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Sharia Compatible Futures

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ABSTRACT. A Sharia Compatible Future (SCF) is a contract that is designed to achieve the objectives of the conventional futures contract and to be in conformity with Islamic transaction restrictions, which means that the essence as well as the object of the contract must satisfy the Sharia code. This implies the prohibition of interest futures. Currency futures must observe the Islamic restrictions of currency transactions, and the institutional setting must enforce the Islamic ethics and must devise a means to prevent gambling in the Islamic futures market. A future is one type of derivatives used to manage risk. It is a very efficient instrument to hedge risks and is used by businesses as well as financial institutions to bring their exposure to risk to an acceptable level. In this article, Sharia compatible futures are developed. The economic functions of futures and the rationale for hedging is also discussed. Islamic literature on futures and the Sharia position with regard to hedging are analysed. Sharia compatible futures are then suggested.

1. Introduction

A conventional futures contract involves commitment to deliver, or to take delivery of a specified quantity of some asset or commodity at a particular future date and at a price determined at the time of contracting. This description also fits a forward contract. Futures contracts are distinguished from forward contracts in that, futures contracts are standardized, regulated and traded in an organized exchange with a special institutional setup. They also can be liquidated and so, they acquire all the features of a liquid financial asset.

The suggested Sharia Compatible Futures (SCF) are contracts designed to achieve the objectives of the conventional futures contract and to be in conformity with Islamic transaction restrictions, which means that the essence as well as the object of the contract must satisfy the Sharia code. This implies prohibition of interest futures. Currency futures must observe the Islamic restrictions of currency transactions, and the institutional setting must enforce Islamic ethics and must devise a means to prevent gambling in the Islamic futures market.

2. The Economic Functions of Futures Market

a) Hedging:

Hedging is defined as an insurance activity aimed to protect an asset from adverse change, which can be an unexpected and undesirable change in the value of an asset, at the lowest cost.

Hedgers who have preexisting exposure can use futures transactions as a substitute for the cash market. So, hedging is considered the prime social rationale for future trading. Over the last decades, the world economy has witnessed structural shifts and fundamental changes such as:

- the adoption of the floating rate of exchange system and the monetary policy's target, change from interest rate to money supply.

- the increase in world trade and globalization of commerce, which increases the exposure of firms to various financial risks.

The above fundamental changes cause dramatic increases in the volatility of interest rates, exchange rates, equity and commodity prices which in turn necessitate risk management industry.

Since the beginning of the 70's, financial risk management has become a tool essential to the survival of all businesses, including firms, industrial corporations, banking institutions.

The survey of the Group of Thirty (1993) showed that 82 percent of the private sector nonfinancial corporations used derivatives to hedge the risk they are facing, and 84 percent of financial institutions used derivatives to hedge risk, arising from new finance.

b) Price Discovery:

Futures markets provide a mechanism for the market agent to form expectations about future spot prices. As futures prices change continuously, they cannot always equal the subsequently observed spot price, but futures prices could be an estimate of the expected future spot price. If the futures price is an unbaised estimate of the future spot price, we would expect futures prices changes to equal zero-average in the long run. Imperical studies such as Rockwell (1967), Dusak (1973), Raynauld and Tessier (1984), Boxter et al (1985), Ehrhard et al (1987), Kolb (1992), and Deaves and Krinsky (1995), indicated that the rejection of equality of futures price with the expected future spot price is not strong, which means that the futures price may be the best readily available estimate of future spot price.

As an example of price discovery and its benefits, consider an oil producer who is trying to decide whether to reopen a marginally profitable oil well. His decision will depend on the oil price. However, the oil producer must make the decision today and the oil will not be ready for the market until after around 12 months. While the oil price, 12 months from now, cannot be known with certainty, the price quoted in the futures market for oil futures that expires in 12 months, can be a very useful estimate of the futures price. If the futures price of the oil is high enough to justify operating the oil well again, the oil producer can assume that he can obtain the futures price for the oil when it becomes available in 12 months. Here the oil producer has used the futures market as a vehicle of price discovery. Thus, economic agents can use future market estimates of futures cash prices to guide their consumption or production decisions, and this reduces the uncertainty and increases the rational for their decision.

c) Cash Price Stability:

Despite the allegations that futures trading makes prices for the underlying good more volatile, the price discovery function of the futures markets tends to stabilize cash market prices by reducing its volatility. This is confirmed by the studies on the effect of futures trading on cash markets. Comparing the volatility of the cash market before and after the introduction of futures trading, Moriarty and Tosini (1988), Froewiss (1978), Taylor and Leuthold (1974) and Powers (1970), found that futures trading did not increase cash prices but it stabilized them. Figlewski (1981) found that futures trading accompanied an increase in the mortgage market volatility, but Working (1960) found that cash prices volatility declined after futures trading began. We can conclude that the weight of evidence seems to suggest that futures trading does not increase the volatility of the cash market and does not destabilize it.

