah while high income groups take risk and earn higher returns. Hence, guaranteeing deposits is daru-

rah (necessity) for Islamic banks to maintain social justice. But he underlines that such a necessity is acceptable only for Islamic banks and only the capital can be guaranteed but not the returns. His suggestion for the deposit insurance structure is based on tabarru (donation) where contributions from shareholders' income turns into an account.

On the other hand, as counter arguments, Errico and Farahbaksh (1998) argue that Islamic banking practices differ from the paradigm version where some of the paradigm characteristics are the non-existence of nominal value of guarantee for investment deposits and the existence of equity based system where capital is at risk. The difference appears between paradigm and current practice since "All deposits, including investment ones, are explicitly or implicitly guaranteed." Connected to this argument, El-Gari (2003) asserts that "Acceptance of the bank to guarantee the capital of the investment deposit explicitly in the deposit contract would revert the investment contract into a loan contract. This would, in turn, lead to treating any increase in the amount deposited as a form of unlawful interest." More specifically, El-Gari (2003) accepts that *mudarib* can be volunteer to guarantee the capital as a gift. But this voluntary act should not be stated in the contract. Moreover, there is a danger that such a volunteer act can become a tradition. Third party-guarantee is also permissible, but, this third-party should be an independent actor which is difficult to find in reality. According to him, one of the possible problems which can occur by a country-wide deposit insurance scheme is that the paid capital of the Islamic Deposit Insurance (IDI) fund can be contaminated with conventional funds since Islamic and conventional banks coexist together. Indonesia is an example for such a situation where there is one pool in which all the premiums and returns out of purchasing securities are mixed. The same problem is valid in the Turkish system whose details were mentioned above. In the current Turkish system, participation funds based on interest free principle and savings deposits of conventional banks are insured by the same institution, SDIF, and by the same procedures. Moreover, participation funds are insured generally without taking into account the differences among risk types (Alici, 2008). Such a risk differentiation approach is important since the capital can only be assured if there is negligence or misconduct by the agent.

The basic reason why there are attempts to make Islamic bank deposits guaranteed is to decrease the effect of the extra risk pertaining to Islamic partnership instruments. In this case, the extra risk is credit risk. Credit risk, which was explained above, is a problem since there is possibility that the bank as *mudarib* can get loss which lessens the deposited capital of the investors. This can cause the depositors to move their funds to other banks i.e. withdrawal risk. Guarantees and insurance are two common measures

against credit risk for lending activities in conventional banks. However, PLS instruments are not lending activities and the indirect use of these measures creates a question mark in terms of shariah compatibility.

3.3 Income smoothing

Income smoothing is a commonly used accounting application by financial institutions. Briefly, income smoothing is “The practice of carefully timing the recognition of revenues and expenses to even out the amount of reported earnings from one year to the next.” (Albrecht et al., 2008). Income smoothing is becoming a commonly used practice for Islamic banks too. However, both the reason and the techniques of income smoothing are different than the conventional banks. The reasons will be explained later in this section. Here, we will discuss the techniques.

According to the IFSB (2010) guidance note on the practice of smoothing, there are four methods used by Islamic banks as smoothing techniques; to give up part or all of the mudarib share, to make transfer from shareholders’ current or retained profits to investment account holders as a gift, to use profit equalisation reserve (PER), to use investment risk reserve (IRR) . The last two methods need more detailed explanation. According to the glossary of Islamic economics and finance (Khan, 2003a), PER is “The amount appropriated by the Islamic bank out of mudaraba income before allocating the mudarib’s share, in order to maintain a certain level of return on investment for investment account holders.” On the other hand, “With reference to Islamic banks, it (IRR) is the amount appropriated out of the income of investment account holders, after allocating the mudarib’s share, in order to provide a cushion against future losses for investment account holders.”

There are few researches showing how Islamic banks practice income smoothing in reality. One of them is the research done by Taktak et al. (2010) in which it is found that 75% of the Islamic banks out of 66 use income smoothing techniques. The guidance note of IFSB (2010) reveals that it is difficult to see how the first two aforementioned methods of income smoothing are used in practice since Islamic banks are not sharing any information about them on their annual or financial reports. On the other hand, PER and/or IRR practices are generally disclosed by Islamic banks. It is also revealed that some Islamic banks practise PER with an unusual process of appropriation not before but after the deduction of mudarabah income. Moreover, some Islamic banks use profit equalisation provision instead of PER. Lastly, in their specific work, Ismail and Shahimi (2006) use data from 15 Malaysian Islamic banks to find out what determines PER decisions. They

Bank Name	Information for PER
Abu Dhabi IB	A part of the deserved profits from Mudaraba based investment accounts can be reserved as PER and shall be subsequently utilised in order to maintain certain level of profit distribution to the account holders.
Affin IB Berhad	PER refers to the amount appropriated out of the total gross income to mitigate the undesirable fluctuation of income and to maintain a certain level of return to depositors.
Hong Leong IB Berhad	PER is a mechanism to reduce the fluctuations in the profit rates payable to the depositors. It is provided based on the Framework of the Rate of Return issued by Bank Negara Malaysia.
IB of Britain	Profit stabilisation reserve is used to maintain returns payable to customers on Mudaraba based savings accounts.

Table 3.3: Information about income smoothing practices of some Islamic banks, 2010. *Source:* Annual reports of the aforementioned banks as of 2010, tabulated by the author.

conclude that non-performing financing, allowance for diminution in value of investment securities, net income before provision and capital ratio determine PER significantly. The results of our own search about the practices of income smoothing by Islamic banks can be seen from table 3.3. For the construction of this table, we have checked through 26 Islamic banks from different countries. In only 4 of them we could find information about PER. In case of Islamic Bank of Britain, PER is named as profit stabilisation reserve, even though it serves for the same aim. Interestingly, we could not find any information about IRR in none of these 4 cases. In general, these results do not necessarily mean that the other 22 Islamic banks do not apply PER or/and IRR or aforementioned 4 Islamic banks do not apply IRR. Even if they apply, they simply do not share information. Lastly, in none of the 4 cases, the explanation about PER is satisfactory since they do not give information if the reserves are taken before or after the allocation of mudarib share, how many percentage of the profit is appropriated for the reserves or if the account holders are informed about the appropriation.

There are some issues -especially regarding to shariah compatibility- arising by the application of income smoothing in Islamic banks such as transparency, risk of potential abuse against to depositors, moral hazard, blurriness between Islamic and conventional banking, liquidation, capital adequacy ratio (CAR) calculations and harmonisation (IFSB, 2010). Below, we will explain each of these problems.

The transparency issue arises due to the lack of disclosure about the application of income smoothing by Islamic banks. According to the analysis of Sundararajan (2008), only about 30% of the Islamic banks surveyed disclosed the amount of PER in their balance sheets for the period of 2001-2003. Above table constructed by us can also be an example for this problem.

The risk of the potential abuse against investment depositors may arise since the depositors have no power to make decisions about income smoothing practices and sometimes they do not have any knowledge at all. The potential abuser in that regard is shareholders. If it is taken into account that shariah is the way of keeping bank activities reliable and just, an application which can cause risk of the abuse of depositors by shareholders, then the application of income smoothing becomes questionable.

Moral hazard is another issue about income smoothing since the use of IRR can cause Islamic banks to take excessive risks. Moreover, depositors would not like to monitor the acts of the bank when they know that their returns are smoothed.

The share of risk by depositors due to the principle of PLS is one of the unique features of Islamic banks and by income smoothing practices, this uniqueness is put into danger.

On the other hand, liquidation issues arise especially for PER since it is belonging both to depositors and shareholders. During liquidation process what to give to who becomes a problem. And tis can cause injustice.

Theoretically, the calculation of CAR³ should not become a problem for Islamic banks since the losses are supposed to be burdened by depositors. However, to be able to give competitive returns to deposit holders, Islamic banks use PER and/or IRR and if these two are not enough, Islamic bank shareholders take back some parts of the risk from depositors which creates displaced commercial risk. Shortly, displaced commercial risk appears "... when an Islamic bank is under pressure to pay its investors-depositors a rate of return higher than what should be payable under the 'actual' terms of the investment contract." (Greuning and Iqbal, 2008). So, this risk is not an extra risk causing a doubtful shariah compatible risk mitigation tool, but instead it is an extra risk caused by the bank itself

³Capital is a cushion against potential losses. CAR is a ratio of capital to risk which measures the capacity of a bank in terms of meeting the liabilities and risks such as credit risk, operational risk etc.

to complete the job of doubtful risk mitigation tools i.e. PER and IRR. The displaced commercial risk is symbolised by α in the standard formula announced by the IFSB for Islamic banks' CAR calculation:

$$CAR = \frac{C}{W_{C+N}(C+N) + W_{PSIA}(\alpha \cdot PSIA)} \quad (3.1)$$

where C is the own capital of a bank, N represents non-PLS based deposits, W is the average risk weight and $PSIA$ is the profit sharing investment account. The problem here is to find out PER and IRR which provide optimal risk-return. So far there is no rule or regulation deciding any standards for PER and IRR. One of the unique works in that regard belongs to Sundararajan (2008). According to his calculations, when displaced commercial risk is zero, it means that depositors burden the risk, α is zero and PER, IRR are also zero. When displaced commercial risk is 1, it means that bank takes back all the risk from depositors, alpha is also 1 and minimum required PER is proportional to standard deviation of market benchmark return while minimum required IRR is proportional to standard deviation of the difference between the return on asset and provisions as percentage of assets. However, as it was mentioned above, there is no minimum or maximum standards of PER and IRR set for Islamic banks. Hence, the use of PER and IRR complicates the calculation of CAR .

Lastly, since income smoothing practices differ from country to country an even from bank to bank in one country, it creates harmonisation or standardisation problems among Islamic banks.

Additionally to the aforementioned problems, connected to the existence of displaced commercial risk, Rosly and Zaini (2008) make an analysis where they compare the rate of return on equity (ROE) and return on mudarabah deposits (ROMD) for six Islamic banks in Malaysia as of 2006. They find that ROMD is lower than ROE for each of the banks. This is unexpected since, in theory, mudarabah investment account holders burden quite much risk and their return also should be high. Then, they conclude that such a result implies the treatment of mudarabah deposits in a similar way to fixed deposits where risks are borne by the bank's capital! Thus, the applications of income smoothing causes a change in the structure of investment deposits.

The basic reason behind all these income smoothing practices which may cause aforementioned problems in Islamic banks is the extra risk arising by partnerships. In this case, there are two connected extra risks; rate of return risk and withdrawal risk. As described by IFSB (2005), rate of return risk arises "... in the context of their (Islamic banks') overall balance sheet exposures. An increase in benchmark rates may result in IAH's (investment

account holder's) having expectations of a higher rate of return." This is why it is also called as benchmark risk. Rate of return risk can cause withdrawal risk since "... depositors will withdraw their funds if they are receiving a lower rate of return than they would receive from another bank. If an Islamic bank is run inefficiently and keeps producing lower returns, depositors eventually will decide to move their money, eroding the franchise value of the bank." (Greuning and Iqbal, 2008). Thus, to mitigate these two risks, Islamic banks use different smoothing techniques, especially PER and IRR.

3.4 Determination of rate of return and profit sharing ratio

It is known that Islamic banks deal with rate of return whereas conventional banks deal with interest rate. Briefly, rate of return is the ratio of the amount yielded from an investment relative to the amount invested. On the other hand, interest rate is the yield of the borrowed money within a specific period. Hence, there are three differences between interest rate and rate of return; first, the former is the yield from borrowed money while the latter is the yield from an investment. Second, for the former case, the risk is only on the borrower side meanwhile for the latter one the risk is shared. Third, the amount of the yield of the former one is known while it is unknown for the latter case. The yield is unknown for the rate of return since it depends on the profitability of the investment and management efficiency of the agent. The connection between rate of return and profit sharing can be seen from the following example; assume that you put 500\$ as rabb al-mal in mudarabah agreement and you agree that the profit sharing ratio would be half-half. If the investment yields 100\$, it means that the rate of return is 20% where half of this return is yours i.e. 10% of the invested capital which becomes 50\$ ($500 \times 10\% = 50$) in this case. What is known by the actors while signing the contract is the profit sharing ratio but not the rate of return.

It can be remembered from chapter 2 that for mudarabah, profit sharing ratio can be anything agreed between the actors and any loss which is not caused by negligence and misconduct is burdened by rabb al-mal. For musharakah, all of the four basic Islamic school of thoughts agree that the loss sharing ratio should be proportioned to capital contributions. According to Shafi'i and Maliki school of thoughts, profit sharing ratio must also be proportionate to capital participation in musharakah, whereas, Hanafi and Hanbali schools allow that the agreed profit sharing ratio can differ from the capital participations. Their allowance depends on the argument that the entitlement of profit can be grounded

on capital, labor or liability.

The current applications of Islamic banks in terms of the determination of rate of return and profit sharing ratio can be examined in two parts; the asset side and liability side. For the asset side, when the bank is the capital owner, Sadique (2009) clarifies that “Determination of the profit sharing ratio in joint enterprises is primarily done by Islamic banks through ascertaining the amount of return it intends to realise on its capital exposure... After the bank has determined the amount of return it wishes to achieve, the remainder of the expected profit, irrespective of its size, is taken as the profit share of the client...” To be more specific, assume that the bank puts 100\$ and it wants to realise 5% return on its capital which requires it to have 5\$ profit. If the expected profit is 8\$, this corresponds to 62.5% profit sharing ratio for the bank and 37.5% for the customer, no matter how much capital he puts. Simply, what Islamic banks do is to target a pre-determined return which is the basis for the profit and loss sharing ratio. Since Islamic banks can not assure fixed profits, they instead flatten their targeted returns which at the end affect the profit sharing ratios i.e. instead of fixing A, they fix B which A is dependent on. In such a case, the period of exposure, rather than the profitability and risk, is the most important factor taken into account by the bank. Moreover, the negotiation power of the customer is minimum due to standard contracts. In the end, as Sadique (2009) argues “Although a direct violation of the shariah requirement is avoided through converting the expected return on capital to a proportion of the expected profit, the process could not be held to be indicative of intent at a genuine sharing of the profits.”

For the liability side, when the bank is the agent, one can notice that each Islamic bank announces rate of return rates for prospective investment deposit holders. It is true that these are not the promised rates but the expected ones based on historical data. However, as explained above, these announced rate of returns are the remaining part of the targeted returns of the bank. The interesting point here is that these announced returns are mostly parallel to conventional interest rates. There are some empirical works proving this point. For instance; Bacha (2004) uses data for the period of January 1994-July 2003. For his data analysis he uses Pearson correlation and ordinary least square (OLS) regression to find the relationship between average rate of return offered by Islamic banks for 3 month deposits and interest rate paid on 3 month fixed deposits. He finds that the relationship between average returns in Islamic and conventional banks is strong positive and the relationship side is from conventional rate to Islamic bank rate. In another work, Cevik and Charap (2011) use data for the period of January 1997-August 2010 and conclude according to their co-integration, causality, vector error correction model (VECM) and

correlation analyses that there is a strong co-integration between conventional and Islamic deposit rates in Malaysia and Turkey. There is also causality between them with the direction from conventional bank deposit rates. Lastly, by using data from January 1997 to October 2008 in Malaysia, Zainol and Kassim (2010) get the result from Pearson correlation that there is a very strong and positive relationship between interest rate and rate of return. Of course such a parallelism does not mean that these two are the same things, however by this, the expected effects of PLS contracts become far from being achieved.

The reason behind the applications described above is to decrease the volatility effect of the extra risks pertaining to PLS instruments i.e. rate of return risk and withdrawal risk which were explained in the previous section.

3.5 Conclusion

In this chapter, we have discussed the PLS based applications causing concerns, especially from shariah point of view, in Islamic banks. These applications are listed as the following; the lack of PLS and abundance of murabahah, guaranteeing deposits or using investment deposit insurance, income smoothing especially by the use of PER and IRR and the determination of rate of return and profit sharing ratio. For each of these practices, we started by explaining them and showing evidences for their existence, then we continued by the problematic issues for these applications. Lastly, we use the variants of our general hypothesis to explain the *raison d'etre* of the existence of each of these applications. According to the general hypothesis of this work, these practices arise due to extra risks pertaining to mudarabah and musharakah instruments. In each case, this extra risk appears differently. For the lack of PLS, the extra risks are asymmetric information and credit risk, for guaranteeing and deposit insurance it is credit risk, for smoothing practices it is rate of return risk and withdrawal risk and for the rate of return determination it is again rate of return risk and withdrawal risk.

