

## **FINANCIAL ENGINEERING WITH ISLAMIC OPTIONS**

**MOHAMMED OBAIDULLAH\***

*In view of the central role which options play in mainstream financial engineering – in design of innovative financial products and management of risk, this paper undertakes an Islamic evaluation of options and its role in the Islamic system of financial contracting. An Islamic assessment of options as independent contracts in themselves and as embedded features in more complex financial products, reveals some interesting possibilities. While there is a lack of support among Islamic scholars on the use of options as independent contracts, the Islamic system of contracting allows for designing risk management solutions using the framework of khiyar al-shart. The paper analyzes and discusses the case of a specific Islamic contract, istijrar and highlights its possible use in managing certain forms of risk. A comparison of istijrar with some conventional financial products shows that some insights from mainstream options-related literature may enable the Islamic financial engineer to design the contract in a more efficient manner.*

### **1. INTRODUCTION**

The term financial engineering is associated with innovation. It implies a search for new and innovative solutions to financial problems. In the conventional sense, it often connotes design of new financial contracts for management of risk; for providing a better match between corporate and investor needs leading to enhancement of efficiency of the financial system. The financial problems in an Islamic economy are not unique. But the solutions probably are. The solutions are to be found within the Islamic framework. More importantly, these must not violate the norms of Islamic ethics. The search for Islamic solutions has intensified in many Muslim economies over the last two decades and has yielded a wide range of solutions. The ever-growing consciousness among the Muslim population to adhere to norms of Islamic ethics has brought this process into sharp focus.

Option is an important tool of financial engineering. Financial engineers often use options in the design of new financial contracts or in developing innovative strategies and solutions for financial problems, such as, management of risk. An

---

\* Associate Professor, Xavier Institute of Management, Bhubaneswar, India.

option implies a right without obligation. A conventional financial option is often traded as a separate contract in itself. The contract involves a right to purchase or sell an underlying asset at a stipulated price within or at the end of a specified time period. Transactions in options take place through organized markets. The underlying assets may be in the nature of various commodities, or financial assets, such as, stocks, bonds, currencies or various market indices. At times, financial options are not contracts in themselves, but embedded in complex products of financial engineering. In view of the massive growth of organized markets in options, as also the ever-increasing range of new and complex financial contracts, we undertake an Islamic evaluation of such products and also examine their role in the Islamic system of financial contracting. In section 2 we examine the notion of options (*al-khiyar*) forming part of the theory of contracting in Islamic law (*fiqh*) and undertake an assessment of options transacted as independent contracts in the conventional markets in the light of Islamic norms. In section 3, we discuss the possibility of designing financial instruments incorporating *shari'ah*-based options. We attempt to demonstrate the possibilities of managing price risk with some specific instruments. In section 4 we analyze and discuss the case of a specific instrument that can be designed by modifying the *bai-istijrar* contract. Section 5 provides a summary as well as suggestions for future research.

## 2. ISLAMIC EVALUATION OF OPTIONS

The theory of contracting in Islamic law discusses the notion of options within the framework, one type of options may provide the contracting parties a right, either to confirm or to cancel the contract within a stipulated time period. Such options for either or both the parties may apparently be seen by some as violating a *shariah* norm that valid contract comes into existence with the acceptance of the terms of contract by both the parties. Permissibility of these options is, however, justified on grounds of several larger benefits to the society. Through options, the parties to the contract are granted a reassessment or cooling off period over which they can rationalize their decisions or reverse the same. Thus, the possibility of conflicts between the parties because of their abrupt, irrational and wrong decisions are minimized. Another important reason may be that under conditions of excessive *gharar* or uncertainty regarding the article of exchange, price etc., options for the parties are provided to reduce *gharar* and bring it within Islamically acceptable limits. The rationale underlying options may be at times, to undo a wrong committed on a party. For example, Islam attaches great importance to the role of information in the market. Release of inaccurate information is forbidden.<sup>1</sup> The

---

<sup>1</sup> Abu Huraira (Allah be pleased with him) reported the prophet (peace be upon him) as saying "Do not meet the merchant in the way and enter into business transaction with him, and whoever meets him and buys from him (and in case it is done) that when the owner (of the merchandise) comes into the market (and finds that he has been paid less price) he has the option (to declare the transaction null and void)."

concealment of vital information (*ghish*) also violates the norms of Islamic ethics. According to the traditions of the holy prophet (peace be upon him), the informationally disadvantaged party at the time of the entering into the contract has the option to annul the contract. The traditions refer to price information in the market as well as other information relevant for valuation of the commodity.<sup>2</sup> Broadly, the classical *fiqh* literature discusses the following types of options: option as a condition or stipulation (*khiyar al-shart*); options for defect (*khiyar al-ayb*); option of determination or choice (*khiyar al-tayeen*); option of inspection (*khiyar al-ruyat*); and option of acceptance (*khiyar al-majlis*). Of the various options, the one that is potentially more promising in designing new financial instruments is the option of stipulating a condition (*khiyar al-shart*). Hence, we discuss this particular option in detail. The other notions of options are presented briefly in Appendix - I.

The options described above are all in the nature of rights embedded in a contract. Options, as independent financial contracts that are traded for a price, have no clear-cut parallel in the classical Islamic theory of contracting. Some contemporary scholars, such as, Abu Sulayman<sup>3</sup> (1992), Kamali<sup>4</sup> (1995), who have attempted an evaluation of such contracts, have used a generic term, *al-ikhtiyarat*, a variant of the term *al-khiyar*, which normally is the classical *fiqh* concept for various kinds of embedded options, as mentioned above. Abu Sulayman (1992) uses the terms *ikhtiyar al-talab*, *ikhtiyar al-daf*, and *fatrah at-ikhtiyar* for describing call options, put options, and option period respectively.

The key questions to be addressed in an evaluation of conventional options may be listed as follows:

- i) whether it is permissible to trade an option which is essentially a financial right for a fee; whether rights qualify to be in the category of *maal*;
- ii) whether charging a fee or premium by option writer can be permitted as a contractual stipulation within the framework of *al-khiyar* in conjunction with *daman*;
- iii) whether an analogy can be drawn between option trading and *bai al-urban*;
- iv) whether options involve *riba*;
- v) whether options involve *gharar* and speculation of a variety forbidden by *shari'ah*;

---

<sup>2</sup> Abu Huraira (Allah be pleased with him) reported the prophet (peace be upon him) as saying: He who buys a goat with its udder tied up has the option to retain the goat if he so desires or return it within three days, and in case he returns it he should do so along a *sa'* of dates.

<sup>3</sup> Abu Sulayman (1413H/1992).

<sup>4</sup> Kamali (1995).

## 2.1 Right as Objects of Sale

The view of some *shariah* scholars is that an option is a promise to sell or purchase a thing at a specific price within a stipulated time and such a promise in itself permissible. The promise is also binding on the promisor. However, this promise cannot be the subject matter of a sale or purchase.<sup>5</sup> As the resolution of Islamic Fiqh Academy, Jeddah<sup>6</sup> asserts “Option contracts as currently applied in the world financial markets are a new type of contracts which do not come under any one of the *shariah* nominate contracts. Since the subject of the contract is neither a sum of money nor a utility or a financial right which may be waived, the contract is not permissible in *shariah*.” One of the countervalues in the trading of options is a right or a privilege granted to a party in contrast to a tangible object or *maal*. The scope of *maal* also generally includes intangibles, such as, service, and usufruct. As Abu Sulayman observes “the subject matter of option is a right (*haqq*) and a right pure and simple (*al-haqq al-mujarrad*) is neither a tangible commodity nor usufruct; it cannot therefore be a proper subject matter of contract.”<sup>7</sup> El Gari (1993) who argued in favor of introducing options trading on other grounds, concurs with this viewpoint. As he writes “the said right does not have a tangible or material quality, but it is indeed intangible that may not be sold or brought, considering that it is not a property. It is only similar to a preemptive right (*shofaah*, right of custody and guardianship) all of which, while allowed in *shari’ah* are intangible rights that are not allowed to be sold or relinquished against monetary compensation.<sup>8</sup> A few scholars however, would prefer to include any kind of benefit or *munafaa* in the definition of *maal*. Since options involve a benefit (a right without obligation) for the purchaser, trading of such benefit is observed to be permissible. The Islamic Investment Study Group of the Securities Exchange Commission, Malaysia in its report finds call warrants to be acceptable because it “has the characteristics of an asset which satisfies the concept of “*haqq mali*” and “*haqq tamalluq*” which is transferable based on the majority of *fuqaha* views other than *mudhhab* Hanafi. Therefore this right can be classified as an asset and can, therefore, be traded. The famous *fuqaha* can also accept this right as an asset on the basis that conventional wisdom is something you can possess and benefit from.”<sup>9</sup>

---

<sup>5</sup> Reply to queries of this author on permissibility of “Options, Futures, Swaps, and Equity Investments” by Taqi Usmani published in *New Horizon*, June 1996, pp.10-11.

<sup>6</sup> *Resolution No.65/1/7 on Financial Markets* of the Council of the Islamic Fiqh Academy, Jeddah, Saudi Arabia, adopted by the Seventh Session of the Council on 9-14 May 1992.

<sup>7</sup> Abu Sulayman, “Al-Ikhtiyarat: Darasah Fiqhiyya Tahliyyah Muqaranah,” *Mujallah al-Buhuth al-Fiqhiyyah al-Muasarah*, pp 32-33, quoted in Kamali (1995).