3. Understanding Risks

The essence of business is risk taking. Any commercial process involves a series of functions with different levels of risk; there is no risk-free enterprise.

An essential function of management is to identify the principal risks to which the business is exposed, to understand the level of risk that the corporate culture is willing to bear, and to decide and regularly review the nature and extent of risks the business is prepared to take. The attitude of the corporate toward risk can be risk-averse or risk – oriented, but must be pinned down to a clear strategy. Identification of risk is a prerequisite to the development of a clear strategy and this is a prerequisite for the successful management of the level of risk inherent in its activities (Crawford and Sen, 1996).

Primary Risks

There are risks that must unavoidably be accepted as part of the decision to enter a particular type of business. To hedge these risks would be the same as deciding

to go out of business. For the corn trader who buys corn at harvest time, stores it and sells it later, the variation in the price of corn during the course of the year constitutes a primary risk, which cannot be avoided without eliminating the potential profit from the business as well. But for the corn distributor the price risk is no longer an avoidable primary risk and could be hedged away, but he has a different primary risk. As he is involved in the cost of creating a network of stores for distribution, he unavoidably faces the risk that the stores may fail to be profitable.

Nevertheless primary risks could be moderated. For example, the corn trader could sell part of his corn forward. By doing that he has not hedged away his entire primary risk, but has mitigated the effect of a disastrous fall in market price.

The thing which must be realized about primary risks is that for most business enterprises, primary risks constitute a complex package of risks and cannot be easily isolated. This package is constantly changing as the managers shift strategies and tactics, trying to take advantage of a competitive business environment.

Secondary Risks

There are risks that come with a business along with the package of primary risks. These risks can be eliminated or hedged through financial derivatives or other instruments or contracts, and this would enable the business to improve its flexibility in managing the primary risks.

Business Risks

There are several types of risk which can be encountered when a company is conducting business, among them are:

a- Market risk:

This arises when market factors such as changes in exchange rates, interest rates, equity prices and commodities prices, cause a change in the price of goods or services offered by the business.

b- Credit risk:

This occurs when the other party defaults on a contract. Assessing the potential cost of replacing a transaction at some future date is difficult, but past experience can be used to estimate it.

c- Operational risk:

This is the risk of running a business. It may occur for the following reasons among others: inadequate systems, insufficient management control, insufficient human control, management failure, and criminal acts.

Legal Risk

This occurs when a company encounters the risk of punitive legal action due to default on a contract. This risk can arise from insufficient documentation, insufficient capacity, uncertain legality and unenforceability following bankruptcy or insolvency.

Liquidity Risk

This occurs when a company's cash-flow position does not enable it to meet payment obligations on the due date.

The Rationale for Not Hedging Risk

After identifying the types and sources of risks, and understanding the level of risk that the corporate culture is willing to bear, the company may decide, in its risk management plan, not to moderate the primary risks and/or not to hedge the secondary risk.

The company's justification for its decision might be as follows:

- *The risks involved in using financial derivatives to manage the perceived existing business risks are greater than the original exposure.*

- *It is not cost effective, since the cost of managing the risk is greater than any financial loss which the original risk can reasonably be expected to incur.*

The Rationale for Hedging Risk

Evaluating risk is a dynamic process. The package of core risks is continuously changing so every risk in the package must be continuously and rigourously tested, before deciding whether to eliminate, hedge or accept it as part of the core risk of the business. The process of analyzing and identifying the core risk package can be done through the top-down method, in which the senior management decides on the core risk package and communicates this throughout the firm, and the bottom-up method where a lower level in the organization identifies the potential risk, and communicate that to the top management.

Having identified the core risk package and decided that risks must be hedged, financial derivatives are the most well-known products for hedging as they curtail risk by providing financial coverage to ensure that any exposure can be confined and managed.

Developing a strategic approach to manage the core risks can add considerable value to a company for the following reasons: (Briys et al., 1998).

a- Risk management tends to stabilize cash-flow. With a stable cash-flow, a company may trade at a premium relative to their more volatile peers. Hedging avoids company earnings surprises and reduces the likelihood of bankruptcy or failure.

b- Hedging tends to enable companies to avoid deferring investment when cash-flows fall and to have long-term investment strategies. This inevitably boosts the value of the company.

c- Hedging tends to unbundle risks. Companies can eliminate the secondary risks and focus on primary risks which they have the market capacity to handle.

d- Hedging tends to reduce the volatility of cash flows. This will improve the credit rating of the company and increase its debt capacity.

e- Hedging policies extend benefits to different groups, such as creditors who fear default. It improves employment prospects and conditions for employees and assures customers who are interested in stable product prices.

