Relationship-Based Transactions (RBTs)

Digital IBF Lab
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Introduction

Relationship based transactions (RBTs) take place in all sectors of the economy – philanthropy, not-for-profit and for-profit – that are necessitated by recurring nature of client needs. RBTs through repeated interaction among the actors induces trust, commitment, loyalty and a long-term relationship between them.

Platforms that facilitate Islamic charity payments – zakat, sadaqah, cash waqf - usually provide for a one-time cash flow from the donor to the beneficiary. Given that the donors motivated by a specific cause may like to observe the impact of their donation or see the project cross specific milestones in terms of output and outcome, there is need for an enhanced framework that permits multiple micro payments efficiently under a single precommitment[1]. In addition to providing for the above framework, use of blockchain technology is expected to bring in its numerous other benefits, e.g. enhanced transparency, reduced cost of intermediation and an enhanced donor base (crypto-donors). From the standpoint of the agent (charity), the new framework should mitigate donor attrition risk. The notion of "feel the impact as you give" is expected to induce relationship-based donation and a longer-term bondage between the actors (donor, beneficiary and intermediary).

Moving from philanthropy and benevolence to trade and commerce, platforms that facilitate electronic trading in halal businesses usually accommodate traditional sale transactions in halal commodities and services with or without deferred payment facility. Given that Shariah provides much greater flexibility with respect to the transaction related variables – price, quality and quantity of object of sale, terms of payment and delivery etc. - than what is commonly understood, this paper seeks to configure a unique product that is suitable to relationship-based and recurring exchange transactions.

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[1] a decision or set of decisions taken in the present in order to limit the agent's options in the future, i.e. to commit the agent in advance to a particular course of action or limited set of courses

Part 1: Relationship-Based Charity

Islamic charity is NOT a random donation to an unknown recipient. Shariah strongly encourages philanthropic action on the part of Muslims.

"The parable of those who spend their property in the way of Allāh is as the parable of a grain growing seven ears with a hundred grains in every ear, and Allāh multiplies for whom He pleases, and Allāh is Ample-giving, Knowing" (2:261).

"O you who believe! Give in charity of the good things you earn and of what We have brought forth for you out of the earth, and do not aim at giving in charity what is bad" (2:267).

"If you give in charity openly it is well, and if you hide it and give it to the poor it is better for you. (2:271).

"You shall never attain piety until you give from what you love" (3:92)

The Prophet (peace be upon him) said: "When a person dies, all his good deeds cease except for three: an ongoing act of charity, beneficial knowledge and a righteous son who prays for him." (al-Tirmidhi, n.d.: 3/660; al-Darimi, 1986: 1/148).

Philanthropy occupies a central position in the Islam. The broad term for philanthropy in Islam is sadaqa. When compulsorily mandated on an eligible Muslim, sadaqa is called zakat. When sadaqa results in flow of benefits that are expected to be stable and permanent (such as, through endowment of a physical property or cash), it is called sadaqa jariya or waqf. Doing a waqf, like ordinary sadaqa and unlike zakat, is a voluntary act. **Unlike ordinary sadaqa, infaq (forms of charitable spending) that are usually in the nature of specific financial flows, zakat and waqf provide for flow of benefits on a sustained basis.**

Zakat

Zakat is essentially a compulsory annual levy on the wealth of an adult and sane Muslim individual who might possess wealth beyond a prescribed minimum. For

wealth to become liable for zakat, it must remain in the ownership of the individual for one Hijrī calendar year (Ḥawl) and must exceed a minimum threshold (niṣāb). Zakat is not levied on income, which is used for consumption, and items of wealth, which are used for personal and family utilization. Zakat is levied on savings that is transformed into wealth of an individual and added to his stock of wealth, and on agricultural output. It is also levied on forms of wealth that are characterized as stocks (e.g., gold, silver, the inventory of trade and livestock). Zakat is not levied on wealth that is in the nature of means of production, such as, tools and equipment, machinery etc. Islamic law provides for elaborate rules relating to estimation of zakat base (amount of wealth on which zakat is levied) and the rates of levy that vary with forms of wealth.

Islam stipulates conditions on the use of zakat funds and requires that funds must clearly flow to specified categories of beneficiaries only.

"The offerings (zakat) given for the sake of Allah are (meant) only for fuqara (poor) and the masakeen (needy), and ameleen-a-alaiha (those who are in charge thereof), and muallafat-ul-quloob (those whose hearts are to be won over), and for fir-riqaab (the freeing of human beings from bondage), and for al-gharimun (those who are overburdened with debts), and fi-sabeelillah (for every struggle) in Allah's cause, and ibn as-sabil (for the wayfarer): (this is) an ordinance from Allah- and Allah is all knowing, wise." (9:60)

A question often arises regarding the quantum of zakat that should be paid to an individual. There are two views on this matter. The first view is to give the maximum, sufficient enough to satisfy the essential needs of the needy, without determining any specific amount. The second view is to give a specific amount. According to Yusuf Al-Qaradawi, the first view seems to be more consistent with the texts and objectives of zakat.