In the end, we argue that what Islamic banks need to do is to find risk management tools which are less prone to shariah concerns to deal with these extra partnership risks. This will be the subject of the next chapter.

Chapter 4

Risk Analysis

The Islamic partnership practices which cause problems especially in terms of shariah concerns were explained in the previous chapter. Moreover, each risk type as the basic reason of these practices was identified. Since the practices explained in chapter 3 cause problems and shariah concerns, the aim should be to decrease them gradually and to stop them entirely in the end. Through this aim, in this chapter, it will be analysed how each of the aforementioned risks is arising and how they can be measured and mitigated without ignoring the shariah compatibility.

4.1 Asymmetric Information: Depending on capital structure theories

It was argued in section 3.1 that Islamic banks prefer to use debt-based murabahah over equity-based PLS instruments. In conventional economics, the choice between debt and equity is searched by capital structure theories. Hence, first we will touch upon the basics of capital structure theories. Then, we will see how the concept of asymmetric information was introduced within the conventional capital structure theories. Lastly, we will show how the concept of asymmetric information has taken place inside the capital structure models of Islamic economists.

M-M model is referred as the earliest capital structure theory. According to the third proposition of Modigliani and Miller (1958), "... regardless of financing used, the marginal cost of capital to a firm is equal to the average cost of capital, which is in turn equal to the capitalisation rate for an un-levered stream in the class to which the firm belongs." In simple terms, the value of a firm is irrelevant of how it is financed. However, this

conclusion depends on the assumptions of no taxes, no bankruptcy cost and no uncertainty i.e. perfect market. The relaxation of the assumption of bankruptcy cost was done by Stiglitz (1969) and Stiglitz (1974) who shows how bankruptcy cost can create serious problems for the M-M model. Then, the relaxation of the uncertainty assumption came by the intuition of Akerlof (1970) who firstly identified the problem of adverse selection as one of the types of asymmetric information. In his paper, he gives automobiles market as an example. He supposes four kinds of cars; a new and good car, a new and bad car, an old and good car, an old and bad car. When one buys a new automobile from such a market, the only thing which is known is the probabilities of getting a good or a bad car. But when the same person uses the car for a while, he gets an idea about the quality of it. As a result, "An asymmetry in available information has developed: for the sellers now have more knowledge about the quality of a car than the buyers." In a more general context, "Adverse selection characterises all markets in which one side of the market is less informed than the other about the properties of the goods and services being traded." (Phlips, 1988). On the other hand, the concept of moral hazard in the context of modern economics was clarified in 1960s and 1970s. Arrow (1963) explains that "What is desired in the case of insurance is that the event against which insurance is taken be out of the control of the individual. Unfortunately, in real life this separation can never be made perfectly." He identifies the problem here as moral hazard since there is lack of perfect information whether the insured person had anything to do with the occurrence of the insured event. In general, "Moral hazard is the hidden action arising after a contract is endorsed since it is extremely costly to monitor the effort expended towards meeting the objectives of the contract." (D'souza, 2008). In sum, asymmetric information refers to the situations where there is unequal distribution of information between the contracting parties. It can arise as hidden information before the contract is signed or it can arise as hidden action after the contract is signed. The former case is known as adverse selection while the latter one is moral hazard.

By these, asymmetric information started to become one of the crucial elements of the analysis of financing choice. Ross (1977) argues that under informational asymmetry, firms signal their private information by rising their debt level i.e. leverage. In their famous work, Myers and Majluf (1984) conclude that "It is generally better to issue safe securities than risky ones. Firms should go to bond markets for external capital, but raise equity by retention if possible. That is, external financing using debt is better than financing by equity." Their results became known as the pecking order hypothesis where the order of financing decision is first internal risk-free debt, then risky debt and lastly equity. The

pecking order theory assumes that information asymmetry is an important determinant of firms' capital structure.

Since then, there have been many works dealing with the effects of asymmetric information on corporate finance decisions. We would like to mention some of these works here. To illuminate the cases which do not fit into the hypothesis of Myers and Majluf, Kale and Noe (1991) construct their own model and conclude that "... whenever there's a tax induced advantage to debt finance, there exists a separating equilibrium in which higher quality firms issue equity." The logic behind such a conclusion is that when debt financing is eased by tax reduction, low quality firms can more easily mimic high quality ones. Hence, to signal their quality, high quality ones turn to equity option. On the other hand, as a partial support for the hypothesis of Majluf and Myers, Narayanan (1988) argues that "... in a world of asymmetric information, the use of debt by profitable firms keeps the inferior firms out." So, according to him, the choice of debt over equity helps to the market for being clean from 'lemons'. Lastly, in their alternative study, Bharath et al. (2009) do not start by the assumption of a priori effect of asymmetric information. Instead, by the help of market microstructure measures, they develop a firm-level index to understand if asymmetric information really matters for capital structure decisions. According to their results, "... the greater a firm's adverse selection cost, the greater the portion of its financing deficit that firm will fund through debt in the current fiscal year." Hence, asymmetric information and especially adverse selection, does drive capital structure decisions.

In terms of the mutual analysis of financing choice of IFI's and asymmetric information, Aggarwal and Yousef (2000) compare murabahah and mudarabah contracts under the existence of moral hazard and adverse selection. The authors have the following conclusions from their analysis; if the cost of investment is high, debt contracts expand the region in which good entrepreneurs get funding, if the cost of the investment project is medium, debt contracts create welfare improvement and if the cost of the investment project is low, debt contracts are more preferable for the bank due to higher return while the entrepreneurs would prefer equity contracts to retain more of the proceeds. In another work, Khan (1985) compares the variable return schemes such as mudarabah and musharakah with fixed return schemes such as murabahah for Islamic banking. The author first constructs a basic model and extends it with the inclusion of asymmetric information. According to the result, the choice between variable and fixed return scheme depends on the monitoring cost and this is higher for the former one. In another work where the existence of asymmetric information is an initial assumption, Haque and Mirakhor (1986) show optimal PLS contracts under uncertainty and information asymmetry. Their model is based on a classic

agent-principal relationship where the agent is the entrepreneurial firm and the principal is consumer-investor. In the end, they conclude that the effect of asymmetric information together with uncertainty on PLS is over-investment. In a similar kind of work, the model of Baldwin et al. (2002) aims at finding the behaviour of an Islamic firm in the presence of moral hazard and adverse selection. According to the results of the linear optimisation problem, the authors find that the optimal pure adverse selection contract menu creates over-investment and over-employment. The reason of such a result is explained by the authors that "... the investor finds that the most efficient way to reduce the cost of the information asymmetry is to award information rents that just overcome the temptation of the agent to lie." It can be noticed that this result is consistent with the previous work. On the other hand, Dar et al. (1999) start with the fact that there is lack of PLS in Islamic finance institutions. To understand and show the reason behind this fact, they model how PLS is not chosen over other contracts. They find that the contract choice primarily depends on size and profitability of the project where large and highly profitable projects would be financed by interest based fixed return scheme meanwhile medium size and medium level profitable projects would be financed by PLS schemes. The authors argue that the reason for such a result is the agency problem inherent to PLS contracts. Lastly, as qualitative works, Bacha (1995) argues that even though it is labelled as equity, *mudarabah* is actually a hybrid instrument which makes it facing with agency problems of both equity and debt, and Sarker (2000) asserts that the severity of asymmetric information for PLS contracts is explained by the existence of the ex-ante information limitations related to project quality and the incentive of under-reporting.

Up to here, seven different works about the relationship between debt-equity choice and asymmetric information in IFIs have mentioned. The first two of them was comparing the effects of asymmetric information on PLS and *murabahah* instruments. According to Aggarwal and Yousef, fixed debt-like contracts expand the set of projects funded, so they improve the social welfare. According to Masood Khan, the fixed contracts are preferable since they have less monitoring cost under the existence of asymmetric information. As an alternative view, El-Din (1991) argues that the arguments which support the idea that debt-like contracts improve welfare depend on the limited mean-variance model of Tobin. He also argues that the model of Masood Khan is only valid for non-corporated small-scale firms. On the other hand, the third and fourth works show how Islamic institutions make optimal decisions when asymmetric information is given. The fifth model shows a negative relationship between size, profitability and PLS use due to the agency problems. The last two works are based on qualitative analyses about the subject.

In sum, according to the literature in modern economic theory and Islamic finance, it can be concluded that asymmetric information does indeed affect the choice of financing. Even though the side of this effect is not totally clear, in most of the cases it is in favour of debt over equity.

4.1.1 Identification and measurement of asymmetric information for PLS instruments: comparison with murabahah

In this section, by our own analysis, we aim to model the particular asymmetric information problems on two different types of financing in Islamic banking to reveal how they arise and what they cause. Then, we will concentrate on how to tackle with the negative results.

Adverse selection and moral hazard pertaining to equity financing in Islamic banks can be followed by the modelling of mudarabah and musharakah. Assume that there are two customers, A and B. They would like to finance their projects which are both expected to yield V_n . For their projects, each one of them asks V_0 investment from the bank. In case of success, the bank gets the following expected revenue from each project:

$$ER_{bank} = (V_n - V_0) \cdot (pr_{bank}) \cdot \alpha \quad (4.1)$$

where, pr_{bank} is the profit sharing ratio for the bank and α is the probability of success. Since V_n and V_0 are the same for both of the customers, what is decisive for the revenue of the bank is the probability of success of each project i.e. the type of customers. If the probability of the success of A is higher than B, then she should get a higher profit sharing ratio:

$$pr_A > pr_B \quad (4.2)$$

But, for the adverse selection case, what is unknown by the bank is the type of customers. So, the bank sets the profit sharing ratios for its customers according to the following relation:¹

$$pr_A > pr > pr_B \quad (4.3)$$

This also explains why Islamic banks set standard contracts with fixed profit and loss sharing ratios for everyone. In that case, the deadweight loss arises due to the gain of B at the expense of A:

$$DL_{PLS} = (pr_A - pr) \cdot (V_n - V_0) \quad (4.4)$$

¹It should be reminded that $pr + pr_{bank} = 1$.

Equation 4.4 is valid for the asset side of the bank. For the liability side of the bank, when Islamic bank is the agent, the adverse selection problem for PLS becomes different since the investor-customers have no power on the decision of the profit sharing ratio as much as the bank has. Because of that reason and for the aim of the comparison with murabahah, we will only concentrate on the asset side relations here. We also do not take into account the risk appetite of the actors here.

The adverse selection problem arises due to the same reason for murabahah i.e. the type of two customers is unknown. Assume there are again A and B who ask from the bank an asset which values V_0 . Since murabahah is a debt-based instrument, the good type A would get less mark-up than B if there was no adverse selection. Because of the existence of adverse selection, the bank decides a mark-up rate according to the following rule:

$$mr_B > mr > mr_A \quad (4.5)$$

The deadweight loss in the case of murabahah is simply as the following:

$$DL_{mur} = (mr - mr_A) \cdot (V_0) \quad (4.6)$$

where mr is the mark-up rate set by the bank. The left-hand side of equation 4.4 and equation 4.6 can easily be set for the same values. What is decisive here is the other side of these equations. It can be seen that for the cases of $V_n > 2V_0$ i.e. if the investment yields more than hundred percent, the adverse selection has higher negative effects for PLS. However, such cases are very rare. Hence, it can be concluded that, in most of the cases the adverse selection is less problematic for PLS than murabahah when the bank is principal. The basic reason for that is the deadweight loss depends on the value of the asset for murabahah while it depends on the profit yielded for PLS. In any case, the actor who becomes disadvantaged is neither bank nor the bad-type customer but the good-type one.

Now, assume that the Islamic bank has decided to make contract with one of the customers mentioned above. From now on, there is the danger of moral hazard between the actors. Moral hazard can arise due to different reasons for PLS. As far as we are concerned, these reasons are; to use the borrowed money in other means than originally indicated, to announce the profit less than its original value by inflating costs, to find ways for escaping from responsibility in case of negligence and excessive risk taking.² This last reason

²It can be argued here that these reasons are especially problem for mudarabah since in musharakah, the principal has the right to be involved in the management process. Hence, the following equations pertaining to PLS can be understood as mostly related to mudarabah.

would not be a big problem if the agent is risk averse. For the sake of the comparison with murabahah, we will concentrate on the first and third reasons since in those cases doubts about moral hazard arise when there is loss at the end of the business i.e. when there is default. However, for the second case, it is enough for the principal to become suspicious about moral hazard when the announced profit is much more less than the expected one. After the announcement of loss in the first and third reasons, an investigation starts. Each investigation can have two outcomes; fail or not-fail. Our concern here is the outcome of not-fail which means that moral hazard is detected. If moral hazard is detected, the agent is responsible for the whole loss and investigation cost (IC) due to negligence. Thus, for PLS, the net income of the customer becomes:

$$NI_{PLS}^c = -loss - IC \quad (4.7)$$

Meanwhile, the bank gets its initial endowment back, which is:

$$NI_{PLS}^b = V_0 \quad (4.8)$$

For murabahah, the investigation process is also started when the debtor announces default. If this investigation does not fail then the debtor pays the cost. The customer generally announces default after he makes some payments to the bank and gets some part of the asset. Here, we neglect the down-payment which is a common application in murabahah. The net income of the bank can be seen from equation 4.9:

$$NI_{mur}^b = (1 - s) \cdot V_0(1 + mr) \quad (4.9)$$

where s is the portion of the asset value taken by the debtor until default time. Meanwhile, the bank is still keeping the $(1 - s)$ portion of whole asset. The value of the asset is $V_0(1 + mr)$ now since the bank adds a profit margin to the original asset value. The corresponding net income of the customer when moral hazard is detected is:

$$NI_{mur}^c = s \cdot V_0(1 + mr) - IC \quad (4.10)$$

When (4.7) is compared with (4.10), it can be seen that the customer is definitely ending in a better situation under murabahah than PLS when moral hazard is detected. On the other hand, if (4.8) and (4.9) are compared, the situation of the bank becomes better under murabahah if:

$$mr > \frac{s}{1 - s} \quad (4.11)$$

The organised summary of what we have done up to this point can be followed from table 4.1

	Moral Hazard	Adverse Selection
PLS	$NI^b = V_0$ $NI^c = -loss - IC$	$DL = (pr_A - pr) \cdot (V_n - V_0)$
Murabahah	$NI^b = (1 - s) \cdot V_0(1 + mr)$ $NI^c = s \cdot V_0(1 + mr) - IC$	$DL = (mr - mr_A) \cdot V_0$

Table 4.1: The comparison of asymmetric information between PLS and murabahah for Islamic Banks' asset side relations.

It can be seen from the table that, under moral hazard, the customer ends with a higher net income in murabahah contract than PLS one. It means that, the customer has less incentive to sign a PLS contract with the bank if moral hazard is mostly probable or the customer has less incentive to cheat under PLS contract than murabahah since he would end up with a less net income. The bank has also possibility of being affected more negatively from moral hazard in PLS contract than murabahah. For adverse selection, the cases where negative effects are higher in PLS contract are rather rare. Hence adverse selection is not a big problem for PLS for most of the cases, at least for the asset side relations.

In sum, our results are showing that the choice of murabahah over PLS is related to the existence of moral hazard on the asset side. This conclusion can explain partially why Islamic banks continue to raise their funds on the liability side through PLS based investment deposits meanwhile they use their funds on the asset side mostly by non-PLS based instruments i.e. it is more difficult to solve moral hazard problems than the adverse selection ones. However, this does not mean that moral hazard and adverse selection are not problems for the liability side relations, but, we will discuss this later on. Lastly, by some sources, monitoring cost is also mentioned as an asymmetric information problem. We did not take into account this element separately in our analysis.

After the comparison of asymmetric information for murabaha and PLS instruments in Islamic banks, we can now turn our attention to the question of how to deal with asymmetric information problem pertaining to PLS instruments.

4.1.2 Mitigation of asymmetric information for PLS instruments

It was mentioned above that under moral hazard, the customer has less incentives to sign a PLS contract than murabahah for the asset side relations. The same is also probable for

the bank. In this section, we will suggest a two-period incentive approach to lessen the moral hazard problem and a signalling approach to lessen the adverse selection problem pertaining to PLS instruments.

4.1.2.1 Using Incentives against moral hazard

In economic literature, different suggestions have been discussed about how to solve moral hazard problem e.g. monitoring, aligning interests, bonding, dynamic relationship etc.