Hedging through Derivatives

Derivatives are widely used to hedge a variety of risks. The Group of Thirty (1993) reported in its survey of the private-sector nonfinancial corporations using over the counter instruments (OTC) that 87 percent of them used interest rate swaps, 64 percent used currency swaps, 78 percent used forward foreign exchange contracts, 40 percent used interest rate options and 31 percent used currency options. In response to how they hedge the risks they face, 82 percent indicated they used OTC derivatives to hedge risks arising from new finance, 33 percent to hedge exposure from foreign currency transactions, 69 percent to hedge foreign exchange transaction exposures, 78 percent to manage or modify the characteristics of their existing assets and liabilities. For financial institutions, 92 percent of the respondents used interest rate swaps, 69 percent used forward foreign exchange contracts, 69 percent used interest rate options, 46 percent used currency swaps, and 23 percent used currency options. Derivatives were used by 84 percent of the responding financial institutions to hedge risk arising from new financing, 46 percent to hedge foreign currency transaction exposures, 39 percent to hedge transaction exposures, and 39 percent to offset option positions embodied in the institutions' assets and liabilities.

4. Review of Commentators on Futures

Forwards contracting has existed for many centuries. However futures markets as they now exist, are a fairly recent development. The goal of greater economic efficiency is the driving force behind their development. Futures markets perform

important economic functions: they reallocate risk among those who choose to trade futures contracts, they aggregate and disseminate information about the future course of prices in spot markets to any individual who elects to observe the current futures price, and they stabilize future cash prices.

Since the institutional setting of futures markets are developed in the market mechanism of the capitalist system, which in some of its values and ethics contradict the Islamic norms and values, we cannot expect the futures markets institutional setting to be in full compliance with the Islamic transaction regulation.

Since futures markets functions are legitimate and very essential to the market mechanism in the Islamic system, a reengineering process must be taken to bring the futures markets institutional setting to conformity with Islamic transaction restrictions.

Futures contract was discussed by many commentators such as Khan (1995), Chapra (1992), Khan (1988), Mahmassani (1983), Muhiaddin (1995), Sulayman (1982) and Majma'al Fiqh al-Islami (1989). All the above reject the futures contract, but Kamali (1996) as well as Azzam Azzam, who was quoted by Kamali, do accept futures trading and they call for a fresh response formulated in the light of the operative procedures of futures markets.

The rejections of the futures contract were based on the following grounds:

a- Short selling in futures trading is contrary to Shariah ruling on the item of sale; that the item must exist and be owned by the seller at the time of the contract.

b- Reverse trading in futures markets is contrary to the Shariah ruling that the purchaser may not sell the goods purchased until they are in his possession.

c- In the futures contract, a sale is concluded in which the delivery of goods and its counter value are postponed. This is one form of debt clearing sale (*bay - al - dayn bi aldayn*) which the general consensus is said to have materialized on its prohibition.

Response to the above objections will be addressed in the following sections in the process of developing the proposal for the Sharia Compatible Futures (SCF).

5. Shariah Position on Hedging

In the previous section, it was concluded that the volatility of prices has become a fact of life, and risk management is a prerequisite for businesses to survive as such, and since the maintenance and protection of wealth is a Shariah maxim, then, not

taking measures to protect wealth from certain or near certain risks is violating logic as well as Shariah teachings. According to Shatbi "the likelihood of an act or a thing has the same status as the thing or act itself", quoted by Hassan (1420 H.). Thus, near certain risks can take the status (*Hukm*) of certain risks. Not protecting wealth from these risks can be considered squandering of wealth, which is prohibited in the Quran.

As risks are undesirable and unpleasant events, they can be considered as damage i.e. (*darar*) which must be avoided according to the Shariah maxim "Damage is to be undone" (Majallah Art. 19). So business must not be neutral in facing risks (*darar*), instead they must take all measures to avoid or eliminate it.

If risks cannot be eliminated, they must be reduced through risk management, and this will be done according to the following Islamic legal maxims: "Severe damage (*darar*) is made to disappear by lighter damage" (ibid Art. 26), "The smaller of two harms (*darar*) is chosen" (ibid Art. 28)., "Damage (*darar*) is to be avoided as far as possible" (ibid Art. 30).. From above, we can say that Shariah obliges businesses to take measures to hedge undesirable risks and that hedging can be considered a prime Shariah rationale for use of Islamic forwards or futures contracts.

Sharia Compatible Hedging Contract (SCHC) (Islamic Forward)

SCHC is a binding promise from the buyer to buy and from the seller to sell a generic good of specific quantity on a specific date in the future at an agreed upon price. On maturity, the buyer has to pay the pre-agreed price and the seller has to deliver the asset at the settlement place. In essence it is a forward purchase of a generically described good at an agreed upon price, time and place of delivery.

As the purpose of this contract is to protect the assets against unexpected and undesirable change, the following conditions must be satisfied:

a- Both the asset and its counter value must exchange hands on maturity only.

b- The counter value can be usufruct or matured debt on the day of the settlement.

c- The asset must be generic and not specific.

d- Specifications and attributes, which may affect the price of the asset, must be known and agreed upon.

e- Quantity of the asset and its counter value must be known and agreed upon.

f- It is not necessary for the seller to be the producer of the asset (in the case of an agricultural commodity), and for the asset to be in his possession when he makes the deal.

g- The asset and its counter value must be free of any (*riba*) attributes.