Umar (May Allah be pleased with him) was once asked what to do with the zakat collected from bedouin Arabs. He answered, "By Allah, I shall render the sadaqah to themselves, until each of them becomes the owner of a hundred camels, male or female." (Al Mussannaf Abdur Razzaq)

In another incident, Umar (RA) declared "When you give, make [the recipient] rich." (Al Amwal)

In either case, zakat is not to be given to an unknown recipient in a random manner. Ideally the zakat giver should consider the impact of his giving on the beneficiary, implying a **relationship-based act of donation**. A question that is often asked in the context of the role of zakat and indeed, of all forms of charity and philanthropy in poverty alleviation is: Aren't we making the poor dependent on charity? Some organizations seek to curb dependence by maintaining a central database of the mustahiq or zakat recipients and monitoring if they are repeatedly approached by the same individuals and families for assistance year after year. Some others prefer to tackle the problem through programs and projects that involve "hand-holding" of the poor zakat beneficiary (mustahiq) and help transform his/her life within a finite time period, to the extent that he/she turns into a zakat giver (muzakii).

Waqf

Similar to zakat, waqf is also an important institution in the Islamic economy. Waqf (plural: awqaf) may be defined as the Islamic endowment. The literal translation of the word waqf is "to hold". The institution of waqf or awqāf, therefore, implies holding or setting aside certain assets by the donor (waqif) and preserving it so that benefits continuously flow to a specified group of beneficiaries or community.

Waqf as an institution of charity provides for a continuous flow of benefits to intended members of a community. It is called a sadaqa jariya or a sustained and uninterrupted charity. Muslims believe that after their death, they will continue to benefit from their previous acts of charity (among others, through waqf). Doing a waqf, like ordinary sadaqa and unlike zakat, is a voluntary act. Like ordinary sadaqa and unlike zakat, waqf is flexible in the sense that its beneficiaries need not be restricted to Muslims.

The nature of the expected benefit or purpose of the waqf is clearly stated in the waqf deed or document created for this purpose by the donor (wāqif). A traditional example of waqf is that of donating or setting aside a land for construction of a

masjid or a school or a hospital. The donor also specifies the trustee-manager(s) who would ensure that the intended benefits materialize and flow to the community. Unlike zakat where the benefits must flow to eight categories of designated beneficiaries, the purpose of waqf may include addressing religious or social needs.

The donor also specifies the Trustee-manager(s) who would ensure that the intended benefits materialize and flow to the community. The Trustee-manager is variously described as nadhir or mutawalli. The waqf deed provides for the method of compensation of the Trustee-manager, usually a part of the earnings or benefits from the assets under waqf.

A fundamental characteristic of classical waqf is permanence of assets. Therefore, waqf typically applies to immovable and non-perishable properties like land and building whose benefits can be extracted without consuming the property itself. This is the traditional view. For modern scholars, "perpetual nature of assets" is not a precondition for waqf. This is deemed acceptable under the condition that the physical asset itself is not depleted with flow of benefits from such assets. A cash waqf becomes a possibility, where the original endowment is kept intact and the returns generated from the endowment are used for the stated purpose(s).

While in all forms of donations, the will of the donor regarding the application of donated funds or property should be respected as a matter of good practice, the same is carefully documented and is mandatory in case of waqf. If the donor specifies in the waqf document that the same has been created for the benefit of poor in the form of provision of education or health services in a given region, then this becomes the mission of the organization created through waqf. The waqf management is now responsible for directing the organization towards achievement of the objectives that follow from the above. **The strong focus on the benefits and the beneficiary turns the game into a relationship-based act between the donor (waqif) and the beneficiary**.

In brief, the institutions of philanthropy in Islam – zakat, sadaqah, cash waqf – emphasize impact and envisage relationship-based recurring donations to beneficiaries as long as the intended purpose is not achieved. The need to ensure

transparency and continuous monitoring of end use is high, especially with involvement of agents or intermediaries in the process. Therefore, an efficient mechanism is needed to execute recurring transactions between the actors or their agents at minimal cost.

Role of Blockchain

> Blockchain has the potential to ensure that the cash flows in the form of zakat, sadaqah, cash waqf

- Form an enlarged pool with donations in fiat as well as crypto currencies
- Are automated and executed without any delay
- Are distributed as micro and recurring payments under a single large donor commitment
- Are distributed with complete transparency about the end-use
- With limited role for intermediation and minimal possibility of corruption, nepotism and other evils
- At reduced transaction costs

A blockchain based system would be associated with low costs of international transfers. This would essentially imply more funds for the project. It would also be faster. This would ensure quick response that is required in a project to help people and regions hit by natural calamities and disasters. Blockchain should also improve accountability and transparency. Unlike conventional Islamic charities, where progress on campaigns are usually hard to monitor and validate, smart contracts on blockchain can be used to link release of funds with realized impact on the ground. Failure to meet project-specific milestones and targets could even lead to funds being withheld by the donor(s).

Blockchain can help address the all-important issues of corruption and nepotism in the distribution of charity funds. Another critical variable to control is the level of administrative and operational cost incurred by the intermediary. In the context of zakat, Shariah rules place a cap on the maximum percentage of zakat funds mobilized that may be used to cover such costs. Not more than one-eighth of zakat funds can be used for this purpose according to scholars from SE Asia.