In terms of the measures taken by Islamic banks against moral hazard pertaining to PLS instruments, (Addawe, 2012) reveals that it is indicated by a shariah audit manager that against the moral hazard arising due to under-reporting, the bank imposes on the client a minimum profit expectation. Moreover, we can expect the use of conventional measures as long as they are compatible with Islamic jurisprudence e.g. monitoring, long-term relationship, aligning interests like in the application of diminishing musharakah. Such an expectation can be confirmed by some suggestions. For instance; Naim (2010) suggests the use of initial screening, due diligence, valuation, approval and structuring, monitoring against moral hazard in musharakah.

Our problem solving approach will be built upon incentives. By this, we do not argue that there can not be other measures or this is the most efficient one. What we argue is that within the jurisprudential limits, this is an applicable solution. Hence, a brief review about incentives both in conventional finance and Islamic finance will be shared below.

The theory of incentives has been developed since 1970s, but as Laffont and Martimort (2002) indicate, it is possible to find the roots of incentives even in early works of modern economic theory such as Adam Smith and incentive contracts in agriculture. The theory of incentives deals with the problems arising due to principal-agent relations since the “Delegation of a task to an agent who has different objectives than the principal who delegates this task is problematic when information about the agent is imperfect.” (Laffont and Martimort, 2002). A solution is called incentive compatible when “... each individual has a personal incentive to act in accordance with some overall interest.” (Bannock et al., 2003). One of the outstanding names in the literature of incentives is Barnard (1968) with his suggestions of specific and general incentives. Some of the specific incentives mentioned by him are; material incentives, personal or non-material incentives, desirable physical conditions, ideal benefactions. On the other hand, literature of incentives is rather limited in Islamic finance. For instance; Dar (2007) shows how to increase incentive compatibility of Islamic hedge funds. In another work, Farook and Farooq (2011) argue that “Banks and financial institutions are incentivised by modern prudential regulations to minimise

their exposure to equity based instruments such as mudarabahah and musharakah.” As a solution to this, they suggest an incentive based approach “... through the imposition of a variable bank-specific α -factor.”

Our incentive model to prevent moral hazard in PLS contracts for both asset and liability side relations has the following initial property; each PLS contract, no matter for how long period it is agreed upon, is evaluated in two equal periods. At the end of the first half period, there are three possible outcomes for the ongoing business; profit, no change and loss. Assume that the bank is principal and the customer is agent (asset side relation). For the case of profit and no change, one of the most important moral hazard causes can be under-reporting the profit value, especially by inflating costs. Hence, an investigation is started after the first half-period to see whether there is any under-reporting or not.³ If any under-reporting, moral hazard, is detected then the numbers will be corrected before second period starts and the customer pays the investigation cost. The incentive point here is that the customer’s profit sharing ratio will be decreased for the entire period. To see how such a scheme works, we constructed below model⁴:

R : return which is consisted of positive real values and it has uniform distribution in $(d,1)$ where d is a positive constant

G : the space of all possible ways of reporting the return. The agent picks G which translates R into some reported return; $g: (d,1) \rightarrow (d,1)$

F : the space of all possible ways of punishing. The bank picks $f \in F$ describing punishing possibilities; $f: (d,1) \rightarrow (0,1)$

c : fixed cost of monitoring and it is either paid by the bank or by the customer depending on the result of the monitoring

The problem of the agent is to choose $g(r)$ for a given $f(g, c)$ to maximise his expected utility:

$$EU(Y) = EU(Y(r, g, f(g, c))) \quad (4.12)$$

where $Y(\cdot)$ is pay-off of the agent. On the other hand, the bank’s problem is to choose the optimal punishment strategy for a given $g(r)$:

$$EU(P) = EU(P(f(g, c), g(r))) \quad (4.13)$$

³At this point, our suggestion about who can make this investigation is a third party.

⁴The model is the modified version of the model of Khan (1985). As the basic differences of our model; monitoring is certain, there is the additional space of punishing, monitoring cost can be paid by either parties depending on the result of the monitoring

By the optimal punishment strategy, the bank tries to maximise its expected utility shown by $P(\cdot)$. The Nash equilibrium solution is the pair of (g^*, f^*) satisfying the following conditions:

$$EU(Y(g^*, f^*)) \geq EU(Y(g, f^*)), \quad \forall g \quad (4.14)$$

$$EU(P(g^*, f^*)) \geq EU(P(g^*, f)), \quad \forall f \quad (4.15)$$

If we apply this general model to our problem, first, the agent observes r and reports $g(r)$ out of which $ag(r)$ is given to the bank. It means that a is the profit sharing ratio of the bank and $(1 - a)$ is the profit sharing ratio of the agent. If the agent is monitored and found guilty, he would loose $[r - ag(r) - r(1 - a - k) + c]$ since his sharing ratio would be decreased by k percent and he needs to pay the monitoring cost. Hence, his expected pay-off is:

$$Y_A = r - ag(r) - f(g)[ag(r) - ar - ak - c] \quad (4.16)$$

On equation 4.16, the first part shows how much the agent yields while he is under-reporting and the second part shows how much he would loose by the punishment. On the other hand, the pay-off of the bank is:

$$E(P_B) = \int_d^1 ag(r) - c + f(g)[-ag(r) - ra - rk - c] m dr \quad (4.17)$$

where m is $1/(1 - d)$ On equation 4.17, the first part shows how much the bank would get if there is not any punishment where the bank also pays the monitoring cost. The second part shows how much the bank would get if there is a punishment. From this, we can define the function of $f(g(r))$:

$$f(g(r)) = \begin{cases} 0, & r < \frac{c + a \cdot g(r)}{a + k} \\ 1, & r > \frac{c + a \cdot g(r)}{a + k} \end{cases} \quad (4.18)$$

A corner solution is inefficient here. If the bank has access to randomised punishment strategy, then it would choose $f(g(r))$ such that :

$$f(g(r)) \in (0, 1), r = \frac{c + a \cdot g(r)}{a + k} \quad (4.19)$$

If we take the derivative of Y_A due to $g(r)$:

$$g(r) = \frac{1}{a} \left(ra + rk + c - \frac{a(f(g) + 1)}{f'(g)} \right) \quad (4.20)$$

Then, if we put $g(r)$ into equation 4.19:

$$f'(g) + \frac{a}{2c}f(g) = \frac{a}{2c} \quad (4.21)$$

The reason for putting $g(r)$ into equation 4.19 is to find for which $g(r)$, the equality condition is satisfied. This form is ordinary differential equation with constant coefficients. Hence, if we solve this equation, we get the following:

$$f = -1 + (e^{\frac{\alpha}{2c}g})\kappa \quad (4.22)$$

The next step is to find the optimum strategy of the investor:

$$g^*(r) = \frac{r\alpha + rk - c}{\alpha} \quad (4.23)$$

If we put this optimum reporting strategy into equation 4.22, we can find the unknown κ :

$$\kappa = e^{-\left(\frac{r\alpha + rk - c}{2c}\right)} \quad (4.24)$$

For this κ value, the optimal $f^*(g)$ is:

$$f^*(g) = -1 + e^{\left(\frac{\alpha g - \alpha r - rk + c}{2c}\right)} \quad (4.25)$$

Hence, the Nash equilibrium pair is:

$$(g^*, f^*) = \left(\frac{r\alpha + rk - c}{\alpha}, -1 + e^{\left(\frac{\alpha g - \alpha r - rk + c}{2c}\right)} \right) \quad (4.26)$$

For the liability side relations, when the bank is agent and the customer is principal, the above incentive model can also be used. Again, an investigation is done at the end of the first-period to see whether the bank under-reports the profit. If there is moral hazard, the bank pays the investigation cost and its share will be decreased. On the other hand, there is no need for incentive strategy if there is loss at the end of the first period since the customer would be directly responsible from the loss if negligence as a source of moral hazard is detected. In sum, our incentive approach is applicable for any cases of under-reporting at the end of the first-period and moral hazard is detected after the investigation process. The incentive type is negative and material one.

4.1.2.2 Signalling against adverse selection

It was mentioned before that the bank as a principal (asset side relation) can protect itself from adverse selection problem by setting a standard sharing ratio which is in between the sharing ratio of a good customer and a bad one. Moreover, banks have the capability of collecting information about the prospective customers. However, when the customers are principal inside the liability side relation, they have not a similar power to arrange the profit sharing ratios among different Islamic banks and they also do not have so much capability of learning detailed information about them. Hence, adverse selection is especially a problem for liability side relations.

In literature, there have been suggestions about how to solve adverse selection problem e.g. in his famous work, Akerlof (1970) mentions the following institutions counteracting adverse selection problem; guarantees, brand-name, chains and licensing practices. Other commonly mentioned solutions are signalling, information disclosure and reputation. As it can be seen from all these suggestions, the key point here is to use a tool revealing the type of the seller or the agent to the principal. The use of guarantee and collateral is controversial for PLS instruments and reputation can be helpful if the relations between the agent and the principal are repeated. Below, we will concentrate on signalling as a solution since brand-name, chains and reputation are the basic measures utilised by Islamic banks in today's competitive market structure whereas information disclosure is a required measure due to the existence of regulatory authorities.

The person who firstly mentioned the signalling solution was Spence (1973). In his work, he defines signals as observable and alterable attributes such as education. He explains the use of signals in a job market where "Individuals are assumed to select signals so as to maximise the difference between offered wages and signalling costs." Other pioneering works of signalling are incentive-signalling approach of Ross (1977) and signalling model of Leland and Pyle (1977). Works about signalling have also paved the way for a specific research area called signalling games. Briefly, "A (finite) signalling game starts with a chance move that picks the type of player 1. Player 1 is informed about his type but player 2 is not. Player 1 moves first, player 2 observes player 1's action and moves next, and then the games ends." (Peters, 2008). If one constructs a simple table for a signalling game between Islamic banks, it could show why adverse selection is an important problem for customer-depositors i.e. the problem for depositors is, they can not understand that bad bank is just imitating the good one and when they deposit their money in this bad bank, they end up with a lower expected return instead of the higher return of the good one. So, what is important here is to find the best signal which reveals the good quality of the bank

and which can not be imitated by the bad one.

In literature, there are attempts to find a good signal revealing the quality of a bank. Dividend is a famous signalling candidate. One of the early works using dividend-signalling model belongs to Bhattacharya (1979). In his work, he develops "... a model in which cash dividends function as a signal of expected cash flows of firms in an imperfect-information setting." The major signalling cost of his model is dividend tax. In the end, he shows how the change in interest rate and tax would affect the signalling equilibrium. In another well-known work, John and Williams (1985) identify a signalling equilibrium with taxable dividends. Last but not the least, Miller and Rock (1985) show that "... an informationally consistent signalling equilibrium exists under asymmetric information..." In sum, all these initial works try to find a dividend-signalling equilibrium by theoretical models. The next step for the analysis of dividend signalling hypothesis is empirical research. In that regard, one of the earliest and unique works belongs to Eades (1982). In his work, he uses the signalling model of Ross and Bhattacharya and he performs two hypothesis testing; first, for dividend yield-own variance hypothesis and second, the relative signalling strength hypothesis. As a result of the first testing which covers the period of 1960-1979, he finds that, there is a negative relationship between dividend yield and own stock variance. This is compatible with the theory. However, for the second testing, he finds no supportive evidence for the signalling hypothesis. In another empirical work which is directly related to the role of dividend as a signalling for bank quality, Boldin and Leggett (1995) gather data from 207 institutions and find that high dividends per share signal that the bank is healthy. Additionally, as dividend payout ratio increases, the quality of the bank diminishes. At the end, it is possible to find both supportive (See: Kalay, 1980; Ryan et al., 2000) and opposing (See: Amihud and Murgia, 1997; Vieira, 2005) empirical works in literature. Hence, it can be said that, the empirical conclusion of dividend signalling hypothesis is yet to be clear.

In terms of the literature about signalling hypothesis for IFIs, Hassan et al. (2003) use dividend signalling hypothesis to explain the existence of short-term asset concentration. They find that Islamic banks are having stable dividends and to keep them stable, the banks prefer to use short-term financing methods such as murabahah. However, their work does not check the validity of the hypothesis but rather it proves the stability of dividend payments. In another work, Godlewski et al. (2011) find that sukuk issuance is a negative signal on the financial position of the issuing institution. The logic is since sukuk is a risk preventing tool, the higher amount of its issuance signals for higher risk.

Below, we will make our own empirical analysis to check the validity of dividend

signalling hypothesis for Islamic banks. The logic behind the dividend signalling theory is that banks can signal their quality through their dividend choices and if there is increase in dividend payments, it reflects positive expectations about future. In that regard our hypothesis is:

H_1 : Islamic banks with increasing trend of dividend are signalling for better future position

Our data cover 25 Islamic banks⁵ from different countries for the period of 2007-2010. Our multiple linear regression model is as the following⁶ :

$$ROE_t = \beta_1 + \beta_2 D \cdot RDIV_0 + \beta_3 ROE_{t-1} + \beta_4 (ROE_0 - ROE_{-1}) + \beta_5 LogAsset_{-1} + \varepsilon \quad (4.27)$$

where t is time either for year 1 (2009) or 2 (2010), ROE is return on equity which reflects the health of the bank, $D \cdot RDIV$ is the dummy multiplied with the annual dividend change between year 0 (2008) and -1 (2007) and lastly ε is the random error of the model. Dummy variable takes 1 if dividend has increased or decreased, 0 otherwise. According to the model, the future earning is proxied by the return on equity and the effect of the change of dividend payment is chosen as one of the independent variables. The existence of the other independent variables is necessary to control their effects on our dependent variable. The model was run two times, one with ROE_{2010} as dependent variable and one with ROE_{2009} as dependent variable. The results for the first model whose dependent variable is ROE_{2010} can be seen from table 4.2, 4.3, 4.4 and 4.5 and the results from the model which has ROE_{2009} as dependent variable can be seen from table 4.6, 4.7, 4.8 and 4.9.

⁵These Islamic banks are; ABC IB, Abu Dhabi IB, Affin IB Berhad, Al Baraka Bahrain, Al Baraka Turk, Al Bilad Bank, Al Rajhi Bank, Bahrain IB, Bank Asya, Bank Muamalat Malaysia, CIMB IB Berhad, Dawood IB, Dubai IB, Emirates IB, Faisal IB Egypt, Hong Leong IB, IB of Britain, Jordan IB, Kuveyt Turk, Kuwait Finance House, Meezan Bank, Qatar IB, Sharjah IB, Tadamon IB, Turkiye Finance.

⁶The model is constructed due to the model of Grullon et al. (2005) with some changes. For instance; the original model includes the market value as one of the independent variables which does not take part in our model, the dummy multiplied dividend change variable is simplified in our model. Detailed information about our data and data gathering can be obtained upon request.

	Mean	Std. Dev.	N
ROE2010	6.6820	15.26332	25
D·RDIV2008	46.8992	52.92427	25
ROE2008-ROE2007	-3.2292	5.44518	25
logAsset2007	21.7580	1.27934	25
ROE2009	5.3300	16.83418	25

Table 4.2: Descriptive statistics from dividend signalling model with *ROE2010* as dependent variable

R	R ²	Adj. R ²	Std. Err.
0.823	0.677	0.612	9.50658

Table 4.3: Model summary of the dividend signalling model with *ROE2010* as dependent variable

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3783.756	4	945.939	10.467	0.000
Residual	1807.502	20	90.375		
Total	5591.257	24			

Table 4.4: ANOVA for the dividend signalling model with *ROE2010* as dependent variable

	Std. Coef.	t	Sig.
Constant		-0.327	0.747
D·RDIV2008	0.057	0.438	0.666
ROE2008-ROE2007	-0.029	-0.223	0.826
logAsset2007	0.054	0.374	0.712
ROE2009	0.780	5.410	0.000

Table 4.5: Coefficients of the dividend signalling model with *ROE2010* as dependent variable

It can be seen from these results that the model which has *ROE2009* as dependent variable has slightly better adjusted R^2 . However, among our independent variables only *ROE2009* is statistically significant for the first model and *ROE2008*, (*ROE2008 – ROE2007*) are statistically significant for the second model at 95% confidence level.⁷ These significant variables are also the reason for adjusted R -squares being high. Hence, the validity of dividend signalling hypothesis for Islamic banks could not be confirmed. But these results can be re-evaluated by the change of data set and time factor.

⁷Since their probabilities are less than 0.05 significance level.