Salam and SCHC

Salam contract is a forward purchase of generically described goods for full advance payment (Vogels and Hayes, 1998, p. 145). Jurists agree that the purpose of *Salam* sale is to provide finance to the seller and to provide a well rewarded investment opportunity to the buyer (Ibn Qudamah, 4/321; Ibn Taymiyyah, 1398 H., 13/97; Ibn al Humam, 1317 H., 9/382). That is why most of them stipulate a full advance payment for the goods for the validity of *Salam*. This condition cannot be valid for (SCHC) i.e., Islamic Forwards, for the following reasons:

a- Since the purpose of the SCHC is the protection of the assets' value and not investment or finance, the stipulation of full advance payment is not justified.

b- If the buyer cannot be the investor, and/or the seller does not want finance from the buyer, hedging cannot be achieved through Salam, but it can be through SCHC, which is a binding contract by the seller and the buyer to exchange the agreed upon asset and the counter value on the specific date in the future.

SCHC and the Debt Clearance Sale

One of the forms of sale debt by debt (*bay' al-dayn-bi-dayn*) is to conclude a sale where an asset and its counter value are postponed. Ibn Al-Qayyim al-Jawziyyah named it *ibtia'-al-dayn-bi-al-dayn*, and he considered it the only prohibited form of sale of debt (Ibn Al Qayyim, 1973, 1/340-341).

General consensus is said to have materialized on the prohibition of sale of debt by debt (Ibn Qudamah, Vol. 4, p. 53, Ibn Taymiyyah, 1949, p. 235), but jurists disagree on the definition of this transaction and the various forms it can take. Legal schools have recorded divergent rulings, which mean that the claim of consensus is unfounded. Ibn Al-Qayyim justified the prohibition of the above form of sale of debt by debt, on the grounds that the purpose of the sale contract is possession. Debt sale does not fulfill this purpose, so it is a useless obligation for both parties. Al-Dari (1990) (Al-Darir 1990, p. 334) refutes this claim on the basis that in this transaction even though the exchange of goods and price is postponed, the buyer becomes owner of the goods and the seller becomes owner of the price. Even though in the Hedging Contract, both the asset and its counter value will be delivered on the agreed upon date in the future, it cannot be considered useless, since the hedging contract achieves the goal of protecting and maintaining the assets of counter parties, which satisfies the Shariah maxim of preserving wealth.

The Justification for Postponement

The major difference between the conventional sale and the hedging contract is

the delivery postponment of the asset and its counter value in the hedging contract. The postponment can be justified on the following grounds:

a- In an analogical base with the *Salam* contract, Malikis permits postponement of the counter value for three days and for more than three days in some cases (al Hattab, n.d., 4/516).

b- In a leasing contract, it is permitted to delay the payment of the rent even though the usufruct cannot be delivered at once at the beginning of the contract, so we have postponement of the rent and the usufruct. According to Al-Kasani, if there is a condition in the lease contract, that the rent will be paid at the end of the lease, this condition is permitted (al Kasani, 1910, 4/341).

c- In an *Istisna* contract, one party buys goods that the other party undertake to manufacture, and to deliver in the future. The *Hanafi* school permitted the postponement of the price of these goods. In this transaction, both the goods and the counter value are postponed.

d- Based on the principle of the freedom of contractual stipulation, Ibn Taymiyyah concluded that the agreed upon stipulations between parties are binding to them (Ibn Taymiyyah, 1398, 3/239). In hedging contracts, counter parties can stipulate the postponement of both the asset and its counter value. This condition is valid, since it is a prerequisite to fulfill the hedging purpose.

e- Some jurists forego the full advance payment condition in a *Salam* contract if it is concluded as a sale contract (al Shirazi, 1976, 1/392).

f- According to Al-Masri (1999), if the goods and their counter value are delivered on a specific date in the future, there will be no risk, i.e. or if the goods or their value are postponed, *Gharar* will be the same. This *Gharar* is not prohibited.

g- Supply contracts, where the goods and their counter value are postponed, are permitted by Zarqa (1999, p. 487), Abu Sulayman (1994,), Al-Masri (1999, p. 12) and *Islamic Fiqh Academy* (1999).

h- According to Sallami (2000), it is permitted to postpone the two counter values in a sales contract if the intention of the two parties is to deliver and take delivery of the asset, and not for speculative purpose).

Short Selling Objections

Since the SCHC is a forwards contract in which delivery of goods and its counter value are postponed, the goods may not exist or be owned by the seller at the

time of the conclusion of the contract, and this is not permitted according to San'ani (1353 H.), Ibn Qudama (W.D) and Ibn Humam (1317 H., 3/17, 4/155, 6/336). However *Hanafis* have ruled that it is the effectiveness of the sale that is a condition of validity and not the seller's ownership of the item that is the subject of the sale (al Kasani, 1353 H, 5/146).