<sup>8</sup> El Gari (1993), p 13.

<sup>9</sup> Ahmad (1996).

## 2.2 The Framework of *Khiyar al-shart* and *Daman*

*Khiyar al-shart* is an option that is in the nature of a condition stipulated in the contract. It provides a right to either of the parties, or both, or even to a third party to confirm or to cancel the contract within a stipulated time period. In essence, this implies that the concerned party gets some time period for reassessment of the benefits and costs involved, before giving final accent or ratification to the contract. Such option is also termed as *khiyar al-tarwih* (option of reflection) by some scholars.

The permissibility of such options is inferred directly from the following *hadith* of the holy prophet (peace be upon him) reported by al-Bukhari and Muslim. When Habban Ibn Munqidh complained to the holy prophet (peace be upon him) that he was the victim of frequent fraud in some earlier transactions, the holy prophet (peace be upon him) is reported to have said “When you conclude a sale you may say that there must be no fraud and you reserve for yourself an option lasting three days.”<sup>10</sup> According to another *hadith* reported by al-Bukhari, the holy prophet said, “the two contracting parties have a right of option as long as they are not separated or the sale was a sale of option”. This *hadith*, therefore, proves the basic validity of *khiyar al-shart* along with *khiyar al-majlis* which has been discussed later.

There is a consensus among jurists belonging to all the major school regarding the permissibility of *khiyar al-shart*. According to Al-Nawawi “the strongest basis for *khiyar al-shart* is *ijma*... and that is enough.”<sup>11</sup> However there is some divergence of opinion among jurists on whether options and other contractual stipulations are valid as a matter of principle, or these are merely tolerated by way of exception. As discussed later, Imam Abu Hanifa and Imam Shafii viewed such option-related stipulations as mere exceptions permissible for a period of three days only while Imam Hanbal did not impose any limit.

As far as the general framework of contractual stipulations and conditions is concerned, Kamali (1995) examines in detail the *shari’ah* basis of such stipulations. As he notes, while the general Hanafis and Shafii position relating to all contractual stipulations including options is that these should be in harmony with the essence of the contract (such as, the seller in a deferred sale seeking a mortgage or a guarantor), the Maliki position is more liberal which validates stipulations even with financial value (such as, the buyer stipulating that the goods be transported to certain locality). He quotes extensively from the writings of Hanbali scholars, such as, Ibn Taymiyyah and his disciple Ibn Qayyim al-Jawziyya to highlight their liberal views which lay emphasis on the basic freedom of contract

<sup>10</sup> Al-Marghinani, *al-Hedaya: Sharh Bidayat al-Mubtadi*, translated by C.T. Hamilton, p. 248.

<sup>11</sup> Al-Nawawi, *al-Majmu Sharh al-Muhadhdhab*, Vol.9, p. 225.

and the parties' liberty to make stipulations as they please. He asserts that the sunnah entitles the parties to insert stipulations in contracts so as to meet their legitimate needs and what may be deemed to be of benefit to them.<sup>12</sup>

There is a consensus among jurists that such conditions providing options to either or both the parties are Islamically valid. There is also a general agreement on the question of granting this right to a third party when, for instance, individual A purchases a commodity from individual B subject to the condition of ratification of the purchase by individual C. There is however, some difference regarding the modalities of stipulating the condition providing the option to a third party.

As such contracts involving exchange of countervalues either from one end or both, and which are inherently cancelable at any later date, may contain these options. Deposits and loans (*wadiya* and *aariya*) do not fall under these categories as these are not in the nature of exchange contracts. It may be noted that such contracts always provide the option to the depositor or lender to call back their deposits or loans at any time. Hence, providing any further option makes no sense. Options are permissible in leasing (*ijara*). In debt transfer (*hawala*), there is a difference of opinion regarding the permissibility of such options. The Hanafis find the same permissible while the Shafiis and Hanbalis do not. The contracts which contain such options include *bai-sarf*, and *bai-salam*. The Malikis however, allow options in *bai-salam* if the period is very limited.<sup>13</sup>

Some modern scholars, though in minority, prefer to examine the same under the framework of *khiyar al-shart* or contractual stipulation and find option trading to be permissible (*mubah*). They argue that charging a premium by the option writer may be treated as a compensation within the framework of *daman*.

Kamali (1995) is the major proponent of this line of thinking. As stated above, he asserts the *sunnah* as the basis of stipulations in contracts. It is pertinent to quote the views of another scholar Ahmad Muhayyuddin Hassan on this issue. Hassan believes that "the basic notion of *khiyar al-shart* is anomalous to the norm and is merely tolerated which is why it is basically confined to three days. The way in which options are designed and traded on the other hand turns the restrictive terms of *khiyar al-shart* into a basic permissibility, which marks a departure from the stated guidelines of *shari'ah*."<sup>14</sup> Kamali attempts to contradict the same by asserting that this is essentially the same argument that Hanafi and Shafii jurists have advanced on the subject and has, in fact, been addressed and effectively refuted in the writings of Hanbali jurists, especially Ibn Qayyim al-Jawziyya, who

---

<sup>12</sup> Kamali (1995), pp. 31-36.

<sup>13</sup> Al-Jaziri *Kitab al Fiqh ala Madhahib al Arbaah*, Kitab al-Bai, Vol.2, pp 174-176.

<sup>14</sup> Hassan (1986), *Amal Sharikat al-Istithmar al-Islamiyyah fil suq al-Alamiyyah*, Al-Dar al-Saudiyyah lil-Nashr wal Tawzi, pp. 268-71, quoted in Kamali (1995).

has departed from the earlier position and reached the conclusion that options and contractual stipulations are valid as a matter of principle, and not by way of exception. Kamali quotes the following *hadith* in support of this position. “The prophet (peace be upon him) bought a camel from one Jabir and agreed to Jabir’s stipulation that he wished to ride the camel to Medina and deliver the same afterwards.” According to another *hadith*, the prophet (peace be upon him) said “One who sells a slave who owns property, the property shall belong to the seller unless the buyer stipulates otherwise.” Another *hadith* asserts that the prophet (peace be upon him) said “Whoever sells a palm tree that has borne fruit, the fruit belongs to the seller unless the buyer stipulates otherwise”. On the basis of these *ahadith*, the Hanbali jurists Ibn Qayyim al –Jawziyya asserted that “this is nothing other than sale combined with an extraneous stipulation (*bai wa shart*) which is explicitly validated by authentic *sunnah*.”<sup>15</sup>

Kamali goes on to argue that “this analysis is affirmative not only on the parties’ freedom to insert stipulations in contracts but also that a monetary compensation or a fee may be asked by one who grants an option or a privilege to the other. If the seller is entitled to stipulate for a security deposit or a pawn then it is mere extension of the same logic that he may charge the buyer and impose a fee or compensation in respect of such options and stipulations that are to the latter’s advantage... We thus conclude that options may carry a premium and there should basically be no objection to this.”<sup>16</sup> Kamali also refers to the works of Shahat al-Jundi<sup>17</sup>, Yusuf Sulayman<sup>18</sup> and Ali Abd al-Qadir<sup>19</sup> and asserts that all of them are affirmative on the basic validity of options trading and concur on the conclusion that the option buyer pays for a right, or an advantage, and the seller who grants this is entitled to be paid for it.

When conditional sale (*bai wa shart*) with options as conditions (*khiyar al-shart*) is combined with compensation (*daman*) for the party at a disadvantage, the result seems to be very similar to the conventional options framework. As Kamali writes “options are derivative instruments which derive their basic rationale from associating with another transaction or contract. The notion of granting the trader a choice whether to ratify or cancel an underlying contract is therefore essential to options.”<sup>20</sup> For instance, in case of a call option of stock X maturing after three months, the underlying contract may involve purchase of 100 stocks of company X at a price of \$5 per share . This may be viewed in the *fiqhi* framework as a *bai wa shart* contract for purchase of 100 stocks of company X with a condition of option

---

<sup>15</sup> Kamali (1995), pp. 34-35.

<sup>16</sup> *ibid.*, pp. 35-36.

<sup>17</sup> Al-Jundi (1409/1988), p. 151.

<sup>18</sup> Sulayman (1402/1982), p. 425.

<sup>19</sup> Abd al-Qadir (1402/1982), p. 441.

<sup>20</sup> Kamali (1995), *op. cit.*, p. 40.

(*khiyar al-shart*) for the buyer to either ratify or cancel the contract on or before three months from the day of contracting. As discussed later, in the *khiyar al-shart* framework, the countervalues need not change hands at the time of contracting similar to the conventional options trading practice. Additionally, when the buyer compensates the seller for being at a disadvantage for granting the option, the framework is complete and the conventional options trading apparently perfectly fits into the *fiqhi* framework.

However, it is perhaps the additional component of *daman* or compensation in the above framework, which is questionable. Not many contemporary *shari'ah* scholars have any objection to the validity of a sale with a condition (*bai wa shart*) where the condition is stipulation of option (*khiyar al-shart*); or even when the contractual price (*thaman*) is inclusive of any compensation for the benefit provided by the seller for being at a disadvantage. However, conventional option trading would imply separation of the compensation component and its up-front payment to the option writer or seller under a separate contract. As noted in section 2.1 above, a promise or obligation cannot be the object of sale according to an overwhelming majority of scholars. Kamali's treatment of conventional options in the combined framework of *khiyar al-shart* and *daman* is also questionable on another ground. In classical *shari'ah* law, before *daman* can operate one needs to show some illicit act (*taaddi*) or negligence (*tafrid*) by the party required to compensate. It is a kind of tortious liability<sup>21</sup> and reference to the same in the context of sale of a right seems to be clearly misplaced. Kamali also fails to cite a single reference of the great *fuqaha* of the past on the use of *daman* in the *bai wa shart* framework.