	Mean	Std. Dev.	N
ROE2009	5.3300	16.83418	25
D·RDIV2008	46.8992	52.92427	25
ROE2008-ROE2007	-3.2292	5.44518	25
logAsset2007	21.7580	1.27934	25
ROE2008	11.9072	11.82234	25

Table 4.6: Descriptive statistics of the dividend signalling model with *ROE2009* as dependent variable

R	R²	Adj. R²	Std. Err.
0.903	0.816	0.779	7.90909

Table 4.7: Model summary of the dividend signalling model with *ROE2009* as dependent variable

	Sum of Squares	df	Mean Square	F	Sig.
Regression	55550.280	4	138.570	22.182	0.000
Residual	1251.075	20	62.554		
Total	6801.355	24			

Table 4.8: ANOVA of the dividend signalling model with *ROE2009* as dependent variable

	Std. Coef.	t	Sig.
Constant		-0.161	0.874
D·RDIV2008	0.018	0.185	0.855
ROE2008-ROE2007	-0.235	-2.387	0.027
logAsset2007	-0.027	-0.242	0.811
ROE2008	0.920	8.031	0.000

Table 4.9: Coefficients of the dividend signalling model with *ROE2009* as dependent variable

If another possible signalling element is searched for Islamic banks, the basic condition for that element is to depend on free and rational choice of the bank which can not be mimicked by others. For instance; to decide whether to distribute dividends or not and how much distribution should be done is chosen by the bank according to its future predictions. This is why dividend is seen as a potential, proper signalling device. Profit sharing ratios could be another signalling device for Islamic banks, however today, they are kept stable because of competition. Hence, they are far from being reflections of future predictions. Our second alternative signalling device for Islamic banks is the use of extra reserve. Is-

Islamic banks are already following reserve requirements of their central banks. Rather than that, to keep extra reserve is their choice which is depending on the future expectations i.e. if the expectations are bad, then, the amount of extra reserve will be higher. As an extra reserve kept by Islamic banks, PER can be a good proxy. The signalling mechanism of PER would work in the way that Islamic banks with better asset quality hold less PER. So, this is our second signalling hypothesis for Islamic banks:

H₂: Islamic banks which have better quality would hold less PER.

The basic reason behind this argument is that cost of holding extra reserves is greater for better banks. The mathematical proof of this reasoning can be followed from the work of Greenbaum and Thakor (1989). We will explain this argument with an example here. Assume that you put 100 euro in an Islamic bank PLS account. You agreed on half-half profit sharing ratio. After one year period, the business(es) became successful and your account became 150 euro. That makes 50 euro profit in total and 25 euro profit for the bank. You decided to continue with that bank for one more year and kept your money there. The bank has two options now: either they can put all the money into business again or keep some part of it as an extra reserve in PER. Assume that the bank chose the first option and your money became 180 euro with 20% profit during the second period. That makes 30 euro profit in total and 15 euro profit for the bank. On the other hand, if the bank decides to put 2% of the profit earned during the first period ($50 \cdot 0.02 = 10$ euro) in PER, they start to their business with 140 euro instead of 150 euro at the beginning of the second period. It was said that the profit rate during the second period was 20%, hence, your 140 euro would become 168 euro at the end. That makes 28 euro profit in total and 14 euro profit for the bank. In sum, with 2% extra reserve, your account would become 168 euro instead of 180 euro and the bank's profit would become 14 euro instead of 15 euro. This 1 euro difference between the profits of the bank is the cost of holding extra reserves. This cost would be larger if the profit rate was higher for the second period e.g. 14 euro cost for 40% profit rate. It is obvious that better quality banks are having more chance of yielding higher profits and profit rates. Hence, for better quality banks, the cost of holding extra reserves would also be higher since they could earn more if they did not have these reserves. To check the validity of above hypothesis, an empirical research is needed. However, it is not an easy task to get information about PER since information disclosure about PER is not satisfactory among Islamic banks. This stays as an open question for now. Another open question is whether reserve requirements are preventing these extra reserves being signals for Islamic bank quality and if they do, at what point,

under what conditions...⁸

4.2 Credit Risk

It was mentioned in chapter 3 that together with asymmetric information, the existence of credit risk is one of the primary reasons for the lack of PLS in Islamic banks. In this section we will clarify how credit risk pertaining to PLS is arising and how it can be managed.

4.2.1 Credit risk in Conventional Banking

Credit, which is probably as old as humanity, is “A transaction between two parties in which one (the creditor or lender) supplies money or monetary equivalent goods, services, etc., in return for a promise of future payment by the other (the debtor or borrower).” (Joseph, 2006). Since modern banking is based on credit relations, credit risk is one of the most important financial risks inherent to it. In modern economic terminology, credit risk means “Exposure to loss as a result of default on a swap, debt or other counter party instrument.” (Gastineau and Kritzman, 1999). Credit risk can arise due to different reasons such as macroeconomic conditions, mismanagement and it can result in credit losses, bankruptcies and crunches. Since it is impossible to eliminate it hundred percent, the focus should be on to manage it. Joseph (2006) lists the main objectives of credit risk management as minimising bad loans, pricing credit risk, maximising benefits from potential credit opportunities and maintaining a reliable database. Inside the document of Basel Committee (1999b) the principles of banks’ management of credit risk are listed as establishing an appropriate credit risk environment, operating under a sound credit granting process, maintaining an appropriate credit administration, measurement and monitoring process, ensuring adequate controls over credit risk. Hence, credit risk management is a process including different steps such as identifying, measuring and modelling, monitoring and controlling the risk. Below, each of these steps will be explained briefly.

In terms of identification, credit risk can be separated into two general parts; pre-settlement risk and settlement risk. The first one arises during the transaction period while the second one arises after it. Additionally, credit risk can be represented by three elements; default risk, loss risk or recovery risk which determines the fraction of loss in

⁸According to Greenbaum and Thakor (1989), reserve requirements prevent the signalling power of extra reserves if they are so high or low. On the other hand, it does not prevent so much if the banks are more similar to each other. If this is the case also for Islamic banks, then, any future reserve requirements set for PER by AAOIFI should be strategic. Otherwise the signalling property of extra reserves can disappear.

default and exposure risk which is the amount at risk in default (Gestel and Baesens, 2009).

Measurement and modelling are connected to each other in a sense that modelling is used to measure credit risk. The methods which are used to measure the default risk are; rating, scoring and probability of default (PD). Ratings can be applied either by an agency such as Standard and Poor's (S&P) , Fitch, Moody's or by internally. Scoring can be done through discriminant analysis or logit and probit models. PD can be calculated either by a structural model e.g. Merton model or by an empirical model. The measurement of loss risk is loss given default (LGD) and the measurement of exposure risk is exposure at default (EAD). The expected loss is calculated by the use of these three elements:

$$EL = PD \cdot LGD \cdot EAD \quad (4.28)$$

where EL is expected loss and LGD is:

$$LGD = 1 - RR \quad (4.29)$$

where RR is recovery rate. It means that whatever is not covered at default is the loss at default. Modelling of credit risk has its foundations on the work of Black and Scholes (1973). As explained by Lando (2004), their option-pricing model made it possible that one can take the prices given and then find the market's perception about probability of default. Basel Committee (1999a) lists the following approaches to credit risk modelling; economic capital allocation for credit risk via (probability density function of credit losses), measuring credit loss via (default mode paradigm and mark to market paradigm), probability density functions, conditional and unconditional models.

When it comes to monitoring, it is clarified inside the Securities Regulatory Handbook of PricewaterhouseCoopers (2001) that the "... risk monitoring unit should be responsible for producing and distributing timely, accurate information about credit exposures such as line usage, concentrations, credit quality, limit exceptions, and significant counter party exposures."

As a last step, risk controlling or mitigation necessitates some tools. The widely pronounced tools are; risk-based pricing, tightening, credit guarantee and insurance, collateral, covenant, netting, diversification, capital adequacy and credit derivatives. Below, we will explain each of these tools.

The first method is taking into account the expected risk for the price of credit i.e. the higher the risk the higher the price.

Tightening is basically reducing the amount of credit. Such a reduction can be in general or for specific groups which are identified as risky.

Credit guarantee is “A type of insurance against default provided by a credit guarantee association or other institution to a lending institution.” (Bannock et al., 2003). There are different credit guarantee associations e.g. Export Credits Guarantee Department in UK, National Housing Credit Guarantee Board in Sweden, Credit Guarantee Corporations in Japan.

Connected to the concept of guarantee, collateral is “Assets used as security for a loan and which therefore can be seized by the lender if the borrower defaults on repayments.” (Kariithi, 2007). On the other hand, covenant is a “Clause in a corporate bond agreement in which the issuer makes certain promises to protect the bondholder. These could involve commitments on debt-equity levels, dividend payments, cash flow, etc.” (Kariithi, 2007). The theory about the relationship between collateral and credit risk is not clear-cut. One group (See: Chan and Kanatas, 1985; Bester, 1987) argues that low risk borrowers prefer to have collateral to get lower interest rates meanwhile another group (See: Boot et al., 1991; Manove et al., 2001) associates collateral with higher risk. There are empirical works to check the validity of these theories. For instance; the empirical work of Jimenez and Saurina (2004) proves the theory of the second group i.e. collateralised loans subject to a greater risk. As an exemplary work searching the relationship between covenants and credit risk, Demerijan (2010) finds that the probability of inclusion and the number of financial covenants are increasing parallel to the uncertainty of the borrower. Moreover, his results show that financial covenants limit the costs associated with borrower uncertainty.

Another tool, netting is basically “... to allow a positive and a negative to cancel each other out.”(*Glossary N-to-Z*, 2011). There are three types of netting which can be used for credit risk; close-out netting, netting by novation and payment netting (*Glossary N-to-Z*, 2011).

In modern portfolio theory, diversification is explained with a famous phrase; ‘not to put all your eggs in the same basket’. Diversification is important since concentration risk can arise as a result of imperfect diversification. There have been attempts to find the effects of portfolio diversification. In one of the early works based on an empirical analysis of 11 countries, Grubel (1968) finds that international portfolio diversification is an idiosyncratic source of world welfare gains from international economic relations. It is idiosyncratic since it is different than trade gains and productivity increment.

The next tool is to use capital buffer. In that regard, capital adequacy is “A measure of the value of capital owned by the shareholders of a financial institution relative

to the amount the institution has lent out.” (Bannock et al., 2003). One of the most important regulatory bodies to set standards for capital adequacy is BIS. The bank has a regulatory body called Basel Committee on Banking Supervision. So far, they have published two important documents; Basel Accord I and II. In these documents, as capital adequacy arrangement, equity capital is connected to the volume of the risky asset and its risk. Therefore, the capital adequacy framework marked by the documents is called also as the risk-weighted capital adequacy framework. In Basel I (Basel Committee, 1988), the framework has three parts; general capital adequacy requirements, eligible regulatory capital and risk-weighted assets. This last group has also three items in itself; credit risk weighted assets, market risk-weighted assets and large exposure risk requirements. Our concern here is the credit risk-weighted assets. The measurement of credit risk-weighted assets includes both on-balance sheet and off-balance sheet assets. For the on-balance sheet assets, risk weights are assigned to each class of assets. For the off-balance sheet assets, first they are converted into credit equivalents and then risk weight is applied due to the nature of the obligor. There are five risk weights; 0%, 10%, 20%, 50% and 100%. These weights show the riskiness of the assets and how much capital is needed to buffer them. For instance; cash is having no credit risk, hence, its risk weight is 0% and it does not need any capital buffer. By using the risk-weighted assets, the following capital ratio formula is calculated:

$$BCR = \frac{tier_1C + tier_2C}{RWA} \quad (4.30)$$

where BCR is Basel capital ratio, C is capital and RWA is risk weighted assets. $Tier_1$ capital is the core capital and $Tier_2$ capital is the supplementary capital. According to the requirements, at least 8% of the total capital should be backed for weighted assets. This is how the credit risk is mitigated by capital adequacy ratio i.e. to keep a specific capital buffer for credit-risk weighted assets. In Basel II (Basel Committee, 2004), the capital ratio was also calculated according to regulatory capital and risk-weighted assets with some modifications in the definition of $Tier_1$ and $Tier_2$ capital. The minimum ratio was also decided as 8%. For the risk weighted assets’ calculation, operational risk was added. The effects of Basel I and II capital requirements on credit risk have been investigated by some works e.g. Pausch and Welzel (2002) analyse the relationship between credit risk and capital adequacy requirements. They argue that capital adequacy regulation induces banks to behave ‘as if risk averse’ which helps them to decrease their credit risk.

The last tool, derivative, has been very popular since last 20 to 30 years. Derivatives are the products of financial engineering. Briefly, they are instruments which derive their values from the underlying assets such as commodities, currency. Derivatives can be cate-

gorised as forwards, futures, options and swaps. Our concern here is the credit derivatives. Different categorisations about the types of credit derivatives are available but the best-known types are; credit default swap, total return swap, collateralised debt obligation and credit spread option. A credit default swap is "... an exchange of a fee for a payment if a credit default event occurs." (Tavakoli, 2001). It is a contingent claim since the payment is done only when the default happens. The structure of the credit default swap is similar to insurance. On the other hand, "A total return swap is a swap in which one party makes periodic floating rate payments to a counter party in exchange for the total return realised on a reference asset (or underlying asset)." (Anson et al., 2004). Collateralised debt obligation, as its name refers to, is a security collateralised by different debt obligations. Lastly, credit spread option is an option which gives the right but not the obligation of the potential credit spreads. Credit derivatives are originally created for hedging the credit risk. However, the effects of them are mixed. For instance; by his mathematical modelling, Wagner (2007) concludes that even though credit derivatives provide risk transfer which increases liquidity is counteracted by excessive risk taking. Hence, the ultimate effect is stability reduction. Also by using mathematical modelling, Morrison (2005) concludes that as long as there is a lower bound on the size of the bank loans credit derivatives can be welfare-enhancing, otherwise, they can cause disintermediation and a reduction in bank monitoring. In another work, through the model based on cost of financial distress, Instefjord (2005) finds that credit derivatives may increase the bank risk especially if they operate in highly competitive markets. Duffee and Zhou (2001) model and find that if there is not severe asymmetric information problem, the use of loan-sale market will make credit derivatives harmful.

4.2.2 Credit Risk in Islamic Banking

Even though Islamic banking is not based on credit relations, it is not immune from credit risk.⁹ Inside the Guidelines of Risk Management for Islamic Financial Institutions published by IFSB (2005), credit risk is defined as the potential counter party failure in terms of its obligations in accordance with agreed terms. This counter party failure can be delay or default in payment, in delivery of the subject matter etc. Inside the same document, credit risk management is also defined as a process including the steps of identification, measurement, monitoring, reporting and mitigating. As risk mitigating techniques, risk-based pricing, permissible collateral and guarantee, clear documentation about cancellation and shariah compliant insurance are mentioned. However, it does not include any

⁹This is especially due to the existence of debt-based instruments such as murabahah.

specific credit risk management process for PLS instruments.

To see how these guidelines are reflected in Islamic banks, one can search through the risk management information shared in their annual or financial reports as of 2010. The summary of the results of our search through Islamic banks can be seen below:

Abu Dhabi IB: Credit risk control by focused target market, risk acceptance criteria, monitoring of credit exposures, diversification, continued assessment of creditworthiness. Moody's Risk Analyst risk rating system plus internal rating system are used.

Affin IB Berhad: External ratings such as RAM Rating Services Berhad, S&P's, Moody's and Fitch are used. There is also internal rating models. Risk mitigation techniques are to put financing limits, collateral and financial covenants.

Al Bilad Bank: Moody's rating model is used. Basel II is followed. Credit risk mitigation by financial and non-financial collateral and guarantees, credit limits and forecasting for the probability of repayment.

Al Rajhi Bank: Customer based rating methodology for financing assets with 22-point scale and 19 performing categories. External ratings from S&P's, Moody's and Fitch are used. Risk mitigation techniques are credit limits, diversification, collateral and guarantees.

Bank Asya: Credit risk management is based on the credit risk arising from lending activities. There is internal rating system.

Bank Muamalat Malaysia: External rating from different sources plus internal rating are used. Credit risk mitigation techniques are collateral and credit limits.

CIMB IB Berhad: Risk mitigation tools are collaterals, netting and diversification.

Dawood IB: Obligor Risk Rating system. Basel II is followed. External ratings such as Pakistan Credit Rating Agency and S&P's are used. Risk mitigation tools are collateral and diversification.

Emirates IB: To control the credit risk, credit exposures are monitored, concentration is avoided and creditworthiness is continually assessed. Risk mitigation tools are exposure ceilings, diversification, collaterals and guarantees, credit quality analysis.