Most jurists hold that the ownership condition for the validity of sale contract applies only to the sale of specified objects and not to fungible goods, which can be substituted and replaced (al-Baghawi, 1974, 8/140-141; al Khattabi, 1949, 5/143).

Ibn Taymiyyah (1398, 20/529) and Al-Baji (1332 H., 1/399) recorded that the ownership condition which is stipulated for the validity of a sale contract, is meant to prohibit the sale of an item which is not present and the seller cannot deliver, so the emphasis is not on ownership or possession, but rather on the seller's effective control and ability to deliver.

Thus the hedging Contract must apply only to fungible goods which are likely to exist at the time of delivery.

The Drawbacks of SCHC

In the hedging contract, like any other forward contract calling for delivery of goods at a future time for payment to be made upon delivery, the agreement is based on terms which are mutually beneficial, but with time, conditions may change, and hedging may have the following drawbacks:

a- Credit risks: In SCHC, both parties must trust each other to complete the contract as promised. A cost-of-carry model can be used to decide on the price of the goods on the delivery date, which is acceptable to both parties. But as the market changes, the market price on the delivery date may be higher than the agreed upon price, and the seller will be tempted to default on the hedging contract obligation. Also, if the market price of the goods is lower than the agreed upon price, the buyer will be tempted to default and buy the goods on the open market at the spot price. This gives rise to credit risk in the hedging contract.

b- Matching Problems: In SCHC, there is a difficulty in finding the right trading partner, as one party may wish to sell 10 tons of sugar for delivery in 6 months, but it might be difficult to find some one willing to contract now for the delivery of sugar in six months time and for the whole 10 tons.

c- Contracts liquidation problems: The SCHC is a binding agreement for both parties. So if market changes and make the contract undesirable to complete and deliver, then the parties have no choice but to make the delivery, even though it is suboptimal for one of them.

The above drawbacks of the SCHC are expected to limit the use of this contract to parties that know and trust each other to honor their commitments, and to big companies and big transactions where the counter parties credit record can be easily verified and their needs easily identified.

The Sharia Compatible Future (SCF)

SCHC can be modified to avoid the above-mentioned drawbacks. This can be done when the assets or the commodity subject to trade, become standardized contracts and are permitted to be traded on an organized exchange only, and the transaction and the contract are regulated at different levels by different institutions to ensure propriety and the fairness of the transaction, as well as to protect the integrity and the commitment of the counterparties.

The institutional setting of SCF is an integral part of the standardized hedging contract which will be used in this transaction. Thus, it must be in conformity with the Shariah code of transaction. The above contract involves a commitment to sell or buy a specified quantity of an asset or commodity at a particular future date at a price determined at the time of contracting, given that the asset or commodity must be permitted to be transacted according to Shariah. The institutional setting of conventional futures can be utilized and modified to conform to the institutional setting of Shariah Compatible Futures.

The Institutional Setting for Islamic Futures

The exchange in which the Islamic futures will be traded must be organized along the lines of a conventional exchange. It can be a voluntary non-profit association of its members. This will stimulate cross-subsidizing of the exchange's products, according to Chambers and Carter (1990), and reduce the average cost of these products.

Exchange members must have a right to trade on the exchange and to have a voice in the exchange's operations. They must also serve on the committees which regulate the exchange's operations, rules, audit functions, public relations, and the legal and ethical conduct of its members. The administrative officers of the exchange should manage the ordinary operation of the exchange and report to the membership, (Kolb, 1996).

Trading of SCF must take place only through the exchange during official trading hours in the designated trading areas, usually called the “pit”, in an “open outcry system”, where a trader must make any offer to buy or sell to all other traders present in the pit.

The trader, who is a member of the exchange can trade for his own account or he could be a broker acting on behalf of his own firm or on behalf of a client outside the exchange.

Standardized Contract Terms

To achieve their objectives, SCFs must be standardized. Thus, Islamic futures contracts must be highly uniform, with well-specified commitments for carefully described goods to be delivered at a certain time and in a certain manner. So, the SCF contract must specify the quantity and the quality of the good that can be delivered and specify the delivery date and method for closing the contract.

In a wheat contract for example, the quantity could be 5000 bushels per contract, the quality could be No. 2 Soft Red, No. 2 Hard Red Winter, No. 2 Dark Northern Spring, or No. 1 Northern Spring. The expiration of the contract could be July, September, December, March, or May. The place of delivery could be a specific warehouse approved by the exchange.

For closing, the buyer transmits payment to the seller, and the seller delivers a warehouse receipt to the buyer. The holder of a warehouse receipt has title to the wheat in the warehouse. Delivery can occur on the business day of the delivery date.

To prevent gambling activity and limit unproductive speculation, the SCF contract can stipulate the minimum price fluctuation or “tick size” and specify a daily price limit, which restricts the price movement on a single day. The daily price limit can be expanded over successive days when a commodity enters a particularly volatile period such as war. For the delivery date, this limit will not be in effect, as supply and demand will govern this limit.