### 2.3 Similarity with *Bai al-Urbun*

*Urbun* refers to a sale in which the buyer deposits earnest money with the seller as a part payment of the price but agrees that if he fails to ratify the contract he will forfeit the deposit money which the seller can keep. A call option is similar to *bai al-urbun* in the sense that the seller does not return the premium or advance payment to the buyer in case the latter does not exercise the purchase option and confirms the contract. However, in case of a call option, the buyer loses the option premium even if the option is exercised and the contract is confirmed. In case of *bai al-urbun*, however, the option premium is adjusted in sale price when the contract is confirmed. All the schools of *fiqh* except the Hanbali school find *bai al-urbun* unacceptable. These scholars have found the retention of earnest money or premium by the seller akin to misappropriation of the property of others. These scholars have primarily relied on the following simple and straightforward *hadith* narrated by Ibn Abbas "the prophet (peace be upon him) prohibited the sale of "urbun" reported in Imam Malik's *muatta*.

---

<sup>21</sup> Ian Edge (1988), p. 40.



The followers of Imam Ibn Hanbal however, find this kind of transaction Islamically permissible. Imam Hanbal considered this *hadith* to be weak and validated *urbun* based on the practice of Caliph Umar. It is reported in *al-Mughni* from Nafi bin al-Harith, the Caliph's officer in Mecca that he purchased from Safwan bin Umayya a prison house for four thousand dirhams on condition that if the caliph approved of it, the deal would be final, otherwise he (Safwan) would be given four hundred dirhams.<sup>22</sup> Yusuf Al-Qaradawi has examined the evidence relating to *bai al-urbun*. He quotes another *hadith* in support of such contract recorded in *Nayl al-Awtar*; "The Messenger of Allah was asked concerning the sale of *urbun* and he declared it permissible". Qaradawi observes that "the issue should consequently be determined on rational grounds... This ruling (of Ibn Hanbal) is more suitable to our own times and in greater harmony with the spirit of *shari'ah*, which seeks to remove hardship and facilitate convenience of the people."<sup>23</sup>

El Gari (1993) argued in favor of transactions in call options using the framework of *bai al-urbun*.<sup>24</sup> According to him, the followers of Ibn Hanbal argue in favor of this type of sale, which is one of the antique rules of this particular school of *Fiqh*. He quotes the *Athar* (practices of *sahabah*) reported in *al-Bukhari* from Ibn Sirin when he said: "A man told the operator of a caravan, I would like to join your passengers, but if I did not depart with you on a certain day, you would be entitled to a sum of one hundred dirhams. When he did not depart on the set date, he willingly agreed to comply with the condition."

Abu Sulayman is also of the view that "charging a price for a call option whereby the buyer may then decide to exercise the option and make it a part of the price does not affect the validity of this contract – provided that it is valid in other respects – but may be seen in the category of *urbun* sale." Of course he questions the validity of conventional options trading on other grounds. As he asserts "the basic purpose behind the two transactions is so different as to make drawing an analogy between them totally superfluous; that in the final analysis, such an analogy will be no more than a discrepant analogy (*qiyas ma al-fariq*), which is invalid."<sup>25</sup>

It may be noted here that any argument on validity of options because of its similarity with *bai al-urbun* is relevant only for call options. As far as a put option is concerned there seems to be little support in its favor.

---

<sup>22</sup> Quoted in Ahmad (1996), p. 8.

<sup>23</sup> Al-Qaradawi (1393H/1973), *Shariah al-Islam Salihah lil-Tatbiq fi Kull Zaman we Makan*, Dar al-Sahwah, p. 114, quoted in Kamali (1995).

<sup>24</sup> El Gari (1993), pp. 14-16.

<sup>25</sup> Abu Sulayman "Al-Ikhtiyarat: Darasah Fiqhiyyah Tahliliyyah Muqaranah," *Mujallah al-Buhuth al-Fiqhiyyah al-Muasarah*, p. 32, quoted in Kamali (1995).

## 2.4 The Issue of *Riba* Prohibition

Options are either separate contracts providing the holder a right without obligation to transact an underlying asset, or are embedded in other main contracts. In both the cases, one primary requirement for validity of such contracts – provided they are not invalid on other ground – is that the underlying asset in the former case and the main contract in the latter case do not involve any element of *riba*. Hence, one may examine the case of interest rate options or bond options, currency options, equity options, options on other Islamic contracts, and the more complex ones, such as, options on options or options on futures by subjecting the underlying asset or the main contract to scrutiny.

There is a general consensus on the view that the entire range of debt securities involves *riba* and is considered un-Islamic. Hence, options relating to such securities are also not permissible. Currency options are also ruled out, since an overwhelming majority of jurists equate currency exchange with *bai-sarf* in which spot settlement or *qabd* by both the parties on the spot is insisted upon.<sup>26</sup> Considering the case of equity options, the equity stocks must meet some additional criteria to conform to Islamic norms. All business activities of the company issuing the stocks should be *halal* and permissible. Accordingly, options on stocks of companies belonging to the breweries, entertainment, interest-based banking and finance and other similar industries where the major line of business is *haram* fall into the forbidden category. An issue on which some difference of opinion exists among Islamic scholars relates to permissibility of stocks of a company that is engaged in *halal* business but which also finances part of its assets through interest-bearing debt. Various certificates are obviously permissible, as these have been created with the explicit purpose of meeting *shariah* requirements.

## 2.5 The Issue of *Gharar* and Speculation

The Islamicity of a contract also depends on whether the contract involves excessive *gharar* beyond acceptable limits. A related issue pertains to the potential misuse of the contracts for speculative gains.

*Gharar* unlike *riba* does not have a consensus definition. In broad terms, it connotes risk and uncertainty. It is useful to view *gharar* in a continuum of risk and uncertainty wherein the extreme point of zero risk is the only point that is well-defined. Beyond this point, risk or *gharar* becomes a variable and the *gharar*

---

<sup>26</sup> Some Hanafi scholars however, seem to permit deferment of settlement of the transaction in currencies belonging to different countries from one end. These divergent views were presented at the Fourth Fiqh Seminar organized by the Islamic Fiqh Academy, India in 1991. The papers presented were subsequently published in *Majalla Fiqh Islami*, part 4 by the Academy.

involved in a real life contract would lie somewhere on this continuum. Beyond a point on this continuum, risk and uncertainty or *gharar* becomes unacceptable. Jurists have attempted to identify such situations involving forbidden *gharar*. A major factor that contributes to *gharar* is inadequate information (*jahl*) which increases uncertainty. This is when the terms of exchange, such as, price, objects of exchange, time of settlement etc. are not well defined. *Gharar* is also defined in terms of settlement risk or the uncertainty surrounding delivery of the exchanged articles.

Islamic scholars have identified the conditions, which make a contract uncertain to the extent that it is forbidden. Each party to the contract must be clear as to the quantity, specification, price, time, and place of delivery of the contract. A contract, say, to sell fish in the river involves uncertainty about the subject of exchange, about its delivery, and hence, not Islamically permissible. The need to eliminate any element of uncertainty inherent in a contract is underscored by a number of traditions.<sup>27</sup>

Traditionally, an overwhelming majority of *shari'ah* scholars include terms of a possible failure by the parties to deliver the goods exchanged in the scope of *gharar*. In the organized and free markets of today for commodities, stocks, currencies, the probability of failure to deliver the same on the maturity date should be no cause for concern. Further, the standardized nature of options contracts and transparent operating procedures on the organized markets is believed to minimize this probability. Some recent scholars have opined in the light of the above that the probability of failure to deliver leading to *gharar* was quite relevant in a simple, primitive and unorganized market. It is no longer relevant in the organized options markets of today. Such contention, however, continues to be rejected by the majority of scholars. They underscore the fact that options contracts almost never involve delivery by both parties. On the contrary, the contract is settled in price difference only.<sup>28</sup>

---

<sup>27</sup> The following traditions underscore the need to avoid contracts involving uncertainty. Ibn Abbas (Allah be pleased with him) reported that when Allah's prophet (peace be upon him) came to Medina, they were paying one and two years advance for fruits, so he said: "Those who pay in advance for any thing must do so for a specified weight and for a definite time".

It is reported on the authority of Ibn Umar (Allah be pleased with him) that the Messenger of Allah (peace be upon him) forbade the transaction called *habal al-habala* whereby a man bought a she-camel which was to be the off-spring of a she-camel and which was still in its mother's womb.

<sup>28</sup> Reply to queries of this author on permissibility of "Options, Futures, Swaps, and Equity Investments" by Mufti Muhammad Taqi Usmani published in *New Horizon*, June 1996, pp.10-11.

An outcome of excessive *gharar* or uncertainty is that it leads to the possibility of speculation of a variety, which is forbidden. Speculation in its worst form, is gambling. The holy Quran and the traditions of the holy prophet forbid games of chance<sup>29</sup> and all forms of gambling. The term used for gambling is *maisir* which literally means getting something too easily, getting a profit without working for it. Apart from pure games of chance, the holy prophet also forbade actions which generated unearned incomes without much productive efforts.