Faisal IB Egypt: Customers are divided into 4 internal rating groups. External ratings such as S&P's are used. Risk mitigation tools are diversification, limits for risk exposure, collateral, derivatives and master netting arrangements.

Jordan IB: There is Clients Risk Assessment System. Credit risk management policy depends on clear credit and investment policy, identifying credit concentrations and methods of risk mitigation, studying, monitoring and following-up credit.

Meezan Bank: External ratings from JCR-VIS, PACRA, S&P's are used.

It can be seen from them that credit risk information shared by Islamic banks is diverse. Even though we searched through 26 Islamic banks, we shared information from 12 of them due to the content of the information. According to these 12 Islamic banks, there is a general trend among Islamic banks in terms of credit risk mitigation techniques which mostly depend on collaterals, guarantees, limits and diversification against concentration risk. It is also a general trend to use well-known external rating sources together with internal ratings. Lastly, information about credit risk management does not make any specific reference to PLS instruments. Rather, the information about credit risk management is based on lending activities.

In literature, the issue of credit risk in Islamic banking is mostly analysed through debt-based instruments. In that regard, one of the commonly searched subjects is factor analysis (See: Ahmad and Ahmad, 2004; Mismar, 2011). Another commonly searched subject is credit risk related concepts such as recovery rate, loan loss provision etc. (See: Ismail and Sulaiman, 2007; Mismar and Ahmad, 2011; Zoubi and Al-Khazali, 2007; Baele et al., 2011). In terms of the analysis of credit risk in Islamic banks, the book of Greuning and Iqbal (2008) has a whole chapter. In this chapter, they list the common measures against credit risk e.g. limiting tools such as putting limits on large exposures, lending to connected parties etc., classifying assets such as pass, watched, substandard and provisioning loss. Beside these works, it is possible to find general survey-based studies regarding to the importance of credit risk in Islamic banks. In their work including 19 Islamic banks from 5 countries in the Middle East, Khan and Ahmed (2001) find that the second most important risk among these Islamic banks is the credit risk. On the other hand, the direct literature about credit risk pertaining to PLS instruments in Islamic banking is mostly surveys. In their questionnaire survey including 28 Islamic banks from 14 countries, Ariffin et al. (2009) reveal the following results; Islamic bankers rate credit risk as the most important risk in their banks, credit risk is the primary risk for mudarabah mode of financing

and it is the second important risk for musharakah mode of financing. According to another survey covering 17 Islamic banks from 10 countries, Khan and Ahmed (2001) find that for mudarabah and musharakah, credit risk is the most important risk.

In sum, it can be argued as a result of the evaluation of the guidelines, Islamic banks' reports and literature that there is lack of detailed and specific approach in regard to credit risk pertaining to PLS instruments. Below, we will suggest a new approach based on credit risk definition, measurement and mitigation.

4.2.2.1 Credit Risk Definition and Factor Identification Pertaining to PLS Instruments

First of all, neither mudarabah nor musharakah is a debt contract. Second, neither capital nor profit is guaranteed in PLS based contracts. Henceforth, the classic definition of credit risk is not valid for mudarabah and musharakah instruments. There are some sources indicating the specificity of credit risk for PLS instruments. Meinhold (2010) argues that PLS financing modes alter the conventional way of looking at probability of default and risk exposure since there is neither a recognisable default event nor use of a collateral. Inside the guideline document of IFSB (2005), it is written that "The risks arising from the use of profit sharing instruments for financing purposes do not include credit risk in the conventional sense, but share a crucial characteristic of credit risk because of the risk of capital impairment." Lastly, inside the aforementioned book of Greuning and Iqbal (2008), it is indicated that in case of mudarabah investments, Islamic bank is exposed to credit risk on the amounts advanced to mudarib since there is no fixed return i.e. investment done by equity instruments of PLS can end up with impaired capital. However, as far as we are concerned, there is not any specific credit risk definition pertaining to PLS instruments. Below, we will make an attempt in that regard.

There are different risks inherent to each mudarabah and musharakah contract e.g. operational risk, rate of return risk and credit risk. Each of these risks has two components; uncontrollable risk such as political risk, industry risk and controllable risk such as management risk. The difference for PLS instruments is that default event arises due to controllable factors if and only if there is misconduct and negligence of the agent/working partner. For conventional banking, default happens even if the factor is uncontrollable and even if there is no misconduct or negligence. Hence:

Definition: Credit risk pertaining to PLS instruments in Islamic banking is the risk that the agent may not fulfil the contract obligations due to misconduct and negligence within controllable factors.

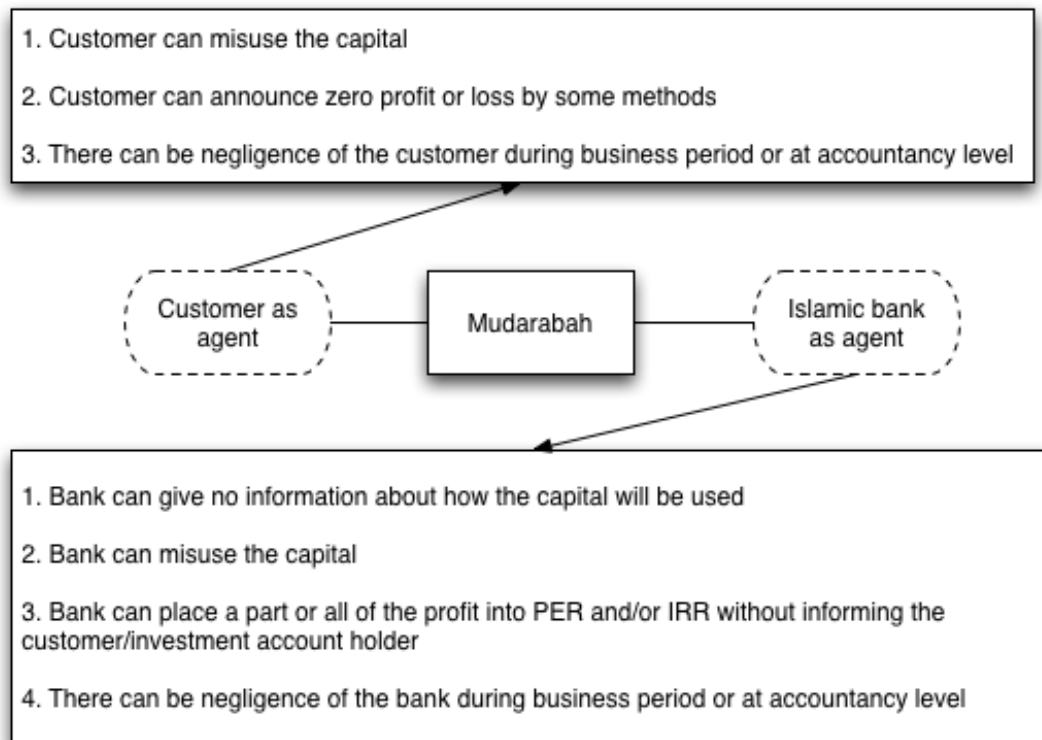


Figure 4.1: Possible factors of credit risk in a mudarabah contract. *Source:* Graphed by the author.

It can be realised from this definition that the agent in a PLS agreement can not be held responsible from many cases which a debtor can be i.e. the principal or lender is more vulnerable in a PLS agreement. Such a definition also shows the connection between equity investment risk, capital impairment risk and credit risk. There is investment risk by the use of PLS-based equity instruments since capital can impair but this can be accepted as credit risk only if the impairment arises due to misconduct and negligence. Moreover, the definition is helpful to evaluate if a factor is really a credit risk factor for PLS instruments or not. By taking into account the possible behaviour pattern of customers and Islamic banks as agents in a mudarabah agreement, we depicted below figure to show the possible credit risk factors which are compatible with the aforementioned definition.

On figure 4.1, all the items can cause the loss of a part or all of the capital invested where the agent can be held as responsible. First items for customer and Islamic bank as agent are not the same since giving no information about how the capital will be used is not possible for the customer-agent since Islamic banks are releasing the capital according to detailed investigation about the investment projects of them (See: State Bank of

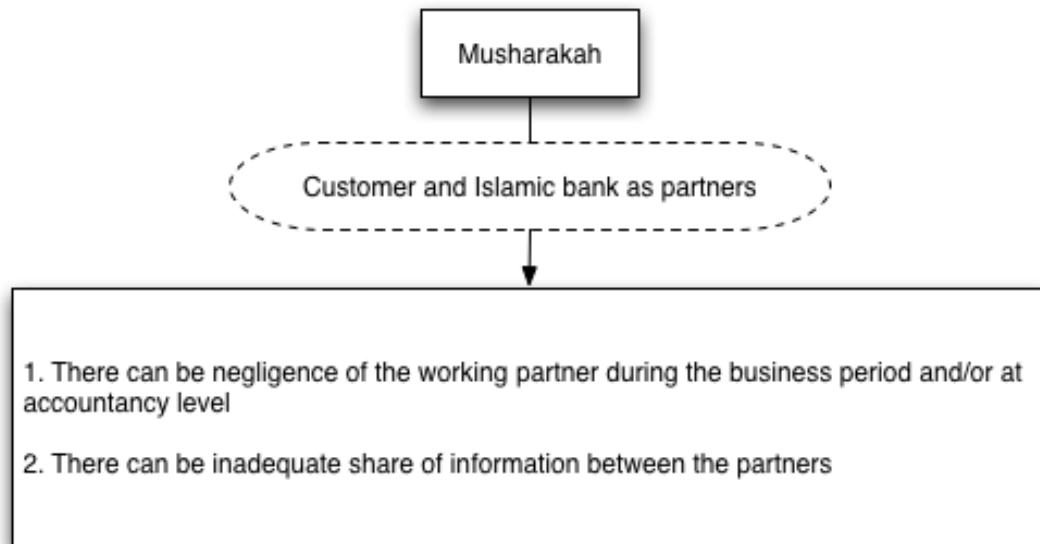


Figure 4.2: Possible factors of credit risk in a musharakah contract. *Source:* Graphed by the author.

Pakistan, n.d.). But Islamic banks as agents are more hesitant to share the same information with customers/investment account holders. The second items are also not the same since under-reporting of profit is more probable for customer-agent since there are more restrictive rules and regulations for accountancy practices of Islamic banks e.g. rules and regulations set by AAOIFI. On the other hand, as explained in the third item, Islamic bank as agent can put a part or all of the profit in PER and/or IRR as buffers even without informing the customers. Meanwhile, capital misuse by either side when they are agents can arise in different ways e.g. to invest in a more risky business than it is agreed on. Lastly, negligence can arise from either side at any step before the contract is terminated e.g. if the assets purchased for sale are kept in the store without takaful (Islamic insurance) coverage (BNM, 2010).

On the other hand, as it can be seen from figure 4.2, the credit risk factors for musharakah are different than mudarabah since each partner can have control over the management. It can be noticed from these two figures that the credit risk factors for PLS instruments do not include macroeconomic factors such as real interest rate, unemployment rate (See: Aver, 2008), external factors such as regulations (See: Zribi and Boujelbene, 2011) or managerial efficiency as they do in conventional banking. Hence, as it is mentioned before, the agent in a PLS agreement can not be held responsible from many cases which a debtor can be. This can explain why Islamic banks are hesitant to use PLS based financing especially

on their asset sides i.e. when they are principal.

4.2.2.2 Credit Risk Measurement Pertaining to PLS Instruments

After the definition and factor identification of credit risk for mudarabah and musharakah instruments, the next step is to measure it.

Today, credit riskiness of banks is measured by credit ratings. Briefly, credit ratings are professional opinions about credit risk supported by specific methods, analyses and evaluations. Some of the well-known global rating agencies are S&P's, Moody's and Fitch. In general, rating agencies use mathematical model-driven and/or analyst-driven ratings. The rating process of the agencies starts with ratings criteria including principles, methodologies and assumptions then quantitative and qualitative analyses follow (Standard&Poor's, 2010). In the end, rating is a dynamic process where monitoring and modification of ratings are necessary.

Since IFIs became one of the important actors in the financial market, rating agencies started to prepare credit ratings for them. The rating agencies are mostly rating Islamic banks and sukuk (Islamic bond) product. Moody's categorises the liability items of an Islamic bank into three basic groups; current accounts and murabahah deposits are categorised as deposit-like liabilities and rated by deposit ratings, murabahah borrowings and issued sukuk are categorised as debt-like liabilities and rated by debt ratings, profit sharing investment accounts (PSIAs) are categorised as specific liabilities and rated by issuer credit ratings (Hassoune, 2009). They announce that their specific perspective about PLS-based deposits depends on hard default concept since "... a negative return on PSIAs, absent negligence or misconduct, would not be deemed a default..." (Hassoune, 2009). However, they underline the fact that it is difficult to identify the cases of default for PSIA and this is why there is no specific rating for PSIAs, instead, depositors should refer to Islamic banks' issuer credit ratings assigned by Moody's as the best proxy (Hassoune and Howaladar, 2008).

S&P's categorises the liability side elements as the following; current accounts, short-term interbank and custom murabahas and long-term syndicated murabahas are categorised as deposit-like liabilities meanwhile sukuk notes and PSIAs are categorised as specific liabilities (Coughlin, 2007). It is indicated by S&P's that "A negative return served to PSIA holders following a loss incurred by the Islamic bank would not be deemed equivalent to default... However, if the Islamic bank fails to honour the terms of the PSIA contract, default would be immediately recognised." (Coughlin, 2007). Hence, default on PLS-based deposits is characterised by the breach of contractual obligation. In that

regard, the specific rating used for PSIA is stability rating. This rating has two components; a rating which is based on prospective relative stability of cash flow distributable to PSIA holders according to its sustainability and variability and an outlook about the trend for the rating over a one to three year horizon. Stability ratings range from SR-1 to SR-7 where the former one expresses the highest level of expected stability. A stability rating includes three aspects of the issuer; structure and governance, business risk profile and financial risk profile. The business risk profile analysis includes the examination of industry characteristics, competitive position, diversification and strategy, meanwhile, the financial profile analysis evaluates accounting and financial policy, cash flow and distributable cash flow, asset quality, profitability, liquidity, financial flexibility and funding mix.

In 2005, a special rating institution called International Islamic Rating Agency (IIRA) started to perform. IIRA rates Islamic banks due to economic, financial and investment quality, shariah compliance and corporate governance. The default is defined by the agency "... as an issuer's failure to meet its obligation on time." (IIRA, 2012). The rating methodology of IIRA for Islamic banks include the following fundamentals; market assessment, asset quality, liquidity and funds management, asset/liability management, evaluating capital adequacy, strategic planning, budgeting and management information systems, earnings performance, evaluating ownership and management (IIRA, 2012). However, IIRA does not give specific information about how they rate PLS-based activities.

Among all the aforementioned credit ratings for Islamic banks, S&P's stability rating can be accepted satisfactory for the measurement of credit risk of Islamic banks in terms of PLS-based investment accounts. Hence, we do not see any necessity of suggesting a new credit rating approach for PLS-based instruments in Islamic banks.

On the other hand, "Credit scores are built to predict a borrower's future repayment performance using only credit bureau information, such as the borrower's past repayment performance, credit exposure or utilisation, and appetite for additional exposure." (Makuch, 2001). The scientific background of credit scoring was established by the work of Fisher (1936) where discriminant functions are used for taxonomic problem. Credit scoring is visualised by credit scorecards in which the following information of the prospective capital user is required; education, employment, job experience, salary, other income sources, properties and possessions, other debts, history of payments etc. In general, there are three basic elements of credit scoring; characteristics/variables with their corresponding attributes, points associated to attributes and a cut-off value (Marquez, 2008). In terms of credit scoring for Islamic banks, it is known that some companies and bureaus provide information. For instance; CEDAR which is a global management con-

sulting firm provides credit scoring for Islamic banks. As a recent event, Bank Muamalat Malaysia Berhad made an agreement to use SAS credit scoring for banking. Moreover, Islamic banks make their own calculations for credit scoring but the details of such evaluations are generally unpublished.

When it comes to the credit riskiness of customers applying for mudarabah and musharakah partnerships, credit scorings need to be modified since they heavily focus on credit card and home financing applications rather than PLS instruments. In that regard, we will draw a general framework for an alternative credit scoring mechanism for prospective customers of mudarabah and musharakah financing.