Standardizing the SCF contract eliminates the problem of finding the right trading partner in SCHC, i.e. Islamic forwards, as all participants in the market know exactly what is being offered for sale as well as the terms of the transaction. This help to reduce the uncertainty of the transaction, i.e. *gharar*, and promote liquidity of Islamic futures contracts.

The Clearinghouse

To manage the credit risk in SCF contracts, the Islamic futures exchange must be closely associated with a particular clearinghouse. The clearinghouse, which must be a separate legal entity, guarantees that all of the traders in the Islamic futures market will honor their obligations. The clearinghouse can serve this role when it guarantees the seller’s obligations to the buyer and the buyer's obligations to the seller. In this way, the clearinghouse substitutes its own credibility for the promise of each trader in the market.

The clearinghouse must not take any active position in the market, as it cannot initiate any sale or purchase, but instead, it interposes itself between all parties to every transaction after the initial sale is made.

In the SCF market, the number of contracts bought must always equal the number of contracts sold. So, for every party expecting to receive delivery of a commodity, the opposite trading partner must be prepared to make delivery, and the long positions must equal the short positions.

Since the clearinghouse must be a well-capitalized financial institution, its failure to perform on its guarantees to the trading parties would be very unlikely and so, the credit risk in Islamic futures will not be a problem.

In this situation, the clearinghouse performs function of the external party guarantee (or third party guarantee) which is permitted in Shariah.

Margin and Daily Settlement

Margin and daily settlement can be used in addition to the clearinghouse as safeguards for the SCF market.

The prospective trader, before trading Islamic futures contract, must deposit with his broker, funds called the “margin”, which serve as a good faith deposit by the trader. Their main purpose is to provide a financial safeguard to ensure that traders will perform on their obligations.

There can be different types of margins. The initial margin is the amount a trader must deposit before trading any Islamic futures. The initial margin must not be less than the maximum daily price fluctuation permitted for the contract being traded. Upon the proper completion of all obligations associated with a trader's futures position, the initial margin is returned to the trader.

Daily settlement or marking-to-market procedure must be an integral part of the Islamic futures market, to ensure the stability and the practicality of the system.

Since the initial margin is a small percentage of the value of the contract, and the potential loss could be much larger than the margin deposit, the contract must be settled, or marked-to-market daily, which means that traders realize their paper gain and loss in cash on the result of each day's trading. Any loss will be deducted from the margin. When the margin reaches a certain level, called the “maintenance margin”, the trader is required to replenish the margin, bringing it to its initial level. The additional amount the trader must deposit is called the “variation margin”. The trader is allowed to withdraw the day's gain when it is above the initial margin.

If the trader suffers a loss and he is unable or refuses to post the required additional margin, the broker is empowered to close the futures position by deducting

the loss from the trader's initial margin and returning the balance to the trader. The margin which is received by the broker, must be paid to the clearinghouse which demands margin deposits to cover all futures positions that are carried by the broker.

Closing the SCF Position

There are three ways to close the SCF contracts:

a- Delivery of the commodity: Since the main purpose of the SCF is to hedge against undesirable and unexpected changes in an asset's value, Islamic futures contracts are written as to call for completion of the futures contract through the physical delivery of a particular good. The contract specifies the time and the location where delivery takes place. The clearinghouse must supervise the arrangements for delivery. It also would pair buyers and sellers for the delivery and identify the two parties to each other. Each of the buyer and the seller will communicate the relevant information concerning the delivery process to the opposite trading partner and to the clearinghouse. The position is closed when the buyer receives the commodity and the seller receives the payment.

b- Cash settlement: For many commodities, the delivery process can be quite cumbersome. The buyer may find that it is convenient for him to receive the market value of the commodity and buy it from the market, and the seller may like to distribute his commodity through his established channels and pay the market value of the commodity. In this case, the counterparties may agree to settle the transaction in cash, so the seller will pay the buyer the agreed upon value of the commodity through the clearinghouse, and will close his position.

One way to justify the cash settlement is to consider it as a new transaction. The seller will buy back the commodity at the market price and pay the difference. This is known as "*iqalah*" and is Shariah permitted. According to Ibn Rushid, if the seller asks the buyer to revoke the sale and receive ten dinars cash or defer payment, it is permitted; if the new price is higher or lower than the sale price, then this will be considered a new contract (Ibn Rushd, 1416 H., 2/193).

For the permissibility of a cash settlement and on an analogical base to the *Salam* contract, al-Subky stated that, if the Salam contract matures and the seller wants to settle it in cash, by giving the market price to the buyer and ask him to buy the commodity for himself, this will not be permitted. But if the seller asks him to buy it for him, and possess it as proxy for him, and then possess it for himself as a buyer, his sale and possession of the commodity as proxy for the *Salam* seller is permitted, but he cannot sell it to himself. However, the *Hanafi* jurists permit it (Ibn al Humam, 1317 H., 5/346-347).