Here it may be noted that the term speculation has different connotations. It always involves an attempt to predict the future outcome of an event. But the process may or may not be backed by collection, analysis and interpretation of relevant information. The former case is very much in conformity with Islamic rationality. An Islamic economic unit is required to assume risk after making a proper assessment of risk with the help of information. All business decisions involve speculation in this sense. It is only in the absence of information or under conditions of excessive *gharar* or uncertainty that speculation is akin to a game of chance and is reprehensible.

Do conventional options involve excessive risk or uncertainty (*gharar*) and may be used for speculation of a variety akin to a game of chance? Let us consider the case of simple options, such as, a call option. For example a call option on stock X provides a right to individual A to purchase the stock at a price of \$ 50 three months from now. The call itself is purchased at a price of say \$ 5. If, as per his expectations, the price of X increase to \$ 60 on the maturity date, then the buyer of the call has a net gain of \$ 5 (on an investment of \$ 5). This is what the seller or the writer of the call would lose. If the buyer would have purchased the stock itself (say at a price of \$ 50) instead of the call on the stock in order to benefit from expected price rise, then he would have made a profit of \$ 10 on an investment of \$ 50. Thus a call option enables the buyer to magnify his returns if his expectations materialize. Now contrary to his expectations, if the price of the stock falls below \$ 50 on the maturity date, say to \$ 40, the buyer would allow the option to expire without exercising it since he can buy from the market at a lower price. His losses would amount to \$ 5 or hundred percent with the call. This \$ 5 would be what the seller of the call would gain on zero investment. It may be noted that losses for individual A are also magnified with options. (losses would have been \$ 10 on the

---

<sup>29</sup> According to a tradition reported by Abu Huraira (Allah be pleased with him), Allah's Messenger (peace be upon him) forbade a transaction determined by throwing stones, and the type which involves some uncertainty.

The form of gambling most popular to Arabs was gambling by casting lots by means of arrows, on the principle of lottery, for division of carcass of slaughtered animals. The carcass was divided into unequal parts and marked arrows were drawn from a bag. One received a larger or smaller share depending on the mark on the arrow drawn. Obviously it was a pure game of chance.

investment of \$ 50 with purchase of the underlying stock). In the game, the buyer and seller must have diametrically opposite expectations. The possibility of risk and returns are magnified, the gains of the buyer being equal to the losses of the seller and vice versa. Thus, the purchase and sale of options is a risky zero-sum game.

The possibility of such gains encourages economic units to speculate on the future direction of the price of the underlying asset. Since prices of such assets fluctuate randomly, gains and losses are random too and the game is reduced to a game of chance. There is a vast body of literature on the forecastability of stock prices, currency exchange rates etc. And a large majority of empirical studies have provided supporting evidence on the futility of any attempt to make short-run predictions. Prices and rates are volatile and remain unpredictable at least for the large majority of market participants. Needless to say, any attempt to speculate in the hope of the theoretically infinite gains is, in all likelihood, a game of chance for such participants. While the gains, if they materialize, are in the nature of *maisir* or unearned gains, the possibility of equally massive losses do indicate a possibility of default by the loser and hence, *gharar*.

The economic rationale of conventional options is believed to be their potential use as a hedging device. Hedging or risk transfer adds to planning and managerial efficiency. In the context of asset markets which are characterized by volatile prices and rates, such contracts are believed to enable the parties to transfer and eliminate risk arising out of such fluctuations. For instance, individual A plans to buy (or sell) stock X after a time period of three months. He may be adversely affected if price moves up (or down) during this time period. The risk due to price movement could be hedged by purchasing a call (or put) with a given exercise price. The price paid for the options would be in the nature of a cost of hedging against adverse price fluctuations. While this is true, the fact remains that an overwhelming majority of transactions are speculative and not meant for hedging. And, hedging alternatives which are not speculative do exist in the Islamic framework.

Some jurists grant permissibility to options subject to the condition that the obligations implicit in the contract for both parties cannot be transferred to a third party.<sup>30</sup> This would effectively curb the possibility of speculation. However, at the same time, this stipulation would also kill the organized market in options.

### **3. FINANCIAL CONTRACTS WITH EMBEDDED *KHIYAR AL-SHART***

It is clear from the above discussion that the permissibility of option as an independent contract is highly questionable. However, when option is embedded in another exchange contract as a condition, the same appears to be Islamically valid.

---

<sup>30</sup> Gamal Attia (1987), p. 107.

In this section we examine whether *khiyar al-shart* or option as a condition has any potential economic benefit as a tool of risk management, even though the framework is primarily ethical in nature. Prior to that, we undertake a more detailed discussion of various other issues relating to *khiyar al-shart*.

### 3.1 *Khiyar al-Shart*: Some Further Details

There is a general agreement among all jurists that the options would continue for a known and finite time period. A contract providing a perpetual option or an option valid for an uncertain time period (for example, an option till company A starts generating profits) is not permissible. There is considerable difference of opinion about the maximum permissible time period over which the options would continue.

According to Imam Abu Hanifa and Imam Shafii, the time period during which the condition of option remains in force cannot exceed three days.<sup>31</sup> According to them the stipulation of a condition is repugnant to the nature of an exchange contract which should be binding and obligatory immediately after its conclusion. It was justified by the prophet's permission which must be strictly construed, and hence, cannot be extended to a period beyond what has been specified. However, according to Imam Muhammad and Imam Abu Yusuf, prominent jurists of the Hanafi school, such stipulation may continue for any length of time, since three days may be too short a period under certain circumstances to take a decision for the parties involved. According to the Malikis, the nature of the object of transaction would determine the maximum permissible time period. For example, the same can be as high as 36 days for properties. The jurists of this school have considered a wide range of commodities and accordingly, stipulated the maximum permissible time period. According to the Hanbali School, the time period must be finite, free from any uncertainty and known to both parties at the time of contracting and there is no limit on the maximum permissible time period.<sup>32</sup>

In addition to the issue of option maturity, the issue of ownership and possession of article of exchange during the option period is quite important. Another pertinent question relates to the liability of buyer and seller in case the article, which may in the possession of either party, is destroyed or suffers a diminution in value. Again there are divergent views on these questions.

The Hanbalis assert that ownership of the exchanged article gets transferred to the buyer during the option period irrespective of whether the option is with the buyer or the seller or both. In case the article of exchange gets destroyed, or suffers

---

<sup>31</sup> Al-Marghinani, *al-Hedaya: Sharh Bidayat al-Mubtadi*, translated by C.T. Hamilton, p. 248.

<sup>32</sup> Al-Jaziri, *Kitab al Fiqh all Madhahib al Arbaah, Kitab al-Bai*, Vol.2, pp 177-179.

a diminution in value during the option period, then the liability of the buyer and seller would depend on whether or not the article is weighed or measured at the time of exchange. In case of an article of weight or measurement, the party in possession of the article would compensate for the loss. In case the exchange does not involve any weight or measurement, the buyer would be liable for the loss if he has taken possession of the article. He would be liable even when the seller is in possession, but at the same time, the seller has not explicitly refused to switch possession of the article. In the event of refusal however, the seller is liable. This implies that change of ownership should be accompanied by, transfer of possession in favor of buyer. As long as there are no constraints on transfer of possession, and the same is not effected, the article would remain with the seller in trust (*amanah*). And there is no compensation in trust (*amanah*) unless the loss is due to deliberate negligence and destruction. And when the buyer causes the destruction or diminution in value, any option with him would automatically be canceled and he would be liable for the value of the article (not the *thaman* or contracted price).<sup>33</sup>

The Shafiis have different views on the issue of ownership of the article during option period. If the seller holds the option, his ownership continues. If the buyer retains the option, then the ownership gets transferred to the buyer. And if both have the option then the ownership remains suspended during the option period. Subsequently when the contract is ratified, the article would be assumed to remain in ownership of the buyer since the time of contracting. And if the same is annulled then it would be as if the ownership has always been with the seller. The benefits flowing from ownership (for instance, dividends, warrants or other possible benefits for a stockholder) would accordingly accrue to the buyer or seller as the case may be.<sup>34</sup> It is possible that the article of exchange may be destroyed during the option period due to some unforeseen or uncontrollable factors. If this happens before the transfer of possession by the seller then, the contract would be annulled irrespective of whether the option is with the buyer or seller or both. If the destruction occurs after the buyer takes possession then the contract would be annulled in case the seller holds the option without any liability for the buyer. However, when the option is with the buyer or both, then the option would remain in force. Subsequently, if the contract is ratified then, the buyer would be liable for *thaman*. And if the contract is annulled then the buyer would be liable for value of the article only.

The Hanafi view on this issue can be discussed under three possible scenarios: when the seller holds the option; when the buyer holds the option; and when both the buyer and seller hold the option.

---

<sup>33</sup> *ibid.*, pp. 180-181.

<sup>34</sup> Al-Nawawi, *Minhaj al-Talibin*, translated by E C Howard, pp. 129-131.