There is no way to effectively control this variable in the face of gross abuse by organizations. Blockchain may help here with enhanced transparency and possibility of tracking the donations.

Shariah places a huge responsibility on charity organizations and other intermediaries in case of zakat funds as well as on the trustees of awqaf. In case of former, this is to conform to the rules of Shariah and distribution among "eligible" beneficiaries, ensure a cap on costs, maintain a separation of zakat funds from other sources etc. In case of latter, this is to ensure investment/ management of the endowed asset in the best possible ways so as to maximize the benefits and distribution of the same among beneficiaries as mandated by the donor. A blockchain based system has features that would ensure that the game is fair and Shariah-compliant.

Part 2: Relationship-Based Exchange

The contract of exchange (bai) is fundamental to the Islamic economic and financial system. It is the cornerstone of a market-based approach to economic solutions in the Islamic framework.

The contract of exchange (bai) in an Islamic economy must be free from two basic prohibitions – prohibition from riba and gharar (commonly understood as interest and uncertainty respectively). There is a consensus among Islamic jurists on the meaning and implications of riba and gharar.

- Riba is viewed as an excess or gain from sale/ debt that is considered illegitimate. It is a gain that is not accompanied by any risk-taking or productive efforts, and hence, considered illegitimate.
- Gharar on the other hand, refers to uncertainty in the contract due to a variety of conditions – inadequacy, inaccuracy, complexity of value-relevant information with the parties to the contract, indeterminateness due to non- or mis-specification of object of exchange, price, currency of exchange, date and method of settlement, constraints on settlement due to non-availability of the object of exchange with the seller for delivery etc. In essence, the rationale underlying this prohibition is to avoid potential conflicts between parties.

While the prohibition against riba is unanimously viewed as "absolute", the same against gharar is not. It is the presence of excessive (katheer) gharar that renders a contract invalid. Moderate (qaleel) levels of gharar are tolerated.

While the classical approach to treatment of gharar is dichotomous, there is a case for measuring gharar on a continuum – from zero or low, to high, to very high. At one extreme, is a contract of exchange with none of the conditions (as stated above) present. At the other extreme are a range of possibilities that are beyond the domain of acceptance defined by the cut-off level of gharar.

If we define the cut-off level of gharar as `lambda *`, then the range of possibilities that lie to the left of `lambda *` within the acceptance region, should be of great interest to financial engineers, as these provide maximum flexibility in design to product developers.

Classical Contracts: A Review

Classical books of fiqh discuss an array of permissible financial contracts, that are by implication, free from riba and involve low and acceptable levels of gharar (presented in table 1 below).

It may be noted that some of these involve a trade-off between factors that contribute to high or low levels of gharar. For instance, the "deferred delivery" feature of settlement in a bai-salam is countered with the "fungibility" feature of the product.

Table 1: Overview of Classical Contracts

Contract	Description	Price	Object	Settlement (buyer)	Settlement (seller)
Bai al-sarf	Currency sale	Known	Known	Spot	Spot
Bai bi al-taqsit	Instalment Sale	Known	Known/ Seller-in-possession	Deferred: (Dates known)	Spot
Bai murabaha	Cost-plus Sale	Known	Known/ Seller-in-possession	Spot/ Deferred (Dates known)	Spot
Bai bi al-thaman ajil	Deferred-payment Sale	Known	Known/ Seller-in-possession	Deferred (Dates known)	Spot
Bai salam	Deferred-delivery Sale	Known	Fungible/ Seller-not-in-possession-but-able-to-produce/ procure-from-market	Spot	Deferred (Dates known)
Bai istisna	Deferred-payment & delivery	Known	Manufactured by seller/ Seller-not-in-possession-but-able-to-produce	Deferred (Dates known)	Deferred (Dates known)

The AAOIFI Shari'ah Standard No 31² explicitly addresses the issue of controls on gharar in financial transactions and provides instances, where gharar does or does not nullify the contract. It cites cases where gharar arising out of "indeterminate" or "uncertain" price nullifies the contract. At the same time, when gharar is reduced by defining the price as "market price on the day of purchase", or "the price people usually sell at" or normal price, the level of gharar becomes acceptable and the contract is deemed valid.

The AAOIFI Shari'ah Standard No 31 also finds istijrar acceptable defining it in a specific way as where "the buyer obtains the goods regularly from the seller for a price to be determined subject to the price that people normally sell at, or subject to an index, and even after consumption of goods in question".

Note that Istijrar can be deemed as an Islamic forward contract – in addition to Istisna – where settlement in future is permitted with both the payment of price and delivery of goods being deferred to a future date.

In Istisna, two factors – known price; seller being manufacturer – trade-off the gharar associated with deferred settlement of price as well as delivery.

In Istijrar, the gharar-reducing factors are: repeated nature of purchase and sale from the single seller (thereby, involving high levels of information-sharing between parties inducing trust). The gharar relating to price is higher compared to Istisna, but deemed tolerable as the settlement price is the "normal or average price" or one "linked to an index" that is transparent to both the parties concerned.

Classical contracts thus, involve an apparent dichotomy between excessive and unacceptable levels of gharar (gharar katheer) and moderate and acceptable levels of gharar (gharar qaleel). Some dichotomies following from the books of fiqh are presented in fig 1 and 2 below. However, one can observe how permissibility varies along a continuum of levels of gharar (with possible trade-offs between gharar-inducing and gharar-reducing factors associated with alternative contractual scenarios).