4.2.2.2.1 Credit Scoring for PLS Instruments : Our suggestion of credit scoring framework for Islamic banks to evaluate the prospective users of mudarabah and musharakah instruments is based on 3 steps:

1. Data collection and sampling: The very first thing to do is to collect data from Islamic banks about how many PLS applications have been accepted within a specific period of time. Then, the entire data should be sampled. For the sake of easiness, two-group sampling is the most preferred one. These two samples can be named as ‘bad PLS’ and ‘good PLS’. Now, what is meant by ‘bad PLS’ should be defined. Since classic ‘default’ definition or ‘late instalment payments’ does not explain the existence of credit risk in PLS contracts, we suggest the following criteria:

$$Y_i = \begin{cases} 0, & D_{nm} = 0 \\ 1, & D_{nm} > 0 \end{cases} \quad (4.31)$$

where, Y_i s dependent variable and D_{nm} means decrement in amount of capital or profit by negligence and misconduct. If D_{nm} is equal to zero, it means that there is no decrease, hence, the dependent variable takes zero and the mudarib is called as the signer of a ‘good PLS’ contract. On the other hand, if D_{nm} is higher than 0, it means there is decrease in amount of capital or profit by negligence and misconduct and the dependent variable takes 1. Such a situation makes the mudarib as the signer of a ‘bad PLS’ contract. After deciding the sampling criteria and dependent variable, the next step is to decide explanatory/independent variables.

2. Choosing explanatory variables and deciding on a model: Explanatory variables are the ones which can make difference between ‘good PLS’ and ‘bad PLS’ contracts. Hence, it is very important to choose relevant explanatory variables. There are different ways to make this choice. One of them is to get an expert opinion. This can also be extended in a

way that a survey is done among risk management practitioners about the factors causing credit risk for PLS contracts. As a second way, forward and backward selection based on R^2 can be applied. Thirdly, Receiver Operating Characteristic (ROC) curve which shows the difference between distributions of ‘good PLS’ and ‘bad PLS’ contracts can be used. There is no limit for the amount and type of explanatory variables. Here, our suggestions as explanatory variables which can differentiate ‘good PLS’ contracts from ‘bad PLS’ ones are listed on table 4.10:

Characteristic of the agent	Age Education Job experience Previous PLS experience Managerial efficiency Accounting standards Information disclosure and transparency
Characteristic of PLS contract	Amount of capital Time Aim for the capital use Type of PLS (mudarabah, musharakah) Profitability of the project Agency costs Shariah compliance Social effect of the project

Table 4.10: Explanatory variables for credit scoring of prospective customers of PLS financing. *Source:* Graphed by the author.

According the table, first, the customer can be an individual person, a firm or an organisation. Second, all these variables are candidate for measuring the credit riskiness of a prospective customer when he/she/it applies to an Islamic bank in order to sign a PLS contract. Third, some of these variables are chosen due to their already proven effect on credit riskiness of customers in conventional banking system and they are also expected to be meaningful in Islamic banking system e.g. age, education, job experience (See: Chapman, 1940; Karan and Arslan, 2008). On the other hand, some of the commonly used credit scoring variables for conventional banking customers are not taken place here since they are not compatible with the structural properties of PLS contracts e.g. monthly instalment is not used as a variable since PLS does not include any monthly instalment, collateral and guarantees are also not included since their use for PLS instruments is questionable from shariah point of view (See: El-Gari, 2003). Fourth, many of these variables are chosen due to the idiosyncratic aspects of mudarabah and musharakah e.g. information disclosure and

transparency (it was shown on figure 4.1 and 4.2 that the lack of information disclosure and transparency is one of the credit risk factors), shariah compliance, accounting standards (this is important to prevent the acts such as under reporting), aim for the capital use, agency costs (since PLS is an agency contract, an extra cost appears), social effect of the project (the ultimate aim of economic activities in Islam is to contribute to the society).

After deciding the independent variables, the appropriate model should be chosen. There are different credit scoring models such as logistic regression, Markov Chain models, expert systems and neural networks. The decision should depend on what the model is used for.

3. Model estimation and validation: Coefficients for each independent variable should be found. These coefficients show the effect of each explanatory variable on the dependent variable. By this way, the bank can see which variables are important and which are not. Then, they can use the important ones to evaluate the prospective customers. As a last step, the validity of the model can be searched through three attributes; stability, readability and discriminatory power (Gestel et al., 2005). The first one yields coefficients with high confidence. The second one implies consistency between expected and actual signs of the coefficients and the third one measures the power of the model by the help of some tools such as sensitivity, specificity, Kolmogorov-Smirnov and ROC.

In sum, our general framework to measure the credit riskiness of the prospective customers applying for PLS agreements has the following mechanism; Islamic banks shall collect historical data from their mudarabah and musharakah agreements to group them by using the criteria suggested above, then they need to search for the factors (such as the ones suggested on 4.10) causing differences between the groups and as a last step they need to select a model to find the effects of each of the factors on the groupings.

4.2.2.3 Credit Risk Mitigation Pertaining to PLS Instruments

Up to this point, we have defined the credit risk pertaining to PLS instruments, identified some of the factors which may cause credit risk for these instruments and suggested a general framework for credit risk measurement of prospective customers of mudarabah and musharakah. The next step is to develop tools or methods to mitigate the credit risk pertaining to mudarabah and musharakah.

It was explained above that the commonly used modern credit risk mitigation tools are pricing, tightening, credit guarantee and insurance, collateral, covenant, netting, diversification, capital adequacy and derivatives. On the other hand, Islamic banks also use diversification, exposure limits, collateral, covenant, guarantees, insurance and risk based

capital requirements, especially for debt-based instruments. The use of diversification, covenant, and exposure limits is not problem in terms of PLS instruments. On the other hand, pricing and capital ratio measures need some modifications to be used as credit risk mitigation tools for PLS instruments e.g. risk based profit sharing ratios instead of interest rates. However, the use of collateral, guarantee and insurance is controversial in terms of PLS instruments. Lastly, the use of derivatives is even more controversial which requires special attention here.

In one of the earliest works, Khan (1988) discusses the validity of derivatives in three types of markets; commodity exchange markets, foreign exchange markets and stock exchange market. He argues that the forward contract in commodity markets is not objectionable since it is like salam, istisna, muajjal (deferred payment sale) and istijrar (supply sale), whereas future contract in commodity market is not acceptable since the physical delivery is not taking place and small investors hardly win due to speculation. He continues that none of the derivative contracts are acceptable in foreign exchange market since the exchange of money with money should be in spot market.

In his specific work dealing with options, Obaidullah (1998) lists the following options which are known in fiqh literature; khiyar al-shart (option of condition), khiyar al-ayb (option in case of defect), khiyar al-tayeen (option of choice), khiyar al-ruyat (option of inspection) and khiyar al-majlis (option during the meeting). He also lists the controversial issues about the use of options in fiqh literature; rights as object of sale, the framework of khiyar al-shart, similarity with riba, gharar and speculation. In the end, he develops some models based on istijrar which he thinks that it combines average rate option, down-and-in put option and up-and-in call option. In another work of him, Obaidullah (2005) suggests a model for currency forward from shariah nominated contracts and he also suggests a model for Islamic swaps based on al-muragaha al-Islamiyah. In a third work of him, Obaidullah (1999) aims to identify an Islamic system for currency exchange. He classifies the mainstream fiqh schools' idea about the hadith¹⁰ involving the transaction of 6 materials hand in hand; according to Hanafis the reasoning for the existence of riba in this hadith is possessing weight or measurability which is not valid for paper currency exchange, for Shafi'is it is being the medium of exchange and it can be extended to other things, for Malikis it is also being the medium of exchange but it can be generalised to the paper currencies. The author argues that even if the prohibition can be extended for paper

¹⁰Ubid al Simit reported Allah's Messenger as saying: Gold is to be paid for by gold, silver by silver, wheat by wheat, barley by barley, dates by dates, and salt by salt, like for like and equal for equal, payment being made hand to hand. If these classes differ, then sell as you wish if payment is made hand to hand (Al-Hajjaj, 1976).

currencies, the exchange of two different countries' paper money can be an exception.

In his comprehensive work, Bacha (1999) first describes what forward, futures and options are in conventional terms. Then he summarises some of the views of Muslim scholars about these derivatives. After that, he mentions derivative-like instruments in Islamic finance which are (parallel) salam and istijrar. Lastly, he concludes that "... the case of derivatives on equity instruments, currencies and halal input commodities deserves attention. Though it might seem safer for Islamic scholars to be on the side of conservatism such a position can have costly consequences for Islamic businesses in the long run."

As one of the well-known shariah experts, Usmani (1999) says that futures are not acceptable since it is a sale for future date and delivery is not intended, meanwhile he accepts the binding nature of option promises but according to him it is not a subject of sale. Lastly, he argues that swaps are binding two different transactions together which makes them unacceptable.

Al-Suwailem (2006) starts with some critics of conventional derivatives that they separate risk from underlying assets and they are responsible for high volatility in financial markets. Then he indicates the importance of Islamic financial engineering to create Islamic hedging tools. After mentioning misreporting, loss and liquidity risk as the risks involved in mudarabah, he suggests the followings; credit-based mudarabah, due-diligence, third party hedging and combination of deferred sale with partnership.

As the owner of the commonly recited references, Kamali (1996) lists five points where there are debates about futures; both counter values are non-existent at the time of the contract, it consists of short selling, there is no qabd (possession), it is actually one debt for another debt, speculation and gambling. The first debate issue depends on the following hadith: "Do not sell what is not with you." (Imam Malik Ibn Anas, 2005). Kamali says that authenticity of this hadith is questionable and even if it is authentic, there are three different interpretations about it in which he agrees with the one supporting the idea that the reasoning of the hadith is to prevent the delivery risk. But today such a risk is quite low. Kamali also argues that the standardisation in today's world can eliminate the discussions about qabd. In another work of Kamali (1997), he uses the Islamic commercial law term al-ikhtiyarat corresponding to option. There are two issues about khiyarat; if it is lawful to charge a fee and if it can be sold. The author accepts the validity of khiyarat due to the principle of basic freedom of contract and parties' liberty to make stipulations as they please.

Based on the acceptance of futures by Kamali, Ebrahim and Rahman (2005) use mathematical models to prove the pareto-optimality of Islamic futures over Islamic forwards.

On the other hand, after indicating that Islamic futures market can only be possible for commodities, Khan (1997) suggests three types of Islamic futures markets; salam based for commodities, istisna-based for infrastructure and joala-based for services.

In a specific work, Dusuki (2009) attempts to create a structure for an Islamic foreign exchange swap since the conventional foreign exchange swap is not compatible with the bay al-sarf rule (exchange of money for money). For Islamic foreign exchange swaps, the two alternative structures are; tawarruq (tripartite sale) and wa'd.

As a detailed jurisprudential point of view, Zahraa and Mahmor (2002) mention the alternative interpretation of the rule that the goods must be in existence at the time of the contract which was based on a single hadith and weak ijma argument. They also mention the separation suggestion of Sanhuri among the objects; object that is permanently non-existent, object that is non-existent at the time of the contract but shall necessarily occur in the future and object that is non-existent at the time of the contract but shall possibly exist in the future. The second and the third objects can be acceptable meanwhile the first one can not. Hence, they conclude that the reasoning of the rule is the existence of gharar rather than the existence of the subject matter.

Last but not the least, one of the most detailed works about the derivatives in Islamic finance belongs to Al-Amine (2008). In his book, first he summarises the institutional and individual studies about forward, futures and options in Islam. Then, he discusses each of these contracts by himself. He argues that forward contract is valid since it assures the following conditions; it does not contradict a genuine na's (general opinion), it does not go against the general principles of muamalat (financial transaction) and it does not involve a clear harm. He compares three different Islamic contracts with forward and decides that bay al-sifah is closer to forward than salam and istisna are. As regards to futures, he elaborates the discussion issues of speculation, sale prior of taking possession and al-dayn bi al-dayn (debt sold on credit). About the last item he concludes that the main problem here is gharar. He makes some suggestions to solve this gharar problem e.g. brokers, fidelity fund, hisbah. The other mentioned solutions are; ban of the use of margin trading against speculation, legal possession and parallel salam against the sale prior of taking possession. About options, he finalises that there is no possibility of currency option in Islamic finance but only of commodities and shares. He mentions the followings as Islamic alternatives to options; khiyar al-shart, khiyar al-naqd and arbun (downpayment with revocation option). He argues that khiyar al-shart can be used against the default risk in murabahah and arbun can be a good alternative to call option.

Since this section is dealing with credit risk pertaining to PLS instruments, we should

mention a work which is directly about the use of credit derivatives for PLS instruments. As far as we are concerned, the only work in that regard belongs to Mousavi and Mahdavi (2008). In their work, first, they indicate that “Credit risk in Islamic banking appears in the settlement risk framework.” For instance; when PLS financing is used, the credit risk would be the non-payment of bank’s share by the mudarib when it is due. Then, they continue by sharing detailed information about what credit default swap is. Lastly, they list the Islamic justifications of credit default swap to be used by Islamic banks. In the end, they conclude that credit default swaps can be applicable in Islamic banking. But the work does not go into detail how they can be used.

So far we have mentioned 15 works in which the issue of derivatives in Islamic finance is discussed. As a summary, Kamali is the most accommodating scholar since he argues that futures and options can be used by IFIs and commonly referred alternative tools e.g. salam, istisna etc. are not hedging tools at all. Different scholars use his ideas to legitimise the permissibility of derivatives (See: Smolarski et al., 2006). On the other hand, Usmani is the most restrictive one since he argues that futures are not permissible, options are binding but they are not the subject of sale and swaps are not valid. He does not mention any alternative hedging tools. Then there are some ideas taking place between these two extremes. On the edge closer to Kamali, Akram Khan accepts the forward contracts but only in commodity exchange market. He is not the only one accepting some types of derivative applications by IFIs e.g. Malaysian Securities Commission Shariah Advisory Council allowed the use of futures on crude palm oil, stock-index futures and single stock futures in 1997. There are a wide group of scholars accepting the necessity of derivatives but rejecting their direct use which helps them to search for Islamic derivative alternatives e.g. Obaidullah and his Islamic swap model via al-muragaha al-Islamiyah, Fahim Khan and his suggestions about salam, istisna and joalah based Islamic derivatives, Dusuki and his Islamic foreign exchange swap models via tawarruq and wa’ad. The reasons of the non-acceptance of part or all of the conventional derivatives can be listed as the following; the deferment of both counter-values, both counter values are non-existent at the time of the contract, sale before taking possession, charging fee for rights, speculation, gambling and zero-sum nature, riba for currency exchanges and including two contracts in one. In sum, there is no widely used alternative Islamic derivative and the aforementioned reasons are creating abstention even for some of the Islamic alternatives such as arbun, khiyar al-shart and tawarruq.

Besides the already used measures of diversification, exposure limits, risk based sharing ratio and reserve requirements, we suggest the following credit risk mitigation tools

in terms of PLS instruments in Islamic banks. It should be mentioned that because of the controversies around the issue of derivatives, we refrain us from suggesting anything within that structure.

4.2.2.3.1 Contractual arrangements : It was indicated before that when a customer applies for mudarabah or musharakah financing, Islamic bank asks detailed information about what kind of project the capital will be used for. However, when the Islamic bank itself becomes mudarib and asks for investment depositors' capital, the depositors are not informed how their capital will be used. Hence, there should be a specific part on each mudarabah and musharakah contract showing what the capital is planned to be used for.

Another important item which should be taken part inside PLS contracts is the promise of sharing periodic information with the other partners. The content and frequency of such information sharing can be negotiated among the actors by taking into account the possibilities and necessities.

4.2.2.3.2 Accountancy arrangements : It was shown on figure 4.1 that customer as a mudarib can manipulate the accountancy practices especially by undervaluing the profit to share less with the bank. What is necessary to do here is to be aware of all the possible causes of undervaluation of profit in a PLS agreement. Some of the means to undervalue the profit are; to inflate the costs, to un-record a part of the revenue, to undervalue the ending inventory, to understate pre-paid expenses and to overstate payables.

4.2.2.3.3 Information disclosure and transparency : Islamic banks as mudaribs are having a common practice of not informing their investment depositors about how their capital has been used. Such a practice may cause errantry in terms of the practices, misconduct and loss of trust among the depositors. Henceforth, we argue that Islamic banks should inform their investment depositors about the ongoing businesses at agreed upon periods.

The second item which is important to be transparent about is PER and IRR practices. The inclusion or exclusion PER and/or IRR directly affects the profit share of the investment deposit holders. This at the end can cause accountancy manipulation since if the bank wants to hold some revenue by pushing it into next reporting period, it might purposely understate the profit for the current period. Moreover, being transparent about PER and IRR applications is expected to increase the decision power of the deposit holders.