When the seller holds the option, the consensus view is that the ownership of the article of exchange would continue with him. There is also a consensus on the views that in this case, the buyer would cease to be the owner of the countervalue or *thaman*. However, there is difference of opinion on whether the ownership of *thaman* would shift to the seller or not. Under the circumstances the liability of buyer or seller in case of loss or diminution in value of the article during the option period would depend on whether the buyer has taken possession of the article or not. In case the former is true, then the buyer would be liable for the value of the article as on the date of possession (not the date of destruction or loss). The liability of the buyer would be same irrespective of whether the contract is subsequently ratified or annulled by the seller holding the option. In fact, with the seller having the option, and the article in possession of the buyer, if the seller exercises the option and cancels the contract within the option period, then the buyer would have to pay the value of the article irrespective of whether the same is in proper condition or ceases to exist.<sup>35</sup>

If any defect is observed in the article while in possession of the seller, then its value would be accordingly adjusted downwards and the option of the seller would not be affected provided the same is not due to his negligence. And under these conditions, the buyer would get an option, either to take delivery of the article in exchange of the contracted price or cancel the contract. However, if the defect occurs due to the action of the seller, then he would be held responsible for the diminution in value and the contracted price would be adjusted downwards by the amount of the loss. And if the article is completely destroyed in the hands of the seller holding the option, then the contract would be canceled without any liability for either the seller or the buyer.

When the buyer or any third person holds the option, the consensus view is that the ownership of the countervalue or *thaman* would continue to remain with the buyer. There is also a consensus on the view that in this case, the seller would cease to be the owner of the article of exchange. However, there is a difference of opinion on whether the ownership of article would shift to the buyer or not. Imam Abu Hanifa asserts that in case the buyer becomes owner of the article, this would imply ownership of both the countervalues in the exchange which is inequitable and unjust. (The other proponents of this school, Imam Abu Yusuf and Imam Muhammad are, however, not very comfortable with the possibility that the article will remain without any owner during the option period.) Imam Abu Hanifa opines that even if the buyer does not become owner of the article, he would be held responsible for the same in the event of taking its possession. And if the article is destroyed in his possession, he would be liable for payment of the contracted price (*thaman*). This is in contrast to the case of the seller holding the option, where the

---

<sup>35</sup> Al-Marghinani, *al-Hedaya: Sharh Bidayat al-Mubtadi*, translated by C.T. Hamilton, pp. 248-250.



buyer is liable to pay value only. There are however, qualifiers to the above. Under certain specific conditions, the buyer would be liable for value and not the contracted price (*thaman*).

There is a further divergence of views under the following conditions. If the defect is caused by the seller's actions with the buyer having the option, then according to Imam Muhammad, such option would continue with the buyer who has two alternatives – either to ratify the contract subject to compensation of loss by the seller, or to cancel the contract. According to Imam Abu Hanifa and Abu Yusuf, the contract would be deemed confirmed (option with buyer would expire) and the buyer would be required to pay the diminished value for the defective article to the seller.

The third possibility is that both the buyer and seller hold options. In such case there would be no change in the ownership of the countervalues. In case the object of sale gets destroyed after the buyer takes possession of the same, then the contract would be cancelled and the buyer would be required to pay the value of the article. If either of them cancels the contract within the option period, then the contract would cease to be in existence. And if either of them ratifies, then his option would cease while the other party would continue to have the option. If neither party ratifies or cancels within the option period then the contract would automatically come into force. And if either party ratifies while the other party cancels then the contract would remain in force only during the time interval between ratification and cancellation irrespective of which occurs earlier. As far as benefits flowing from possession are concerned, these would remain in a state of suspension during the option period. If the contract is subsequently ratified, these would accrue to the buyer and if canceled, would accrue to the seller.

Further, the holder of the option may annul the sale with the knowledge of the counterparty or confirm it without his knowledge. Annulment without informing the counterparty is not permissible according to Imam Abu Hanifa and Imam Muhammed. Imam Shafii and Imam Abu Yusuf however, do not see informing the counterparty as a requirement for annulment. Confirmation however, may not require informing the counterparty. The criteria here is whether keeping the counterparty uninformed would result in any loss for him.<sup>36</sup>

The Malikis assert that the ownership of the article of exchange does not shift during the option period irrespective of who holds the option. The confirmation of the contract transfers the ownership to the buyer. When the seller holds the option, and the buyer takes possession of the article and subsequently claims loss of the same, the compensation to be borne by the parties would be largely decided by a legal process that would examine the veracity of the claims. If the buyer is able to

---

<sup>36</sup> Al Jaziri, *op.cit.*, Vol.2, pp. 181-183.

substantiate its claim then the loss would be borne by the seller. Otherwise it would have to compensate for the loss. There are further details on how to determine the quantum of compensation.

When the buyer holds the option and claims loss of the article in his possession, then he is entitled to pay *thaman* irrespective of whether the same is more or less than value of the article. And when both the seller and the buyer hold the option, it would be treated in a manner similar to the seller holding the option. As far as the benefits flowing from the article of exchange during option period are concerned, these would accrue to the seller if these can be separated from the article of exchange. Or else, these would accrue to the buyer.

According to the Malikis, the seller has no right to demand *thaman* from the seller during the option period. And if the seller specifies a condition of spot payment of *thaman* by the buyer, then the contract would become invalid. This is because, in case the contract is subsequently annulled, then the *thaman* delivered by the buyer would amount to a kind of lending which is forbidden. However, if the *thaman* is voluntarily paid by the buyer and this is not in the nature of a condition to the exchange, then it is permissible. As far as taking possession of the article of exchange is concerned, this is permissible for the buyer. And the seller cannot be forced to transfer possession except when the buyer specifies an explicit condition in the contract to that effect.<sup>37</sup>

From the above discussion it is clear that the primary considerations underlying the prescriptions of various jurists are: benefit of both the parties to the contract and avoidance of any potential conflict or litigation between them. One may also discern a distinct possibility of designing innovative financial instruments by adding option-related features to a contract within the framework of *khiyar al-shart*. The following points that are found acceptable by atleast some of the four major schools of *fiqh* are worth mentioning. First, options may have maturities of any duration as long as the option period is definite and known at the time of contracting. Second, the buyer can have possession of the goods during the option period. Similarly, the seller can have possession of the contracted price during the option period. Third, the settlement price may differ from the contracted price under certain conditions. As we shall see later, this last feature opens up the possibility of managing risk arising out of price volatility, so common in modern markets.

### 3.2 Managing Price Risk with *Khiyar al-Shart*

The importance of risk management in present day business environment can be hardly overemphasized. A factor which significantly contributes to risk is price

---

<sup>37</sup> *ibid.* Vol.2, p. 183.

volatility. Organized markets in commodities, stocks, currencies etc. are characterized by volatile movements in prices and rates. For an Islamic economic unit, this translates into probable variations in cash outflows (due to procurement of raw materials, merchandise etc.) and in cash flows (due to sales and other revenues). Since a complete discussion of risk management possibilities for an Islamic economic unit is beyond the scope of this paper, we analyze and demonstrate the possible use of *khiyar al-shart* for managing business risk and specifically, price risk in the context of commodity markets.

As far as financing of long term assets, such as, land, building, plant and machinery are concerned, *murabahah* and *ijara* seem to be the most popular modes of financing with Islamic banks. Under *murabahah* financing an Islamic bank purchases an asset as per the specification of its client from the supplier and resells the same to the client at a higher price, often on a deferred basis. The process involves a risk that subsequent to purchase by the Islamic bank from the original supplier, it may not be in the interest of the client any longer to buy the same from the bank. Often this would be so for commodities with volatile prices, where price of the asset declines after the first purchase by the bank. It can be easily shown that management of the above risk is possible in the *khiyar al-shart* framework. In this case, a simple alternative for the Islamic bank would be to retain an option for itself at the time of purchase from the original supplier. Subsequently, if the client buys the same as promised, the option would automatically expire and the earlier contract would become binding. However, if the client fails to honor its commitment, then the Islamic bank would be in a position to exercise its option and rescind the purchase contract. Thus, option enables the Islamic bank to shift the above risk to its original supplier. It is also quite realistic that the Islamic bank may have to forgo a part of its profits since, the original supplier may charge a higher price in case of the sale with option as compared to a sale without option. This is ethically justifiable since, the original supplier is now exposed to greater risk, and also Islamically valid as long as price is inclusive of the compensation for risk.

It is not difficult to see the usefulness of *khiyar al-shart* for managing risk in financial markets, such as, the stock market, characterized by volatile prices. As stated in section 2.5 the economic rationale of conventional options is believed to be their potential use as a hedging or risk management device. For instance, individual A plans to buy (sell) stock X after a time period of three months. He may be adversely affected if price moves up (down) during this time period. The risk due to price movement could be hedged by purchasing a call (put) with a given exercise price of say, \$ 50. The price paid for the option, say, \$ 5 is in the nature of a cost of insuring against adverse price fluctuations. At the end of three months, even if price moves up to \$ 60 (down to \$ 40), individual A is not affected since, it can buy (sell) at the exercise price of \$ 50. While this is true, the fact remains that this contract can be used for speculation. We have demonstrated this possibility in section 2.5 with the same example. Let us now consider an alternative scenario in

the *khiyar al-shart* framework. Individual A can now enter into a purchase (sale) contract and stipulate a condition of option for itself for a period of three months. The delivery of price (stock X) can now be deferred till expiry of three months. At the end of three months, if price of stock X moves up (down) then it can confirm the contract of purchase (sale) at the known contractual price and thus be immune from price risk. However, if the price of stock X moves down (up) then individual A can rescind the contract and purchase (sell) in the market, thereby not losing the profit potential. Thus, the *khiyar al-shart* may provide a benefit for the party holding the option at the cost of the counterparty. However, the disadvantage caused to the counterparty can be compensated in the form of higher contractual price or *thaman* and need not be paid separately upfront to the counterparty. It is this feature that provides an effective curb on speculating on price differences and thus, differentiates Islamic options from conventional ones.