To sum up, unlike riba, prohibition of gharar is not absolute. The major rationale underlying prohibition of gharar is to avoid conflicts between parties. Traditionally, gharar is understood as "settlement risk" – the risk that either or both parties to a

commercial contract will fail to carry out their respective obligations; payment of price by the buyer and delivery of object of sale by the seller as per contractual terms. As settlement risk, gharar may involve a continuum. On a continuum (low to high); excessive gharar is prohibited.

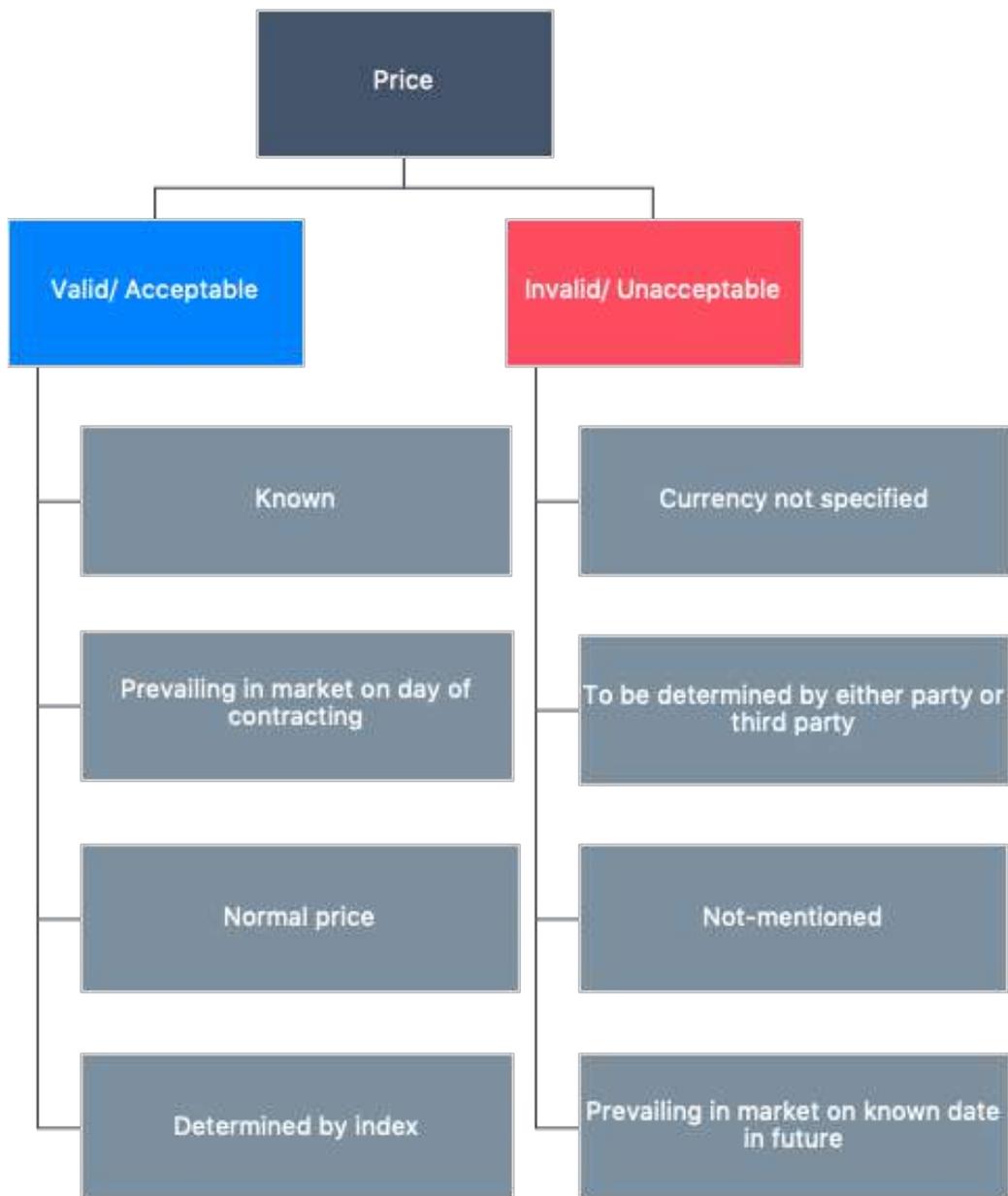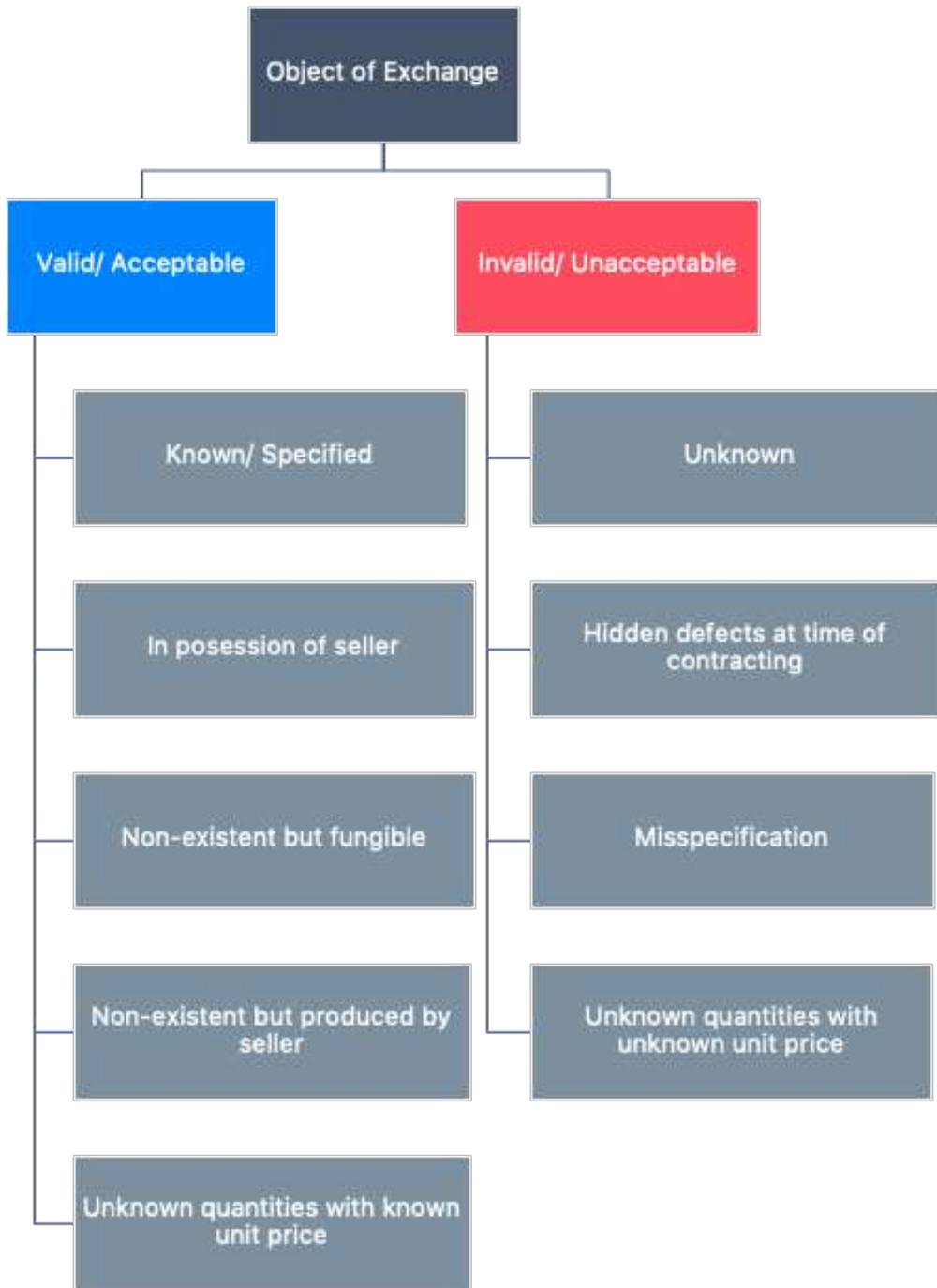Figure 1: The Dichotomy based on Price