4.3 Rate of Return Risk and Withdrawal Risk

It was explained in chapter 3 that income smoothing and the current way of determination of rate of return are two doubtful risk mitigation tools from shariah point of view. These risk mitigation tools are used to tackle with rate of return risk and withdrawal risk. In this section, we will discuss the risk management process for these extra risks pertaining to PLS instruments. As in the case of credit risk, the management process will be followed through the steps of definition and identification of factors, measurement and mitigation.

First of all, the existence of the rate of return risk for PLS instruments can be followed from survey-based researches. According to Ariffin et al. (2009), rate of return risk is identified by the practitioners as the third most important risk for mudarabah financing and the most important risk for musharakah financing. On the other hand, the existence of the withdrawal risk and its connection with the rate of return risk can be followed from the following survey-based studies. According to the survey conducted in 2002 with total of 468 depositors of Islamic banks in Bahrain, Bangladesh and Sudan, Chapra and Ahmed (2002) find that around 30% of the depositors in Bahrain, 50% in Bangladesh and 86% in Sudan would withdraw their funds from their Islamic banks if there are rumours about the poor performance of the banks. The percentages about withdrawals become 12% in Bahrain, 41% in Bangladesh and 37% in Sudan if depositors get lower rate of return than other banks. In another survey taking into account the perception of practitioners from 18 IFIs from 11 countries, Khan and Ahmed (2001) find that the most serious issues are that the rate of return on deposits has to be similar to that offered by other banks and a low rate of return on deposits will lead to withdrawal of funds.

4.3.1 Definition of Rate of Return Risk and Withdrawal Risk Pertaining to PLS Instruments

The guideline of IFSB (2005) describes rate of return risk as associated with overall balance sheet exposures where mismatches arise between assets and liabilities. Islamic banks have uncertainty in terms of their asset side return, since they do not charge fixed return from financings like mudarabah and musharakah, which can diverge from the expectations of investment depositors who wish to have returns similar to benchmark rates. If we re-define it according to PLS instruments:

Definition: Rate of return risk arises due to the variability of return rates of PLS financing modes on the asset side and benchmark rate expectations of PSIA account holders despite the variability of return rates on the liability side of an Islamic bank.

This definition also helps us to see the difference between the rate of return risk and interest rate risk which is causing asset-liability mismatches. Thus, according to Greuning and Iqbal (2008), what differs rate of return risk from interest rate is that the former one has more uncertainty in itself and there is no fixed return involved in it. On the other hand, the second part of our definition helps us to understand the withdrawal risk since “An Islamic bank could be exposed to the risk that depositors will withdraw their funds if they are receiving a lower rate of return than they would receive from another bank.” (Greuning and Iqbal, 2008).

The second step here is to identify the factors causing the rate of return risk and withdrawal risk. To identify these factors will help for the measurement and mitigation steps. According to our rate of return risk definition, first, we should define what causes variability for the return rates of PLS financing modes. We can list the causes within three groups; macroeconomic conditions, investment specific factors and managerial efficiency of mudaribs and partners. Second, in terms of the benchmark rate expectations of the depositors, there are works investigating the correlation and causation between benchmark interest rates and Islamic bank return rates. For the necessary literature, one can see section 3.4. Such an expectation can be explained by profit motive and Islamic banks’ acceptance of it is simply because of competition and withdrawal risk. As indicated by Kader and Leong (2009) according to their analysis of banks in Malaysia from 1999 to 2007, “... because customers are profit motivated, Islamic bank financing in the dual system is exposed to interest rate risks despite operating on interest free principles.” Lastly, any time mismatch between financing modes and deposits can also cause return risk, especially when the financing modes are signed for longer periods than investment deposits i.e. financing long-term projects with short-term funds.

In terms of the factors causing withdrawal risk, it is difficult to find any work directly dealing with the withdrawal behaviour of investment depositors. One of them belongs to Ismal (2011) where he first models the Islamic banking liability and then makes econometric analysis to find out the factors affecting withdrawal behaviour. Based on the data covering Indonesian Islamic banks for the period of 2000-2009, he concludes that probability of deposit withdrawals is positively affected by rate of bank Indonesia certificate and negatively affected by total income from operational financing and total Islamic deposits. In another work which is dealing with the issue of withdrawal risk but not particularly with

its factors, Ahmed (2005) draws a withdrawal function due to expected rate of return and deposit return and he argues that as long as Islamic bank deposit returns are equal to the expected ones the amount of withdrawals are less than cash reserves and liability is less than equity. This efficient situation can be disturbed by two things; idiosyncratic declines in returns and macroeconomic shocks. The first cause increases the withdrawals whereas the second one shifts the withdrawal curve downwards.

On the other hand, the existing literature is mostly about the depositing behaviour i.e. there reverse act of withdrawing of the depositors. Here are some examples from the works trying to identify the factors of depositing in an Islamic bank. Haron and Ahmad (2000) find that there is a negative relationship between the interest rate of conventional banks and the amount deposited in Islamic banks based on the study of Malaysia for the period of 1984-1998. Haron and Azmi (2008) use banking data of Malaysia for the period of January 1998-December 2003 and conclude due to multivariate analysis that Islamic investment accounts are positively affected by interest rate on fixed deposit accounts, consumer price index (CPI), money supply, gross domestic product (GDP), Kuala Lumpur composite index and negatively affected by rate of profit and base lending rate in the long run. Kasri and Kassim (2009) use banking data of Indonesia for the period of March 2000-August 2007 and conclude that real level of mudarabah deposits are positively affected by real rate of return and negatively affected by real interest rate in the long run. In another work, Rachmawati and Syamsulhakim (2004) conclude that mudarabah deposits in Indonesia are positively affected by profit rate and Islamic bank branches. Abduh et al. (2011) test their hypotheses by taking into account the Asian financial crisis and conclude that in the long run natural log of total deposits of Islamic banks in Malaysia are positively affected by average rate of return on these deposits and negatively affected by interest rate, CPI, growth of industrial production index, based lending rate and crisis. Haron and Ahmad (2000) use adaptive expectation model for the period of 1984-1998 and conclude that Islamic bank deposits are positively affected by rate of return and negatively affected by interest rate. It can be concluded due to these works that depositors' depositing behaviour in Islamic banks depends on rate of return, conventional rate of return i.e. interest rate, macroeconomic conditions such as inflation, crisis and growth, the specific conditions of Islamic banks such as number of branches, size and amount of deposits. The first two reasons have been the subject of specific research and hence they deserve a special attention here.

The importance of the rate of return for depositor behaviour is searched by consumer oriented empirical studies e.g. Erol and El-Bdour (1989) make a survey including 434

respondents from Jordan and conclude that religious motivation does not appear to be the primary criterion but economic motivation does since there is a tendency for depositors to withdraw their funds from Islamic banks in case they announce that they will not distribute profits. On the other hand, Khan et al. (2007) find an opposite result based on their 100 respondents from Bangladesh that the most important bank selection criteria is that Islamic bank follows Islamic principles and the least important one is the rate of return. It can be seen from these two examples that the importance of rate of return on depositor behaviour is relative and there is widely accepted trade-off between rate of return and religious motives. Even though the importance of it is relative according to countries, Islamic banks and customers, there is almost no controversy about the direction of its effect i.e. the rate of return has positive relationship with investment deposits. On the other hand, even though Islamic banks do not involve in interest, conventional rates do indirectly affect the depositor behaviour in Islamic banks. There are empirical works proving the existence of such an effect. The aforementioned work of Haron and Ahmad (2000) is a good example in that regard. In another work, Ergec and Arslan (2011) first list three ways of interest rate to affect Islamic banks; through deposits, negative fund gap and arbitrage opportunities. Then they make vector autoregression analysis for the period of December 2005-July 2010 and find that Islamic banks in Turkey are visibly affected by the changes in interest rates where their deposits are more affected than their loans.

4.3.2 Measurement of Rate of Return Risk and Withdrawal Risk Pertaining to PLS Instruments

Even though rate of return risk and interest rate risk are not exactly the same things, when it comes to their measurement, similar tools have been used. Hence, we start by giving information about how interest rate risk is measured within conventional banks.

The commonly referred interest risk measurement tools in modern economic literature are; full valuation approach/scenario analysis, maturity gap analysis, duration/convexity approach and duration gap analysis. The first approach "... involves revaluing a bond position (every position in the case of a portfolio) for a scenario of interest rate changes." (Fabozzi, 2007). The second tool which is also called as gap analysis "... is essentially a book value accounting cash flow analysis of the repricing gap between the interest revenue earned on an FI's (financial institution's) assets and the interest paid on its liabilities over some particular period." (Sanders and Thomas, 2000). The calculation of it is done

according to equation 4.32:

$$\Delta NII_i = (GAP_i)\Delta R_i = (RSA_i - RSL_i)\Delta R_i \quad (4.32)$$

where NII_i is the change in net interest income in the i th bucket, GAP_i is the dollar size of gap between the book value of assets and liabilities in maturity bucket i , R_i is the change in the level of interest rates affecting assets and liabilities in the i th bucket, RSA_i is the rate sensitive assets and RSL_i is the rate sensitive liabilities. On the other hand, “Duration is a measure of the interest sensitivity or elasticity of an asset or liability.” (Sanders and Thomas, 2000). The higher this number, the more sensitive the asset or liability to changes in interest rate. The duration is calculated as the following:

$$D = \frac{\sum_{t=1}^N tCF_t \cdot DF_t}{\sum_{t=1}^N CF_t \cdot DF_t} = \frac{\sum_{t=1}^N tPV_t}{\sum_{t=1}^N PV_t} \quad (4.33)$$

where CF_t is the cash flow received on the security at the end of period t , DF_t is the discount factor and PV_t is the present value of the cash flow at the end of period t . Hence, “... duration is a weighted average of times, where the weighting factors are the present values of cash flows at each time t .” (Sanders and Thomas, 2000). The last method, which is the most commonly used one, is the combination of maturity gap and duration analysis. This is also the method which is suggested by BIS. Inside the consultative proposal of the Basel Committee (1993), it is written that banks would follow duration gap analysis where first interest rate sensitive assets, liabilities and off-balance-sheet instruments are categorised into 13 maturity time bands, second, duration-based weights are applied to these bands and last the difference between duration-weighted assets and liabilities is computed. However, duration gap analysis is not immune from problems. Sanders and Thomas (2000) list some of the problems as the following; first of all, it is especially working well when there is small changes in interest rate risk. Second, the duration matching can be costly. Third, the assumption of no delay and no default. Fourth, the dynamic problem of immunisation. This is why there are more sophisticated, computer-based analyses such as scenario analysis, simulation and stress testing.

In terms of the measurement of the rate of return risk in Islamic banks, the guideline report of IFSB (2005) asserts that the rate of return risk shall be measured by gapping method which is supported by an efficient cash flow forecasting. However, in contrast to the proposal of BIS, the details of such a measurement process are not shared. To show the applications of Islamic banks in that regard, Khan and Ahmed (2001) find that out of 17 Islamic banks, 29% use gap analysis and 47% use duration analysis. Sundararajan

(2011) shows that the impact of changes in rate of return on present value of earnings can be calculated by the following duration gap formula:

$$(D_A - D_L)\Delta i_r \quad (4.34)$$

where D_A is the duration of assets and D_L is the duration of liabilities and the last item is the change in rate of return. In another study, Chatta and Bacha (2010) use data from 30 Islamic commercial banks and 30 conventional commercial banks to compare their duration gaps. By using the above duration gap calculations, they find that Islamic commercial banks are twice more sensitive to rate risk than conventional commercial banks. The basic reason for that is the larger average duration of assets for Islamic commercial banks. It means that assets of Islamic banks are more sensitive to rate of return changes than liabilities.

Our rate of return risk definition is based on PLS financing modes on the asset side and PSIA investment account on the liability side of Islamic banks. Due to this definition, the measurement for the rate of return risk pertaining to PLS instruments shall be done by below duration gap analysis:

$$DGAP = (DA_{PLS} - DL_{PSIA})\Delta r \quad (4.35)$$

where DA_{PLS} is the duration of PLS based financing modes on the asset side and DL_{PSIA} is the duration of PSIA investment accounts on the liability side. To calculate 4.35, the following steps should be taken:

1. The maturity of mudarabah and musharakah financing modes and PLS-based investment account should be found.
2. Each maturity groups should be applied with duration weights which can be decided by the bank itself.
3. Duration weighted asset and liability items should be compared.

Such a calculation will help Islamic banks to concentrate only on the most rate sensitive items within their balance sheets. However, the aforementioned problems of duration gap analysis should be considered while using this calculation.

On the other hand, to measure withdrawals from PSIA is not difficult for an Islamic bank. They just need to measure the amount withdrawn from deposits within a specific period of time. What is important to measure here is according to what reasons these

withdrawals occur. Below, we will make an econometric analysis where dependent variable is withdrawals from investment deposit. First of all, our econometric model is as the following¹¹:

$$W_t = ID_t - ID_{t-1} = \beta_0 + \beta_1 CPI_t + \beta_2 RR_t + \beta_3 IR_t + \beta_4 M_{1t} + \varepsilon \quad (4.36)$$

where,

W: withdrawal which is calculated by the difference of investment deposits at month t and t-1.

ID: investment deposits

CPI: monthly inflation rate

RR: monthly PSIA rate of return

IR: monthly deposit interest rate

M₁: base money

According to already existing literature and critical thinking, we wanted to add even more independent variables which could affect the withdrawals. These are; GDP growth as a macroeconomic variable, customer satisfaction and service quality which includes number of bank branches, shariah compliance etc. However, it is difficult to include them since the first one has no available monthly data and the second one has no specific measurement. But this does not mean that they are not relevant for the model. We will take into account these variables when the mitigation techniques are mentioned. We will use our model to make analysis for Indonesia¹². The period for the analysis is December 2005-November 2011. The necessary data for Islamic banks is gathered from Indonesian central bank. Currently, Indonesia has 5 Islamic commercial banks and 22 Islamic windows¹³. During the analysis, we use the following procedures; augmented Dickey-Fuller (DF) test, correlation, Granger causality test and multiple linear regression.

DF is used to analyse the unit root. Having a unit root means that there is non-stationary data which is problematic in terms of the accuracy of forecasting. There are

¹¹This model is inspired from the model of Ismal (2011) since we also use monthly changes in investment deposits as proxy for withdrawals. However, he turns these differences to binary variables whereas we kept them as they are. Moreover, none of our independent variables is the same.

¹²The country choice is done due to data availability

¹³Details about our data and data gathering process can be obtained upon request.

three regression equations specified by DF test (Bhar and Hamori, 2005):

$$\Delta y_t = \beta y_{t-1} + u_t \quad (4.37)$$

$$\Delta y_t = \mu + \beta y_{t-1} + u_t \quad (4.38)$$

$$\Delta y_t = \mu + \delta t + \beta y_{t-1} + u_t \quad (4.39)$$

The first one equation has neither a constant nor a trend term meanwhile the second one has a constant and the third one has both a constant and a time trend. By each of these equations, it is tested if β is equal to 0 or not. If it is equal to 0, it means that y_t has a unit root and it is non-stationary i.e. there is a trend. On the other hand, the augmented version of DF test is carried out by the following equations (Bhar and Hamori, 2005):

$$\Delta y_t = \beta y_{t-1} + \sum_{i=1}^p \gamma \Delta y_{t-i} + u_t \quad (4.40)$$

$$\Delta y_t = \mu + \beta y_{t-1} + \sum_{i=1}^p \gamma \Delta y_{t-i} + u_t \quad (4.41)$$

$$\Delta y_t = \mu + \delta t + \beta y_{t-1} + \sum_{i=1}^p \gamma \Delta y_{t-i} + u_t \quad (4.42)$$

The peculiarity of these augmented DF equations is that they accommodate serial correlation in error term u_t . For our analysis, we use the augmented DF test whose test process is as the following; at lag 1 to run the test with the widest equation which has both a constant and trend term, if the existence of the unit root can not be rejected then to run the test for the equation which has only a constant term, and if this also does not end with the rejection of the hypothesis then to run the test for the equation which has neither constant term nor trend. In the end, if none of these can reject the null hypothesis then the process should be repeated for the lags of 2, 3, 4. The augmented DF test results for the model of Indonesia can be seen from table 4.11. According to the results obtained

Var.	N	Test Stat.	1% Cr.Val.	5% Cr.Val.	10% Cr.Val.
<i>W</i>	57	-5.96	-4.14*	-3.49*	-3.18*
<i>CPI</i>	57	-5.23	-4.14*	-3.49*	-3.18*
<i>IR</i>	57	-4.78	-4.14*	-3.49*	-3.18*
<i>M₁</i>	57	-4.9	-4.14*	-3.49*	-3.18*

Table 4.11: Augmented Dickey-Fuller test for the model of Indonesia

from the augmented DF equation which has both a constant and trend term, since the test

statistic for each of the variable is more negative than the critical values at 1%, 5% and 10% significance levels, the null hypothesis for the existence of unit root is rejected at lag 1. This fact is shown by stars. It means that there is no unit root problem for any of the variables of the Indonesian model¹⁴.