In case of *ijara* financing too, some risk factors can be easily shifted or shared with stipulations of options. One common risk factor inherent to *ijara* financing is the risk of finding an alternative use of the asset, of locating a new client, where the lease period is shorter than the economic life of the asset. There is also the risk of the asset becoming obsolete and the uncertainty about realization of salvage value in the absence of an active secondary market for assets. This risk can be shared between the Islamic bank and the lessee by providing an option to either or both parties to confirm or rescind the contract after a certain time period.

In long-term banking relationships, an Islamic bank is supposed to finance not only the acquisition or leasing of fixed assets, but also the recurring working capital requirements. One alternative for financing working capital, such as, purchase of raw materials and merchandise is through *murabahah*. The Islamic bank in this case would procure raw materials on a recurring basis and supply the same to the client-company. For sale of each consignment to the client-company, a separate *murabahah* contract may be entered. Under this arrangement, volatile prices would not constitute a source of risk for the bank, though the client-company would be exposed to such risk as its cash outflows due to raw material purchases would now be volatile. An alternative financing mechanism for repeated purchases from a single supplier in the Islamic framework is known as *bai-istijrar*. The difference between *bai-istijrar* and *bai-salam* relates to whether purchases are made from a single and regular seller or not.<sup>38</sup> In the former case, it is considered as *bai* or *bai-ajil* where payment of price (*thaman*) can be deferred. In the latter case, price (*thaman*) must be paid by the buyer at the time of contracting. With *bai istijrar*, however, the Islamic bank is exposed to price risk, since the contractual price (*thaman*) is set at the time of entering into the contract or beginning of the financing period. If market price of the commodity to be supplied increases subsequently, then the Islamic bank would clearly be at a disadvantage. While its

---

<sup>38</sup> Umar (1995), pp. 19-62.

cash inflows due to sales to the client-company would remain fixed, the outflows in the form of payments to the original supplier would increase. The client company in the case bears no price risk, its outflows being fixed for the entire financing period. However, it may still be at a disadvantage if prices decline subsequently during the financing period, as its outflows would have been smaller under *murabahah*. What is clear, is that in extremely volatile markets, entrepreneurial activity would be badly affected in the absence of any mechanism for the parties to manage their risk.

The admissibility of options in case of *bai-istijrar* follows from its being different from *bai-salam* as discussed above. We may now consider the case of *istijrar* with options for either or both parties. Since the client-bank would take possession of the new materials and perhaps put the same to use in stages, it would be required to pay the value of the raw materials in case the contract is rescinded eventually. In case the contract is confirmed later, then the settlement price would be same as the contractual price (*thaman*). Since the contract would be rescinded if either of them rescinds even if the other party confirms the same, it is expected that the parties would be able to protect themselves against extreme adverse price movements. For example, if the seller holds the option, then it would not rescind the contract if it expects the contractual price to be higher than value which would perhaps closely approximate the average of daily market prices (assuming that the client-company goes for daily purchases and possession of the raw materials from the Islamic bank).

One can also see a possible scenario where the stipulation of options in the *istijrar* contract is designed to take care of only extreme movements, that is, the options get activated only when the market price pierces a bound. This possibility seems to be acceptable in the light of the clearance given to some Islamic banks by their respective *Shari'ah* Boards.<sup>39</sup> The bank's option would get activated if price pierces an upper bound and the client's option would get activated if the price pierces a lower bound.

---

<sup>39</sup> This feature of options is found in some recent cases involving Islamic banks. In the case of a recent sale of stocks by the Dar Al Maal Al Islami group, the purchaser of stocks of Al Faysal Investment Bank Limited (AFIBL) holds an option under which it can sell the stocks back to a DMI subsidiary at a specified price at the end of a stipulated time period (end of the year 1998). The option would be canceled if the stocks purchased would appreciate by more than twenty per cent for twenty-one consecutive days during the last two years prior to the expiry of the option (Source: *Annual Report* of Dar Al-Maal Al-Islami Trust (1994), p.31).

Another interest case is that of *istijrar*, being used by the Muslim Commercial Bank, Pakistan which is almost same as the one we develop. There are apparently some differences, if one goes by the report published in *New Horizon*, April 1996, p.20. This, however, could not be verified from MCB sources.

We are now in a position to describe the modified *istijrar* contract with options as a financial instrument and examine some pertinent issues relating to this instrument. Wherever necessary, we rephrase some feature without affecting the contract *per se*. The contract is thus a case of *bai* with options for both the buyer and seller which are activated if the market price pierces an upper or lower bound respectively, during the financing period. The option provides a right to a party to fix the sale price at the average of the market prices prevailing during the financing period. Note that average of market price reflects the “value” or market price of the commodity as on the date of the buyer’s taking possession of the same. This perfectly fits with the Hanafi position of determination of “value” as discussed in section 3.1 above. If the options do not get activated or are not exercised, then the price is settled at the predetermined contractual price. Both the client-firm and the bank agree on a public undisputed source of price information and also a sampling interval for observing prices. The average price is calculated from these observations.

#### 4. ANALYSIS OF *ISTIJRAR* WITH *KHIYAR AL-SHART*

*Istijrar* with *khiyar al-shart* for both parties as described above is a complex instrument, which has some similarities with certain tradition financial engineering products, such as, the average price (Asian) option, barrier option, and range forward contracts. All these financial innovations pertain to transactions in currencies although these could also be used for commodity or stock transactions.

Asian or average price option is a contract where the pay off depends on the average price of the underlying asset during the life of the option. The payoff from an average call is  $\max(0, \text{pavg}-P^*)$ , and that from an average price put is  $\max(0, P^*-\text{Pavg})$ . In this framework, Pavg is the average price and  $P^*$  is the strike price. It may be noted that in case of *istijrar*, the pay off for the Islamic bank is same as for an average call (even though the bank is the seller and a call option is a right to buy) and that for the client-firm is the same as for an average put (even though the client firm is a buyer and a put is a right to sell) where  $P^*$  is the contractual price (*thaman*). This apparent contradiction is because the options in our framework imply an option to rescind the contract; and disappears once we consider the implications of options for the parties in terms of pay-offs. Barrier option are of several types. But the ones similar to *istijrar* are down-and-in options and up-and-in options. In a down-and-in option, the option feature gets activated only if some lower barrier is crossed prior to option expiration. In an up-and-in option, the option feature gets activated only if some upper barrier is crossed prior to option expiration. The *istijrar* contract combines the features of an average rate (Asian) option, a down-and-in put, and an up-and-in call.

It may be noted that the above options appear as features in *istijrar* involving a real and physical transaction, and not separate contracts in themselves. If the

options are separate contracts which are fully transferable, there is a possibility of speculation on the direction of price movement. For example, consider the case of an up-and-in call on the price of a specific commodity with an upward barrier at  $P$  and exercise price  $P^*$  ( $P$  naturally is greater than  $P^*$ ). If an individual expects prices to cross  $P$  before the maturity date and remain above  $P^*$  on the maturity date, it would buy this contract. If its expectation materializes, its gain would equal the difference between the price prevailing on the maturity date and the exercise price minus the call premium. Its losses are however, limited to the call premium in case its expectation does not materialize and the option expires worthless. Such a scenario is likely to encourage individuals to speculate and benefit from the price differences which is against the norms of Islamic ethics. *Istijrar*, however, does not allow any rooms for controversy as the options are embedded in the contract and are not tradable in themselves. The contract does not allow for any kind of speculative gain as it is backed by a real purchase, ownership and sale of a commodity.

*Istijrar* may also be compared with another financial innovation- the range forward. The latter is a simple extension of a forward contract and can also be seen as a combination of a call and put option. In a range forward, there is no single forward price as in a simple forward contract. Rather, there is a "range" for the forward prices. In the context of commodity transactions, a contract may, for instance, stipulate that the buyer would buy the given commodity from the seller at a price ranging from  $P_1$  to  $P_u$ . This also implies that independent of the spot price, the buyer has the right to buy from the seller at ceiling price  $P_u$  (seller has the corresponding obligation to sell at  $P_u$ ) and the seller has the right to sell to the buyer at floor price  $P_1$  (buyer has the corresponding obligation to buy at  $P_1$ ). Thus, similar to simple forward contract, both the parties have rights and obligations to transact. The difference is that the rights and obligations to transact are not a unique forward price, but different forward prices.

Range forward, like the simple forward contract, may not be Islamically permissible, primarily because, it allows both the parties to make speculative profits from price differences and is essentially a zero-sum game. For example, if on maturity, spot price happens to be above  $P_u$ , say  $P_s$ , then the buyer would make a profit of  $P_s - P_u$  by exercising its right to buy at  $P_u$ . The loss to the seller would be the same. Converse would be the case if on maturity, spot price falls below  $P_1$ . The possibility of speculation however, is reduced as compared to a simple forward where there is a single forward price for both the buyer and seller. In case the spot price remains within the band then both the options expire without being exercised.

*Istijrar*, like a range forward, also has a combination of a call option and a put option. However, unlike a range forward, the parties are not in a position to speculate on the direction of prices and take the price differences. It is this

constraint on speculation that distinguishes *istijrar* from the traditional financial engineering products and makes it conform to norms of Islamic ethics.