Figure 2: The Dichotomy based on Object of Exchange

By introducing new conditions in the game; gharar may be reduced to "acceptable" levels. A few examples follow.

Salam: When seller is a farmer growing crops and object of sale is fungible with the consequence of reduction of settlement risk – scholars introduce limited flexibility (advance payment of price; deferred delivery)

Istisna: When seller is manufacturer with the consequence of greater reduction of settlement risk; scholars permit greater flexibility (progress or deferred payment of price and deferred delivery)

Istijrar: When it is a case of repetitive transactions by a given buyer from the same seller; settlement risk is further reduced. It follows that permissible level of flexibility should be higher. istijrar is characterized by reduced information asymmetry as well as enhanced trust among parties with interest to prolong the business relationship. One may consider multiple ways to settle the transaction in future.

- at the prevailing (to-be-determined) price in future (highest level of settlement risk and hence, not acceptable)
- at <u>average</u> price over a period (interval)
- at a <u>pre-determined</u> price in future
- Stipulation of options with pre-determined exercise prices
- Stipulation of options with triggers (options get activated when upper or lower bounds are breached) and pre-determined exercise prices
- Stipulation of options with pre-determined triggers and to-be-determined (average) exercise prices

Moving from a to b: This will imply marginally lower levels of risk with "averaging" of prices in an interval, but may not still be acceptable[3].

Moving from a to c: This will imply much lower levels of acceptable risk and the transaction will be settled like an Istisna contract.

Moving from a to d/e/f: Options essentially have risk-reducing feature[4]. Stipulating options with pre-determined exercise price will bring in additional value by reducing risk below acceptable levels. The comparison between different types

[3] For Shariah basis of "averaging" refer to Appendix 2
[4] For Shariah basis of "options" refer to Appendix 3

of option-related features (especially one that again brings in the notion of "average" price as the exercise price) can be tricky and may involve higher or lower risk that a known exercise price.