Correlation is the measurement of the relationship between two variables or two sets of data. The most common way to calculate it is to use the following Pearson's correlation coefficient:

$$r = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}} \quad (4.43)$$

where $-1 < r < 1$. When r is -1 , there is perfect negative relationship and when r is 1 there is perfect positive relationship between the two variables or sets of data. The correlation results for the models of Indonesia can be seen from table 4.12. The correlation

	<i>W</i>	<i>CPI</i>	<i>RR</i>	<i>IR</i>	<i>M₁</i>
<i>W</i>	1.0000				
<i>CPI</i>	-0.1858	1.0000			
<i>RR</i>	-0.0291	0.0920	1.0000		
<i>IR</i>	-0.2191	0.5072	0.1663	1.0000	
<i>M₁</i>	0.5695	-0.3341	-0.0244	-0.3934	1.0000

Table 4.12: Pearson Correlation for the model of Indonesia

test is done with 54 observations. It can be seen that the variable which has the highest correlation with dependent variable W is M_1 . Another thing which can be seen from this table is the correlation between independent variables and the possible existence of multicollinearity where it becomes difficult to assess the individual effects of independent variables on dependent variable. In that regard, there is not a considerable problem.

Granger causality test is required since co-integration tests, such as augmented DF, examine whether there is a long-term equilibrium but it can not test if there is causality between the variables. In that regard, Granger-causality test will help us. If variable X is Granger cause of variable Y , it means that the lagged term(s) of X included can significantly improve the prediction of variable Y . Mathematically, variable X is simply Granger cause to variable Y if and only if the result of an optimal linear prediction function is the following (Kirchgässner and Wolters, 2008):

$$\sigma^2(y_{t+1}|I_t) < \sigma^2(y_{t+1}|I_t - \bar{x}_t) \quad (4.44)$$

¹⁴As a note here, we did not include the variable RR since it has partial time series.

where I is total information set. And X is instantaneously Granger cause to variable Y if and only if the result of an optimal linear prediction function is the following:

$$\sigma^2(y_{t+1}|I_t, x_{t-1}) < \sigma^2(y_{t+1}|I_t) \quad (4.45)$$

For the Granger causality test, what is tested is the null hypothesis arguing that X does not Granger-cause Y. As a result of the test, if F statistic is larger than the critical F-values at 1%, 5% or 10% significance levels, then the null hypothesis will be rejected. The results of the Granger-causality test can be seen from table 4.13. The critical F-values

Variable	N	F
<i>CPI</i>	63	0.72
<i>RR</i>	52	0.93
<i>IR</i>	63	0.45
<i>M₁</i>	63	1.88

Table 4.13: Granger causality test for the model of Indonesia

at 5% significance level are 3.15 and 3.18 and none of the F statistic values are larger than them, hence, we can not reject the null hypothesis i.e. none of the independent variables Granger cause *W*. However, the variable which has the closest value to Granger cause *W* is *M₁*.

Lastly, we perform linear regression analysis shown on 4.36. The regression properties and the results can be seen from table 4.14 and 4.15.

N	54
F(4,49)	5.89
Prob>F	0.0006
R-squared	0.3246
Adj. R-squared	0.2695
Root MSE	894.05

Table 4.14: Regression properties for the model of Indonesia

W	Coef.	Std. Err.	t	P> t
<i>CPI</i>	1.374739	54.09334	0.03	0.980
<i>RR</i>	-28.21182	201.4166	-0.14	0.889
<i>IR</i>	6.584186	128.3742	0.05	0.959
<i>M₁</i>	0.0073669	0.0016674	4.42	0.000
const.	-2772.808	1835.661	-1.51	0.137

Table 4.15: Regression results for the model of Indonesia

R^2 of the model is 32% and there is only one significant variable which is M_1 and its sign is positive. It means that when M_1 increases, the deposits change positively from month $t - 1$ to t . However, since the signs of the variables IR and RR are unexpected, we regress the same data one more time according to below model:

$$W_t = ID_t - ID_{t-1} = \beta_0 + \beta_1 CPI_{t-1} + \beta_2 RR_{t-1} + \beta_3 IR_{t-1} + \beta_4 M_{1t-1} + \varepsilon \quad (4.46)$$

This model is different than the previous one since the change in investment deposits at time t is run by the independent variables for period $t - 1$. For this model, we only run the regression test to see whether there is any improvement in the model. The regression results from this new model can be seen from below table 4.16 and 4.17.

N	53
F(4,48)	4.84
Prob>F	0.0023
R-squared	0.2872
Adj. R-squared	0.2279
Root MSE	906.74

Table 4.16: Regression properties for the revised model of Indonesia

W	Coef.	Std. Err.	t	P> t
<i>CPI</i>	-6.358647	54.88156	-0.12	0.908
<i>RR</i>	84.8672	206.2485	0.41	0.683
<i>IR</i>	-35.7013	130.404	-0.27	0.785
<i>M₁</i>	0.0067007	0.0017598	3.81	0.000
const.	-2789.716	1863.02	-1.50	0.141

Table 4.17: Regression results for the revised model of Indonesia

According to these results, the new regression has also an acceptable goodness of fit, 29%. Again, only M_1 is statistically significant and it has a positive sign. Even though *IR* and *RR* are not statistically significant, their expected signs are valid this time i.e. negative for *IR* and positive for *RR*. This is the only contribution of this new regression model. Hence, it can be concluded that this new model did not add so much to our analysis.

In sum, only M_1 is the affecting variable for Indonesian Islamic bank withdrawals. However, this does not mean that there are no other elements which affect the withdrawals but they were/could not included inside our models.

4.3.3 Mitigation of Rate of Return Risk and Withdrawal Risk Pertaining to PLS Instruments

The last step for the management of the rate of return risk and withdrawal risk in Islamic banks is the risk mitigation. First, we will start with the mitigation of the rate of return risk and then continue with the withdrawal risk.

In conventional banks, there are different interest rate risk mitigation tools. Firstly and simply, a part of interest rate is already cushioned by the existence of reserve requirements. Secondly and commonly, they use duration matching. This is done by changing the amount and maturity of asset and liability items. Another commonly used tool is derivatives such as interest rate swap. However, as it was discussed within the previous section, the use of derivatives is a highly controversial issue in Islamic jurisprudence.

The guideline report of IFSB (2005) suggests the following rate of return risk mitigation methods for Islamic banks; determining and varying future profit ratios according to expectations of market conditions, developing new shariah-compliant instruments, issuing securitisation tranches of shariah-permissible assets. As a response to these suggestions, Islamic banks make income smoothing via PER and IRR to decrease the rate sensitivity on the liability side meanwhile they prefer more fixed-return financing modes like muraba-

hah on the asset side. However, the shariah compatibility of these applications has already been discussed in chapter 3. Hence, it is necessary to make alternative suggestions. Our rate of return risk mitigation suggestions are listed below:

1. The originality of PSIA deposits is the uncertainty about return. Hence, the very first thing to do is to increase the apprehension of this property among depositors.
2. The rate sensitivity of PSIA deposits can be decreased by choosing investments with more stable returns and lesser risks.
3. The rate sensitivity of PLS financings can be decreased by choosing less risky projects or projects from more credible customers.
4. The effect of the rate of return risk can change according to bank specifics such as bank size. Hence, banks should be aware of how their institutional properties are affecting the rate of return risk.
5. Maturity gapping between PLS financing modes and PSIA investment deposits should be compromised i.e. if the average maturity of the former ones is higher, then either this should be decreased or the latter ones' should be increased. In any case, too long maturities for either of them should be avoided.

When it comes to the mitigation of withdrawal risk, we suggest the following items:

1. To decrease volatility in rate of return, aforementioned precautions should be taken.
2. The effect of interest rate on deposit withdrawals depends on the competition between conventional and Islamic banks. Islamic banks should emphasise their uniqueness.
3. Islamic banks should make detailed analysis (such as on model 4.36 and 4.46) about the reasons of withdrawals from PSIA deposits and concentrate on the most important ones.
4. Shariah compatibility and service quality together with customer satisfaction should be under scrutiny.
5. The buffer against sudden withdrawals should be calculated without taking into account the effect of PER and IRR.

4.4 Conclusion

After explaining the questionable PLS applications of Islamic banks in chapter 3, this chapter aimed at analysing the reasons of these applications i.e. extra risks. Through this aim, we analysed the following extra risks pertaining to PLS instruments; asymmetric information, credit risk, rate of return risk and withdrawal risk. For asymmetric information, it is shown mathematically that moral hazard is a more decisive problem for the asset side relations meanwhile adverse selection is for the liability side relations of an Islamic bank. Then, based on the possible moral hazard reasons in PLS, the solution of a two-period negative incentive approach is suggested. Lastly, a dividend signalling approach is suggested against the adverse selection problem. Unfortunately, this suggestion did not give satisfactory results at the end of the econometric analysis including data from 25 Islamic banks for the period of 2007-2010. Hence we suggested another signalling item, PER. But the empirical analysis could not be performed due to the lack of necessary data.

Credit risk is re-defined by taking into account the specificities of PLS instruments. According to this definition, credit risk factors have been identified. Since the PLS based credit rating of S&P is seen satisfactory, our credit risk measurement suggestion is concentrated on the PLS based credit scoring. Lastly, we have suggested risk mitigation measures under the headings of contractual arrangements, accountancy arrangements and information disclosure and transparency.

Since rate of return risk and withdrawal risk are closely connected to each other, we analysed them together in one section. We started by re-defining the rate of return risk and identifying the factors causing it. On the other hand, a detailed econometric analysis of the factors of withdrawal risk is performed. In terms of measurement, a PLS based duration gap analysis is suggested for the rate of return risk. Lastly, our rate of return risk and withdrawal risk mitigation suggestions are listed.

Chapter 5

Conclusion

Islamic banking was only a part of the bigger idea called Islamic economics.¹ The basic principles of Islamic banks set by the early Muslim scholars such as Qureshi (2003) are the lack of interest, existence of profit and loss sharing mechanism and social responsibility. These principles were then translated into the structural design of Islamic banks (See: Siddiqi, 1983). After such a process of principle setting and structural design that the early examples of Islamic banks appeared in 1960s. Since then, Islamic banking has gained much more prevalence and popularity than any other elements of Islamic economics.

However, such a development is not immune from criticism. As one of these critics indicates that “The interest-free bank was... intended to help in the formation of the ‘Islamic personality’. It was to be a case of private virtue leading to public virtue. As far as the practice of Islamic banking was concerned, it did not take long before the logic of social action in a capitalist global order made itself felt. An ideal that had been heralded as radical and transformative was itself transformed.” (Tripp, 2006). This citation is very valuable to understand that Islamic banks have been transformed and a discrepancy has appeared between the idea and practice of them.

This thesis concentrates on one of these transformation areas that Islamic banks have been experienced. That is, the lack of PLS mechanism and abuse of shariah for the existent PLS applications. The reason for the selection of especially this transformation area is the acceptance of the superiority of the PLS mechanism (See: Al-Suwailem, 2008; Kara, 2001). Then, we asked the following initial question to ourselves ‘Why do Islamic banks have not enough PLS mechanism and why do they prefer to use questionable methods while they apply PLS mechanism?’. However, it is not an easy task to answer ‘why?’

¹With the idea of Islamic economics, we especially mean the intellectual movement in post-colonial era. Otherwise, economic ideas of early Muslim scholars can be traced back to 11th century.

questions for socio-economic issues since the events or facts are generally the result of the combination of different reasons. Also for our question, different reasons can be argued at first hand e.g. human behaviour, the strong and manipulative effect of capitalism, inadequacy of infrastructure etc. Hence, there should be a criteria to decide which factor we should focus on, otherwise, it would be difficult to focus on all the possible ones. Our selection criteria are; the comprehensiveness and the compatibility for an analysis. In that regard, we define the hypothesis that the answer for the aforementioned question is the extra risks pertaining to PLS schemes of mudarabah and musharakah. Then the aim of the work became to identify which risks are causing what kind of facts, to define them in the context of PLS schemes, to find why and how they arise, to develop new approaches for their measurement and lastly to suggest mitigation techniques.

Due to above aim, we made a detailed search about how mudarabah and musharakah have been evaluated in Islamic jurisprudence, how they have been applied throughout the history and how they were designed by early scholars in the structure of modern Islamic banking. The results of our search is taken place in chapter 2. While writing this chapter, qualitative research methods are utilised. By this chapter, a detailed shariah background is provided for the readers.

In chapter 3, we use the combination of information gathered from Islamic banks, the works of other scholars and our own analyses to see how mudarabah and musharakah instruments are practised in Islamic banks. In that regard, the applications are listed under four headings; lack of PLS and abundance of murabahah, guaranteeing deposits and deposit insurance, income smoothing, determination of rate of return and profit sharing ratio.² For each of these applications, first, their existence is proved, then, the discussions about each application are shared and lastly a specific risk type is indicated as the reason for their existence i.e. asymmetric information and credit risk for the existence of the lack of PLS, credit risk for guaranteeing and deposit insurance, rate of return risk and withdrawal risk for income smoothing, determination of rate of return and profit sharing ratio. This chapter is including both qualitative and quantitative research methods.

After assigning a specific risk type for each of the problematic PLS applications of Islamic banks, we make a detailed analysis for each of these risk types in chapter 4. Hence, the main sections of this chapter are; asymmetric information, credit risk, rate of return risk and withdrawal risk. For the first section, we start with capital structure theories in conventional finance since they are the ones which concentrate on the issue of the choice

²It should be mentioned that these are the problematic applications or the problematic parts of the applications of Islamic banks. Otherwise, we refrain ourselves to argue that whatever Islamic banks are doing in terms of PLS applications are wrong.

between equity and debt financing. In that regard, asymmetric information as one of the elements of these theories is defined. Then similar kind of studies in Islamic finance literature are shared. The section is continued with our own analysis of how asymmetric information arises for PLS instruments and murabahah and in what regard it is disadvantageous for the former one. Then using negative incentives against moral hazard and signalling against adverse selection are suggested. The first method is modelled with a classic utility analysis meanwhile the second method is tested by an econometric analysis.

For the second section of the fourth chapter, first, credit risk in conventional literature is shared. Then we make a credit risk definition for PLS instruments by taking into account the idiosyncratic aspects of them. Connected to this definition, possible credit risk factors are identified for mudarabah and musharakah. Third, a general credit scoring approach for the measurement of credit risk of the PLS applicants is suggested. Lastly, after discussing different methods, three groups of credit risk mitigation techniques are suggested. These three groups are; contractual arrangements, accountancy arrangements, information disclosure and transparency.

In the third and last section of chapter 4, rate of return risk and withdrawal risk are evaluated together. First, they are defined in the context of PLS instruments, then, a general approach for the measurement of the rate of return risk is suggested. This is done together with an econometric analysis aiming to find the basic factors of the withdrawal risk in Islamic banks. Lastly, different risk mitigation techniques are suggested.

In sum, the fourth chapter is written to evaluate the risks which will accelerate by the decrement and the total removal of the problematic applications discussed in chapter 3. While writing this chapter, again, both qualitative and quantitative research methods are utilised.

Lastly, the contributions of this work can be listed as the following; first, shariah-based background information for mudarabah and musharakah is shared within three different perspectives, second, current problems of Islamic banks in terms of PLS applications are analysed in detail under four headings, third, four types of risks are suggested as the reasons of the aforementioned problems, fourth, risk management analysis of these risk types are done in detail. During the risk management analysis, which contains the major contribution of this work, new risk definition of credit risk and rate of return risk is made, asymmetric information calculations for mudarabah and musharakah are done, a new credit scoring approach is suggested, an econometric model investigating the factors of withdrawal risk is constructed, negative incentive method is modelled against the problem of moral hazard meanwhile dividend signalling method is modelled against the

problem of adverse selection and different mitigation methods are suggested against the problem of credit risk, rate of return risk and withdrawal risk.

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