#### 4.1 Implications of *Khiyar al-Shart*

Let us consider the case of *khiyar al-shart* for the Islamic bank first. The Islamic bank would exercise the option to rescind the contract and fix settlement price at the average level if it expects the price increase (after it has risen above the upper bound) to continue. Let  $PS_1, PS_2, PS_3 \dots PS_n$  be the expected price series for the seller-bank. The option would be exercisable in time period  $t$  if  $PS_t$  is above the upper bound, say  $P\text{-cap}$ . If the bank exercises the option, sale price would be fixed at the average price  $P_{avg}$ . Whether the option would be exercised, depends again on the nature of change in the bank's expectation. If the bank expects that beyond time period  $t$ , prices would keep going up which would imply that the average of the prices during the entire time period would be driven up and would be higher than  $P^*$ , then the bank would be better off by exercising the option. However, if the bank expects that prices would fluctuate randomly and the increasing trend in prices would not persist then, he would be better off either confirming the contract or by not exercising the option to rescind. The condition for exercising the option to rescind is : Expected value of the price distribution  $PS_{avg} > P^*$ .

Now let us see what would happen if prices fall below the lower bound. The buyer-firm would exercise the option to rescind the contract and fix sale price at average price if it expects the price decline (after it has fallen below the lower bound) to continue. Let  $PB_1, PB_2, PB_3 \dots PB_n$  be the expected price series for the buyer. The option would be exercisable in time period  $t$ , if  $PB_t$  is below the lower bound, say  $P\text{-floor}$ . If the buyer exercises the option, sale price would be fixed at  $P_{avg}$ . Whether the option would be exercised, depends on the nature of change in the buyer's expectations. If the buyer expects that beyond time period  $t$ , prices would keep moving down which would imply that the average of the prices during the entire time period would be driven down and would be lower than  $P^*$  (the contractual price), then the buyer would be better off by exercising the option to rescind. However, if the firm expects that prices would fluctuate randomly and the declining trend in prices would not persist then, he would be better off either confirming the contract or by not exercising the option to rescind. The condition for exercising the option is " Expected value of the price distribution  $P_{avgB} < P^*$ .

It also follows from the above analysis that the level of the contractual price  $P^*$  is a crucial parameter of the contract. Given the expected distribution of prices,  $P^*$  would also determine whether the options would be exercised by any party. Generally,  $P^*$  would depend on the market price prevailing at time period zero, plus a minimum predetermined return as in case of a *murabahah* contract.



The other crucial decision variables in designing the contract are the upper bound, P-cap, and the lower bound, P-floor, as these have wide implications for the Islamic bank and the firm. The level of P-cap determines whether and when the Islamic bank would have the option. If P-cap is fixed at a fairly high level, and price fluctuates in a narrow range, then the bank would not be in a position to exercise the option and hedge against moderate price increases. It would be in the interest of the bank and against that of the firm to fix the upper limit at a low level. The situation is symmetrical for the lower limit P-floor. If P-floor is fixed at a fairly low level, then the firm would not be in a position to hedge against moderate price declines. It would not have any option if price fluctuates in a narrow band and does not pierce the low P-floor. It is therefore, in the interest of the firm and against that of the bank to fix P-floor as high as possible.

Setting the value of P-cap and P-floor thus, involve a conflict of interest. It is quite easy to conclude that the decision would be dependent upon the relative bargaining power of the buyer-firm and the seller-bank. In the interest of equity, however, the parties must share risk in a just manner and no single party should be in position to tilt the balance in its favor. In other words, value of the option for the bank must equal the value of option for the firm at the time of entering into the contract. For every P-floor, it would be possible to derive a P-cap where this equality holds good.

#### **4.2 Valuation of *Khiyar al-Shart***

As already pointed out the option to the Islamic bank is in the nature of an up-and-in call and the option to the firm is in the nature of a down-and-in put. Further the options are in the nature of average price (Asian) options. The value of these options to both the parties must be equal. We arrive at the condition for equality using the standard valuation approach suggested by Cox, Ross, and Rubinstein (1979) that assumes that the underlying price follows a multiplicative binomial process.<sup>40</sup> Here it may be noted that the traditional models attempt to compute value of an option with the objective that the option would be priced accordingly in the market. We have no such objective and hence, the exercise does not violate the Islamic norm that options should not be priced and be the subject of sale. Our only objective is that the worth of the options granted to both the parties should be the same and we use the valuation models for this purpose alone.

The parameters that determine the value of a barrier option are as follows. For an up-and-in call its value is directly related to the current market price. The higher the current market price, the greater is the probability that price would cross the upper bound and would remain above the exercise price on the due date. For the same reasons, value of the up-and-in call is also inversely related to exercise price,

---

<sup>40</sup> Cox John C., Stephen A. Ross, and Mark Rubinstein (1979), pp. 229-263.

and also to the upper bound. The case for a down-and-in put would be opposite. Its value would be inversely related to the current market price and would be directly related to the lower bound. The other parameter which one finds in the conventional models, is the interest rate. However, since we are assuming an Islamic financial system, interest rates would either cease to exist or would have no impact on option values for an Islamic investor.

Lastly, volatility also has a direct impact on all option values. It may be noted that since we are considering the case of average price options, the volatility measure needs further adjustment. The exact relationship between the volatility of an ordinary European option and that of the average price option depends upon the frequency with which price observations are collected for averaging. If the average is calculated from daily observations, the volatility of the average rate option is 57.85 percent of the corresponding European option volatility. This can be easily derived as follows:

In case of the European option, the price variable is always a stochastic variable while in case of the average price option, a larger and larger part of the variable (average price) becomes non-stochastic as time passes. Let  $P$  be the random price variable and  $\sigma^2$  be the annual variance. The variance for the first day is  $\sigma^2 (1/365)$  same as for the European option as the variable is same for both the options. At the end of the first day the price will be observed and this will serve as the first point to calculate the average. On the second day the random variable for average rate option is no longer  $P$ , but  $(364/365)P$  with a variance of  $(364/365)^2 \sigma^2 (1/365)$ . The daily variance will continue to decline and on the last day would be  $(1/365)^2 \sigma^2 (1/365)$ . Averaging all the daily variances and comparison with the daily variance for the corresponding European option yields the above result.

Apart from the volatility effect, the averaging process introduces an interest rate effect, which is irrelevant in our framework. Hence, once the averaging effect is captured in the volatility measure, the modified measure is taken into account in the model to value the barrier options.

We also assume that upper bound is higher than the exercise price which is again higher than the lower bound. J Orlin Grabbe (1996) follows the Cos, Ross, and Rubinstein approach and provides C code for numerical pricing of barrier options.<sup>41</sup> Decoding the same and assuming a zero interest rate we find the value for an up-and-in call and a down-and-in put. The assumption of a zero interest rate greatly simplifies the model. We use the following notations.

---

<sup>41</sup> For the valuation technique of barrier options in C-code, see J. Orlin Grabbe (1996), *International Financial Markets*, Englewood Cliffs, Prentice Hall, pp. 205-211.

$S$  = current market price  $K$  = exercise price  $H$  = upper bound  
 $L$  = lower bound  $\sigma$  = volatility measure

The value of an up-and-in call  $V_c$

$$= S * N(d1) - K * N(d1 - \sigma\sqrt{t}) - H * N(-d2) + S * K / H * N(-d2 + \sigma\sqrt{t}) \\ + H * N(d1 - \sigma\sqrt{t}) - S * K / H * N(d1) - S / H * N(d1)$$

where

$$d1 = [\log(S/H) / \sigma\sqrt{t}] + [\sigma\sqrt{t}/2] \\ d2 = [\log\{(H * H) / (S * K)\} / \sigma\sqrt{t} + [\sigma\sqrt{t}/2] \\ N(x) = \text{value of the standard normal distribution for } x$$

The value of a down-and-in put  $V_p$

$$= - S * N(d3) + K * N(-d3 + \sigma\sqrt{t}) + L * N(d4) - S * K / L * N(d4 - \sigma\sqrt{t}) \\ - L * N(-d3 + \sigma\sqrt{t}) + S * K / L * N(-d3) - S / L * N(-d3)$$

where

$$d3 = [\log(S/L) / \sigma\sqrt{t}] + [\sigma\sqrt{t}/2] \\ d4 = [\log\{(L * L) / (S * K)\} / \sigma\sqrt{t} + [\sigma\sqrt{t}/2] \\ N(x) = \text{value of the standard normal distribution for } x.$$

As discussed earlier,  $V_c$  and  $V_p$  must be equal in the interest of equity and justice. To take an example, we initially assume that the current market price ( $S$ ) is 100, the exercise price ( $K$ ) is 120, the upper bound ( $H$ ) is 150, the lower bound ( $L$ ) is 90 and the volatility measure is 0.25. Given this we compute  $V_c$  to be 6.567 and  $V_p$  to be 21.63. Thus, there is a wide disparity between the option values and the contract is titled in favor of the client firm. When the upper bound is reduced to 125,  $V_c$  rises to 11.962, the disparity is reduced. Similarly when the lower bound is reduced to 75,  $V_p$  decreases to 12.691 and is equal to  $V_c$  when the lower bound is further reduced to 74 approximately.