An Objective View of Gharar:

Define as a variable (`lambda`) that is a function of several factors.

Define level of gharar as `lambda`

Whereas classical fiqh views gharar to be a Binary Variable
`lambda` = 1 (gharar qaleel or acceptable gharar)
    = 0 (gharar katheer or unacceptable gharar)

We define
`lambda` = f [SR, C, Tr, ...] where SR = Settlement Risk; C = Complexity; Tr = Level of Trust between Buyer and Seller
SR = f [SB, SS] where SB = Settlement Risk with Buyer; SS = Settlement Risk with Seller

SB = f [P, D, Tp, Ob...]
where
P = Price Risk also measured by `sigma`;
D = Default/ Bankruptcy Risk of Buyer
Tp = Terms of Settlement - Payment (one-shot or progressive or future)
Ob= Availability of option with buyer to settle at exercise price

SS = f [B, M, O, Ts, Os ....]
where
B = Business Risk (adverse monsoon for farmer etc.);
M = mithli or fungibility or degree of product differentiation
O = Ownership of production function (ordinary seller, farmer, manufacturer, trader)
Ts = Terms of Settlement - Delivery (one-shot or progressive or future)
Os = Availability of option with seller to settle at exercise price

Tr = f [Fq, ...]
Where Fq = Frequency of transaction between buyer and seller

C = f [I, Ob, Os....}
where
I = Interdependence of contracts (presence of conditions; contracts; scenarios)
Ob & Os, as above

It is also useful to define `lambda*` as level of gharar which is on the borderline or which may be deemed as the cut-off level of gharar. For instance, can we equate this as the generalized case of settling a simple transaction in a free market at normal price?

Based on this, we may run "what-if" function on multiple combinations of the variables under alternative scenarios to categorize different versions of istijrar. For instance, the introduction of multiple types of options – upper and lower bounds as triggers; exercise prices (averaging of prices; pre-determined prices) should bring down `lambda`; even while it may increase C (complexity).

Designing New Versions of Istijrar

From the above discussions, it follows that permissibility to a contract can vary along a continuum of levels of gharar (with possible trade-offs between gharar-inducing and gharar-reducing factors associated with alternative contractual scenarios). Therefore, one may always look at the possibility of designing new products/ contracts or newer versions of istijrar by finding new permutations and combinations of gharar-related features in a contract.

An Example of Istijrar with Options Triggered by Price Volatility[5]

A well-documented case of istijrar exists in literature where a unique combination of gharar-inducing and gharar-reducing features are set-off against each other, while the product has been deemed Shariah-compliant. It is the istijrar product used by an Islamic bank to finance repeat purchase of cotton.

Istijrar as used by the Islamic bank is an Islamic mode of financing for transactions relating to various commodities, raw materials and goods such as cotton, edible oils, pharmaceuticals, including a range of other products, which does not charge

[5] Obaidullah, M (2005) Islamic Financial Services, Scientific Publishing, King Abdulaziz University, Jeddah

a profit on the basis of time. Instead, the sale price, payable to the Bank, is determined by market forces.

Istijrar financing enables buyers to conveniently obtain commodities, goods and raw materials, required by them in their trading, supply and manufacturing operations. Istijrar is an instrument, with built-in options, aimed at reducing the inherent risks, in case of volatile market price fluctuations. The sale price is taken as the average of the market prices, during the financing period, relating to the particular commodities/goods involved in the transaction, determined by authentic and undisputed sources. The istijrar Agreement provides an option to the buyer to fix sale price at any time on or before the due date, provided that the market prices exceed the defined upper limit. The price would then be payable by the buyer to Bank on the due date. Similarly the Bank has the option to close the deal under volatile price fluctuations, provided that the market price falls below the defined lower limit. In such case, the Bank will declare the pre-determined provisional price to be the sale price, to be paid on the due date.

The instrument contains embedded options, which is the right to fix the price at which settlement will occur at anytime before contract maturity. At the time of contracting t_0 both parties agree on (i) a provisional settlement price P* and (ii) an upper and lower bound around the P_0. (bank's purchase price at t_0).

For better elucidation (Figure 3 below), the different prices are shown in a continuum as one goes up. Prices increase as one goes higher. If
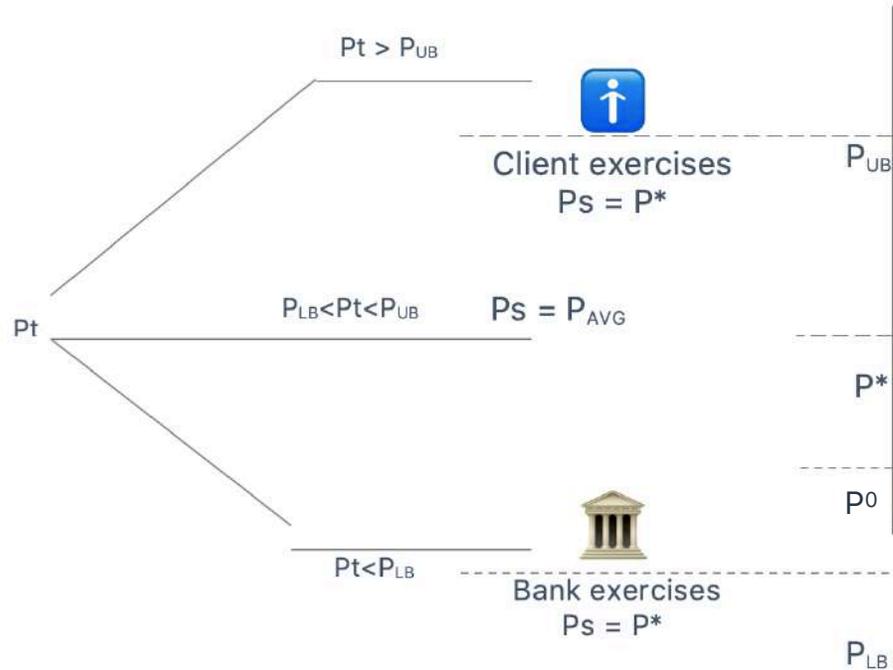
P_0 = The price that bank pays to purchase underlying commodity;
P* = provisional settlement price;
P* = $P_0 (1+r)$; P_{LB} = lower bound price;
P_{UB} = upper bound price; P_{AVG} = average price;