In a SCF contract, al-Subky's reservation will not apply since the seller's broker will be his proxy who will receive the cash settlement and buys the commodity from the spot market and deliver it to the buyer.

c- Reversing trade: If delivery becomes undesirable for a trader, he may liquidate the SCF by entering a reversing trade prior to the time of delivery. For an Islamic futures contract, the trader, whether the buyer or seller, may ask his broker to transfer his obligations (*ihalah*) in the contract to the other trader, who must be willing to take on the same contract with its obligations and terms. As all Islamic futures contracts must be standardized, and there is no direct contact between traders, and transactions are concluded through the exchange brokers who may be agents for many buyers and sellers at the same time, the broker may find a substitute who will buy the contract at its market value.

But in a reversing trade, the buyer will sell the commodity before he owns or possesses it, and make the sale invalid according to Ibn Qudama, Ibn Humam and al-Sanaani. This objection is raised also in the case of short selling in the previous section.

Since most jurists conclude that the possession and ownership conditions for the validity of a sale contract apply only to the sale of specified objects and not to fungible goods, and as Ibn Taymiyyah and Al-Baji's emphasis is not on the ownership or possession but rather on the seller's effective control and ability to deliver the goods as conditions for the sale contract validity, Islamic futures reversing trade can be valid, since the subject of sale in the Islamic futures contracts is fungible goods and the institutional setting in Islamic futures market, which was discussed earlier, may give the seller effective control and ability to deliver the goods.

6. The Regulation of the Sharia Compatible Futures (SCF)

Though Islamic futures are engineered to overcome the drawbacks of the SCHC, such as credit risks, matching problems and liquidity problems, the institutional setting is the essential part of the Islamic futures system. Successful setting, organization and regulation for the institutions in the SCF market, ensure its ability to achieve its objectives. The aims of the SCF regulations are:

a- To ensure that contracts as well as operations of the SCF market do not violate the Shariah restrictions on transactions such as interest rate, gambling and exurbanite *Gharar*, and the commodity subject to trade must not be prohibited such as pork, wine, weapons, etc.

b- To ensure that the rules that govern the conduct of all parties in the SCF market, including brokers, exchange members, clearinghouse members as well as traders, are designed to be in conformity with Islamic norms and

create a smoothly functioning market in which traders can feel confident that their orders will be executed properly and at a fair price. Thus, all fraud, dishonesty, dishonorable conduct, and defaulting on contract obligations are prohibited.

c- To provide a market place in which the economic functions of the futures market can be fulfilled; thus any practice that interferes with the process of price discovery or the efficient transfer of unwanted risk which make the SCF market performs poorly, must be prevented.

The fulfillment of the above aims is the responsibility of all SCF market institutions which include the broker, the exchange, the clearinghouse, and the regulatory authority. All measures must be taken by them to ensure that the Islamic futures market can achieve its economic functions. We can say that there are three regulators for the SCF market:

a) The Broker

The broker represents his client at the exchange and clearinghouse. As he is in the best position to know about his activities, the broker has the duty to remain informed about his clients conduct and to ensure that his client's activities are in compliance with the rules and the regulation of the exchange, clearinghouse and regulatory authority. The broker is responsible for knowing the customer's position and intentions and for ensuring that the customer does not violate the Islamic code or Islamic norms and does not disturb or jeopardize the Islamic futures system.

b) The exchange and clearinghouse

The exchange as well as the clearinghouse have duties to control the conduct of exchange and clearinghouse members. Thus they must formulate and enforce rules for trading on the exchange. These rules must be designed to fulfill the aims of the regulation, i.e. to ensure the conformity of market conduct with the Shariah code and to create a smooth functioning market.

More specifically the exchange rules must ensure the following:

1. Prohibit ficticious trading (trading that merely gives the appearance of trading without actually changing ownership), as it is prohibited by Shariah.

2. Prohibit circulating rumors to influence price as it violates Islamic ethics.

3. Prohibit disclosure of the customer's order, as this violates his right to privacy.

4. Prohibit taking the opposite side of the customer's order, as this disturbs the price mechanism in the Islamic futures market.

5. Prohibit the making of false statements to the exchange, as this violates Islamic norms.

6. Prohibit prearranged trading, where two participants consult in advance and agree to make a certain trade at a given price, as prearranged trade is non-competitive and can be abusive and violates the “outcry” rule of the exchange.

7. Prohibit front running, as this gives the broker an unfair advantage. Front running occurs when a customer gives his broker a very large order to sell and the broker knows that this will depress the Islamic Futures price. If the front running broker would sell his asset first and then the customer's order, he would be taking an unfair advantage.

8. Put position limits for the commodity, which means no single trader is allowed to hold more than a certain number of contracts in that commodity, as this limits the influence of a single trader on the market and prevents the trader from controlling the Islamic futures price.