When the deal is structured by the seller bank, it may prefer to fix the upper bound for itself taking into account the price risk it is willing to bear. As noted earlier, lower the upper bound, the lower is the price risk. And lower the upper bound, higher would be  $V_c$ . The equality condition would demand that  $V_p$  is also higher.  $V_p$  would be higher, given the values of other parameters, only when the lower bound is higher. Consequently, price risk to the buyer-firm would also be lower. For every value of the upper bound, there would be a corresponding lower bound where equity is ensured.

## 5. SUMMARY AND SUGGESTIONS FOR FUTURE RESEARCH

Islamic scholars and economists are involved in a continuous process of designing and developing new financial instruments and finding innovative solutions to financial problems within the Islamic framework. This is important, since many of the traditional financial engineering products, such as, the conventional options or products with embedded options may not be permissible. A major justification for financial engineering is provided in terms of the need to manage risk. It is indeed a challenge for Islamic researchers to demonstrate that risk management solutions do exist in the Islamic framework. Researchers in the recent past have focused on this problem from various perspectives. For example, a recent study<sup>42</sup> examines the distortions that inflation creates in the balance sheet of an Islamic financial institution and suggests the possibility of hedging against purchasing power risk by matching the receivables in price-deferred sales against object-deferred purchases. A similar framework using a “netting” mechanism and/or using financial contracts with embedded options may be examined for management of price risk and currency risk by Islamic banks. Another promising area of research may relate to management of default risk in the Islamic framework. This may involve a provision of option to the lender or lessor to convert what is due to itself or even the leased asset into an equity contribution in the borrower or lessee firm. The convertibility option has a *fiqhi* basis too. This certainly opens up a host of exciting possibilities which merit serious attention of researchers.

In this study we have restricted ourselves to an investigation of the permissibility of conventional options in the light of various *fiqhi* issues. We conclude that options as independent contracts may not be suitable forms of hedging or managing risk, the primary reason being that these are not *shari’ah*-nominate contracts. Further, these can be used for speculating on price movements and generate unearned income, which violates Islamic norms of financial ethics. At the same time, the problem that confronts every participant in various markets, such as, the commodity, securities, and currency markets arising out of volatility in prices may be tackled by designing instruments of risk management in the Islamic framework of *khiyar al-shart*. We also show that this tool of risk management cannot be used for speculating on price differences.

The potential of Islamic options is vastly untapped. While discussing several possible uses of *khiyar al-shart* for risk management, we also analyze and demonstrate how a specific contract can be designed by combining *bai-istijrar* with *khiyar al-shart*. The possibilities discussed in the paper are, by no means, exhaustive. In the framework of *khiyar al-shart*, may lie some interesting solutions to financial problems that need to be explored further.

---

<sup>42</sup> Tariqullah Khan (1996).

APPENDIX - I<sup>43</sup>

**Option from Defect (*khiyar-al-ayb*):** It refers to the right of a buyer on discovery after taking possession of the article, of a defect in the purchased article, which existed at the time of the sale. The buyer has the option of either retaining the article on payment of the full contracted price (*thaman*), or of canceling the contract. The buyer does not however, have the right to retain the article and exact compensation from the seller owing to the defect. The compensation can be demanded only when the defect is discovered subsequent to any alteration in the article so that the same is not returnable in original condition to the seller. Further, anything that causes a decrease in the value and consequently in the market price, is deemed to be a defect and the mode of ascertaining the existence of a defect is by consulting with the valuation experts.

**Option of Inspection (*khiyar-al-ruyat*):** It refers to the right of a buyer of an unseen commodity to reject the same on inspection. This option is justified by the Hanafi scholars on the basis of a saying of the holy prophet “whosoever purchases a thing without seeing it, has the liberty of rejection after sight of it”. The Shafiis however, do not find it permissible on the ground of uncertainty about the subject of sale. The liberal position of the Hanafi scholars is also due to a belief that the uncertainty is not a source of potential conflict between the parties. Such options are relevant in contracts, such as, *istisna*, or *bai-ghaib*.

**Option of Determination (*khiyar-al-tayeen*):** It implies a right that a buyer of multiple homogeneous articles may hold to stipulate a time period before making a choice of one of these. This is a case of option under uncertainty about the subject of exchange. According to the Hanafis, such an option is permissible if it involves a choice out of not more than three articles. The maximum option period according to Imam Abu Hanifa is three days. Imam Abu Yusuf and Imam Muhammad do not accept the upper limit on option period as discussed earlier. The Shafiis do not find such option permissible because of uncertainty about the subject of sale. The limited flexibility provided by the Hanafi scholars is on grounds of necessity (*darura*). It may be noted that only one of the article taken into possession by the buyer is the subject of sale, the other two would be deemed as deposits (*amanah*) and would be governed by the law of deposits.

**Option of Meeting/Acceptance (*khiyar-al-majlis*):** This may be defined as the right of each of the parties to the contract of withholding their acceptance, after the offer has been made by the counterparty until the meeting (*majlis*) breaks. According to the Hanafi school of thought, the option of acceptance (*khiyar-al-majlis*) would remain in force till the meeting breaks, only if such a condition is stipulated in the contract. The option of acceptance would, in effect, mean the

---

<sup>43</sup> *The Hedaya: Commentary on Islamic Laws*, translated by C.T. Hamilton, pp. 253-256.

option of one party to change the terms of offer before the counterparty accepts the same. According to the Shafii school, the option of acceptance (*khiyar-al-majlis*) would continue to remain in force even after the terms have been accepted by both the parties and the contract is complete, till the meeting breaks as the same is directly inferred from the traditions. The Hanbali view is similar to the Shafii view. According to the Maliki view, however, there is no such thing as option of acceptance (*khiyar-al-majlis*). In this way, their position is similar to the Hanafi view that there is no option of acceptance (*khiyar-al-majlis*) once the contract is concluded. However, unlike the Hanafis, the Malikis assert that the contract would become invalid if the parties stipulate a condition of option of acceptance (*khiyar-al-majlis*).

### REFERENCES

- Abd al-Qadir, Ali (1402/1982), "Taqib ala Ray al-Tashri fi Masail al-Bursah", *Al-Mawsuah al-Ilmiyyah wal-Amaliyyah lil-Bunuk al-Islamiyyah*, Vol.5.
- Abu Sulayman, Abd al-Wahab Ibrahim (1413H/1992), "Al-Ikhtiyarat: Darasah Fiqhiyya Tahliliyyah Muqaranah", *Mujallah al-Buhuth al-Fiqhiyyah al-Muasarah*, Vol 4, No.15.
- Ahmad, Shaikh Azmi (1996), *Islamic Investment Study Group: A Report*, Malaysia: Securities Commission.
- Attia, Gamal (1987), "Islamic Financial Instruments" *Islamic Banking and Finance*, (ed.) Butterworth Editorial staff, Butterworth.
- Cox, John C., Stephen A. Ross, and Mark Rubinstein (1979), "Option Pricing: A Simplified Approach", *Journal of Financial Economics*, Vol.7.
- Edge, Ian (1988), "Sharia and Commerce in Contemporary Egypt", *Islamic Law and Finance* (ed.) Chibli Mallat, London: Graham and Trotman.
- El Gari, Mohamed Ali (1993), "Towards an Islamic Stock Market", *Islamic Economic Studies*, Vol.1 No.1.
- Grabbe, J. Orlin (1996), *International financial Markets*, Prentice Hall: Englewood Cliffs.
- Hasan, Ahmad Muhayyuddin (1407/1986), *Amal Sharikat al-Istithmar al-Islamiyyah fil suq al-Alamiyyah*, Al-Dar al-Saudiyyah lil-Nashr wal Tawzi.
- Jaziri, Abd al Rahman, al- *Kitab al Fiqh ala Madhahib al Arbaah, Kitab al-Bai*, Vol.2.

- Jundi, Muhammad al-Shahat al- (1409/1988), *Muamalat al-Bursah fil Shari'ah al-Islamiyyah*, Cairo: Dar al-Nahdah al-Arabiyyah.
- Kamali, Mohammad Hashim (1995), *Islamic Law : An Analysis of Options*, Paper presented at the Conference on Interest-free/Islamic Banking Products held at the Institute of Islamic Understanding, Malaysia on December 21.
- Khan, Tariqullah (1996), *An Analysis of Risk-Sharing in Islamic Finance with Special Reference to Pakistan*, Ph.D. dissertation submitted to the University of Loughborough, UK.
- Marghinani, al- *Hedaya: Sharh Bidayat al-Mubtadi*, translated by C.T. Hamilton.
- Nawawi, al- *Minhaj al-Talibin*, translated by E C Howard
- \_\_\_\_\_, *Al-Majmu Sharh al-Muhadhab*, Vol.9.
- Qaradawi, Yusuf al- (1393H/1973), *Shari'ah al-Islam Salihah lil-Tatbiq fi Kull Zaman wa Makan*, Dar al-Sahwah.
- Sulayman, Ahmad Yusuf (1402/1982), "Ray al-Tashri fi Masail al-Bursa", *Al-Mawsuah al-Ilmiyyah wal-Amaliyyah lil-Bunuk al-Islamiyyah*, Vol.5.
- Umar, Mohammad Abdul Halim (1416H/1995), *Shari'ah, Economic and Accounting Framework of Bay al-Salam in the Light of Contemporary Application*, Research Paper No.33, IRTI/IDB.
- Usmani, Mufti Muhammad Taqi (1996), "Options, Futures, Swaps, and Equity Investments", *New Horizon*, June.