Figure 3: An exposition of istijrar

The actual settlement price (P_S) at t_{120} would be as follows:

> (i) $P_S = P_{AVG}$; if the underlying asset price remained within the bounds; or
>
> (ii) $P_S = P^*$; if the underlying asset exceeds the bounds and one of the parties chooses to exercise its options and use P^* as the price at which to settle at maturity.

Note that these options enable the parties to guard themselves against extreme volatilities in price. It allows them to choose between average price and a provisional price. When spot price keeps increasing and even breaks through the upper bound it would be wise on the part of the client-buyer to consider exercising his option and choose the provisional price instead of average price. Whether he exercises the option or not would depend on how he expects spot price to move over the remaining period of the contract. If he believes that price would continue to increase and hence, the actual settlement price (average) would be higher than the provisional price, it will be in his interest to exercise his right and fix the settlement price at P^*. The converse would happen should spot prices fall and break the lower bound. The seller-bank would now have the option to fix the settlement price at P^*.

Suggested Istijrar Application in Microfinance

A suggested application of istijrar in Islamic microfinance has been proposed based on the failings of bai-muajjal application in microfinance.

Provision of microfinance using murabaha or bai-muajjal has a few major shortcomings. One, microfinance involves provision of credit in small-value and repetitive transactions. When microfinance is offered using bai-muajjal or murabaha, it involves the MFI purchasing an object (that takes the form of livestock, merchandize or machinery, as the case may be) from the vendor and reselling the same at a higher price with deferred payment facility. The large number of small-value and repetitive transactions makes it extremely difficult for the parties to fulfil the conditions of Shariah compliance (e.g. sequencing of the two sale transactions in each murabaha/ bai-muajjal). The additional requirements of proper documentation for formal contracting make it a cumbersome and costly game in the rural setting and in the context of a multitude of transactions. As a result, Islamic microfinance institutions often find it difficult to ensure Shariah-compliance in form and spirit and the transactions end-up as cash-now-for-more-cash-in-future raising the suspicion of riba.

Supplier's credit is a critical component of working capital financing needs of micro and small manufacturers and crafts men/women. When raw material and other critical inputs are provided by the supplier(s) in bulk on the basis of murabaha/ bai muajjal, the working capital related investments increase, bringing down the returns of micro-businesses. Alternatively, when inputs are supplied based on a number of short-term sub-murabaha transactions under a master-murabaha, this may become unduly cumbersome in both execution and documentation for both the institution and the client. Also, such an arrangement may involve significant price risk for both the parties in a volatile market.

A way out can be found in Istijrar like instrument allowing to purchase the supplies from time to time in required quantities. Each time there is no offer and acceptance required. There is one master agreement where all terms and conditions are finalized.

Role of Blockchain

Blockchain has the potential to create a platform where exchange transactions of all kinds including istijrar are executed seamlessly by:

- Eliminating the possibility of concealed and disguised riba with complete transparency
- With all the flexibility in settlement of transactions as permitted by Shariah
- With the transparency and granularity provided by the technology to micro and recurring-transactions
- With relationship-based and experience-based price and quantity fixation by buyer and seller (e.g. Price discount by seller as the total quantity crosses a threshold)
- Expanding volumes with use of fiat as well as crypto currencies
- With transparent costs and mark-ups where applicable

Shariah encourages trade and forbids riba. The transparency associated with blockchain should eliminate the possibility of concealed and disguised riba through various legal tricks. Shariah also forbids gharar when its is excessive. Gharar or uncertainty opens the possibility of conflict between actors. Gharar is related to complexity, lack of information (transparency). Blockchain technology can potentially be used to control this variable and bring in additional value by promoting relationship-based trade and exchange.

Appendix 1:
AAOIFI Shari'ah Standard No 31

5. Scope of Gharar in Exchange-Based Contracts ('Uqud al-Mu'awadat)
    5/2 Gharar in the object of the contract
    5/2/2 Gharar in the price or rent of the contract's object (pg 776 & 777)

Gharar could arise when, for instance, a commodity is sold without mentioning the price, or when the price is left to be determined by one of the two parties of the contract, or by a third party. Another example here is the case of somebody purchasing a commodity for an amount of money in a bundle or in his pocket. A third example is purchasing the commodity by using a currency which the buyer ignores its issuer and has no indication that could help him to know it. In all these cases, gharar nullified the sale contract.