9. Put daily price limits and margin requirements.

10. Design the contract to be used in the Islamic futures market

All these rules must be subject to review by the regulatory authority.

c) The Regulatory Authority

The responsibilities of the Regulatory Authority, which ensure achieving the aims of regulation, include the following:

1- Approval of any new contract. Before trading, the exchange must submit the newly designed contract to the regulatory authority for approval. The regulatory authority is responsible for determining whether trading in such a contact is beneficial to the public interest. To receive approval, the contract must not violate the Islamic Shariah restrictions on transaction, and/or Islamic norms, and the contract must show promise of serving an economic purpose, such as making for fairer pricing of the commodity in some way or in making hedging possible.

2- Regulation of Islamic futures market trading rules, including the daily permitted maximum fluctuation, certain features of the delivery process, and minimum price fluctuations.

3- Review of complaints of membership exclusion or any other unfair treatment by the exchange.

4- The regulatory authority has the emergency power to intervene in the conduct of the market, when it believes manipulation is present.

5- The regulatory authority has the power to require competency verification of the brokers and commodity traders, to ensure their ability to conduct trade on the exchange.

Future Pricing

The 'Cost-of-carry model' is used to price futures. It defines the price relationship between the spot price of an asset and the future price that precludes arbitrage. In a perfect futures market for a commodity, the carrying charge reflects the cost of carrying the commodity from one time or one place to another. This cost falls into four basic categories: storage costs, insurance costs, transportation costs and financing costs. These costs determine the pricing relationship between spot and futures prices as well as the relationship among prices of futures contracts of different maturities. According to cost-of-carry model, the futures price must be less than or equal to the spot price of the asset plus the carrying charges necessary to carry the spot asset forward to delivery. So to prevent cash-and-carry arbitrage the following rule must hold:

$$F_{o,t} \leq S_o (1+C)$$

and to prevent reverse cash-and carry arbitrage this rule must hold.

$$F_{o,t} \geq S_o (1+C)$$

where:

$F_{o,t}$ = the future price of an asset at t = 0 for delivery at time t.

S_o = the spot price at t = 0.

C = cost of carry, expressed as a fraction of the spot price.

In the case of an imperfect futures market, other costs must be added to the carrying charge, such as transaction costs (T), for the model to remain valid:

$$F_{o,t} \leq S_o (1+T) (1+C)$$

The future price must be less than or equal to the spot price (S_o) of the asset plus the carrying costs necessary to carry the spot asset forward to delivery plus the transaction cost (T).

The above model is used also for stock futures, but the equation for the price of the stock futures must be adjusted to include the dividends that would be received between the present and the expiration of the futures, as the chance to receive dividends lowers the cost of carrying the stocks. So we have:

$$F_{o,t} = S_o(1+C) - \sum_{i=1}^{N} D_i(1+r_i)$$

where:

D_i = the i dividend.

r_i = the interest earned on carrying the ith dividend from its time of receipt until the futures expiration at time t.

$F_{o,t}$, S_o, C were defined above.

In swap pricing, swap prices may be affected by a number of factors such as:

1. The creditworthiness of the potential swap partner, because in the case of counter parties' defaults, the dealer must either absorb the loss or institute a lawsuit to seek recovery on the defaulted obligation.

2. The availability of additional counter parties, as the swap dealer will be very concerned about how the risk involved in a prospective swap can be offset by participating in after swaps.

7. Conclusion

Futures can be beneficial to Islamic finance if modified to become Sharia compatible. The economic efficiency is the prime goal of Sharia compatible futures. Futures markets, as they reallocate risk among those who choose to take it, aggregate and disseminate information about the future course of the prices in spot market and stabilize future cash prices. However, they can be a destabilizing factor if they are misused. This can happen if they are used as a gambling device, through speculation, which is considered an unproductive activity by Islamic economists. An integral part of the permissibility of Sharia compatible futures is its institutional setting, as it will insure that all transactions in their markets will be in conformity with Sharia.

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مستقبليات مقترحة متوافقة مع الشريعة

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المستخلص : مستقبليات حسب الشريعة (م ح ش) هي عقود مصممة لبلوغ أهداف المستقبليات التقليدية، ومتوافقة مع التعاليم الإسلامية، من حيث جوهرها وموضوعها . وهذا يتضمن تحريم الربا فيها . كما يتضمن أن تكون مستقبليات العملات وفق قواعد مبادلات العملة في الإسلام، وأن يكون الوضع المؤسسي معززًا للقيم الإسلامية، ومبتكرًا لوسيلة لا قمار فيها في سوق المستقبليات الإسلامية.

المستقبليات ضرب من المشتقات المستخدمة في إدارة المخاطر . وهي وسيلة فعالة جدًا للتحوط من الأخطار، وتستخدمها المنشآت التجارية والمؤسسات المالية لكي يكون تعرضها للخطر في مستوى مقبول . في هذه الورقة نهتم بتطوير مستقبليات متوافقة مع الشريعة، وبمناقشة الوظائف الاقتصادية للمستقبليات، وبيان حكمة التحوط، وبتحليل أدبيات المستقبليات، وموقف الشريعة من التحوط، ومن ثم اقتراح مستقبليات متوافقة مع الشريعة.