However, there are some cases where gharar in the price is permitted, as – for instance – when the sale contract is concluded at the market price on the day of purchase, or at the price people usually sell at.

Sale with forgivable gharar in price could also include purchasing commodities through bay' al-istijrar, in which the buyer obtains the goods regularly from the seller for a price to be determined subject to the price that people normally sell at, or subject to an index, and even after consumption of goods in question.

A similar sale contract is that which comprises selling, at unit price, of a quantity of the commodity which the buyer can see, yet does not know its exact amount or total value. That is to say, one could sell a quantity of grains at the price per kilogram, or he could rent a car at a rent per mile, so that the payable amount of rent is determined after reaching the target destination.

Furthermore, such sales may include concluding a lease contract at the rent normally paid for similar property, or for a variable rent to be indicated by a specialized index.

In all these preceding cases, the contract does not become null and void.

Appendix 2:
Shari'ah Basis of Averaging

Shariah has preferred or upheld the concept of "average" on several occasions. As a general rule, where there are many standards, the average should be chosen. The Quran ordains that one who breaks his swearing, his penalty (Kaffarah) is to feed ten poor the average (awsat) diet that he serves his own family. In his famous commentary on the Qur'an, al-Qurtubi says: "That (i.e. awsat) here means the rank between two degrees and middle of two extremes. In the same sense is the Hadith, "the best of affairs is the average one", reported by Ibn Majah. Muhammad bin Yahya reported from Ibn Abbas that a man used to feed his family graciously (sometimes) and (at another) used to feed his family niggardly, so the ayah enjoined (to feed the poor) the average diet that one feeds his family. It is obvious that average here means what we have just described, i.e. something between two (extreme) objects. The above statement of al-Qurtubi clearly shows that where there are many standards, the average should be chosen.

A person sometimes arranges a feast for his family and sometimes feeds a simple meal. So instead of asking him to provide food of the best quality to the poor that he ever takes, or instead of permitting him to serve an ordinary meal, the average food was required. This is so because the high quality will be good for the poor, but it will burden the feeder. On the other hand, serving the ordinary meal will be easier for the feeder, but it will hurt the poor. <u>It is also not required to serve the food of the day of swearing in or the food of the day of breaking it</u>. Rather the average food has been ordered to observe the interest of both.

Another instance is the Hadith in which it is reported by Ibn Abbas that while sending Mu'adh ibn Jabal to Yemen, the Prophet (pbuh) cautioned him not to take the best quality of goods as zakat. Al-Tirmidhi reports the statement of the famous expert of the Prophet's traditions – Ibn Shihab al-Zuhri – who reported that whenever the collector of zakat came, he divided the entire flock of sheep into three categories: one third the best quality, one third the lowest quality and one third the middle class and then the collector took the sheep from the middle class. This tradition also suggests that the consideration of average will be desirable, or at least, permissible where an object has different qualities.

Appendix 3:
Shari'ah Basis of Options

Broadly, the classical fiqh literature classifies options into the following categories, though minor variations in the classification scheme have been reported by some scholars: khiyar al-shart (option by stipulation); khiyar al-tayeen (option of determination or choice); khiyar al-ayb (option for defect); khiyar al-ruyat (option after inspection); and khiyar al-majlis (option of session). Some scholars view khiyar al-tayeen only as a specific form of khiyar al-shart. Some authors discuss about two other options - khiyar al-wasf (option by misrepresentation) and khiyar al-tadlis (option by fraud); while others prefer to discuss these under the broad category of khiyar al-ayb. Of the various options, the ones that are potentially useful for our discussion are khiyar al-shart (option by stipulation or option as a condition) and khiyar al-tayeen.

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 assent or ratification to the contract. Such option is also termed as khiyar al-tarawwi (option of reflection) by some scholars.

There is a consensus among jurists belonging to all major schools regarding the permissibility of khiyar al-shart. 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. 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. All such contracts involving exchange of counter values either from one end or both, and which are inherently cancelable at any later date, may contain these options. Deposits (wadiah) do not fall in this category, as these are not in the nature of exchange contracts. It may be noted that such contracts always provide the option to the depositors to call back their deposits at any time. Hence, providing any further option makes no sense. Options are permissible in leasing (ijara) and guarantee (kafala). In debt transfer (hawala),

there is a difference of opinion regarding the permissibility of such options. In a pledge (rihn) contract, the pledgee always holds the right to annul the contract and there is no need for any additional stipulation for him. An option may however, be stipulated for the pledgor. The contracts, which cannot contain such options include currency exchange (bai-sarf), and advance sale (bai-salam). The Malikis however, allow options in bai-salam if the period is very limited. What is clear from the discussion undertaken in a large body of literature devoted to the subject is that the primary considerations underlying the prescriptions of various jurists are: benefit of both parties to the contract and avoidance of any potential conflict or litigation between them. The following points that are found acceptable by at least 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. This last feature opens up the possibility of managing risk arising out of price volatility, so common in modern markets.