TIME VALUE OF MONEY AND DISCOUNTING IN ISLAMIC PERSPECTIVE: RE-VISITED

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In an article titled *Time Value of Money and Discounting in Islamic Perspective:* published in the *Review of Islamic Economics,* volume 1, No. 2, 1991, pp. 35-45, M. Fahim Khan argued that the “prohibition of interest in Islam denies any recognition of time value for money” despite the fact that rent, wages, *Bay' Mu'ajjal* (deferred payment) and *Salam* (immediate payment against deferred delivery) all “include a fixed and pre-determined element as compensation for time”. He argued that “the difference in the present and future values of the same commodity cannot be considered to have been allowed just because of the pure time element involved”, but rather for recognition of changing forces of supply and demand. He refused the idea that in *Bay' Mu'ajjal* the time factor is always reflected in a higher price against deferment of payment. He further argued that the decisive element in the prohibition of financing lease, as well as of interest, is “that Islam does not permit a fixed and pre-determined time value of money”, admitting that time preference and time value of money are revealed “by confronting a consumer with a choice between present and future consumption and finding out his point of indifference”. He considered risk-bearing as the permissible basis for profit earning in Islam, and lastly suggested that the “rate of return on deposits of Islamic banks” can be considered to be the most sound rate of discount for project appraisal necessary for investment decision in an Islamic economy.

There are several points in this article that call for discussion, especially that many contemporary writings in Islamic economics and finance take it for granted that time value of money is derived purely from consumption preferences and find themselves confused between the prohibition of interest on one hand and the recognition of value differences related to the time element in real market transactions on the other.
I. Is the time value of money a purely consumption phenomenon?

There is no doubt that time is important for human beings in all their relationships as time is in fact life itself. Human beings carry out all their activities through time. Ḥay Bin Yaqqan - the original Arabic version of Robinson Crusoe - found himself in an island alone and noticed from his own experience that eating an apple or cooking a fish, or accidentally discovering fire, takes time. Consumption requires time for us to enjoy and derive utility. Ḥay Bin Yaqqan also recognized from experience that he could build a cottage to protect himself from sun-light and cold wind, using woods he essentially collected for fire. He also discovered that instead of eating the seeds of his fruits he could throw them on the ground and have other trees growing that will give him more fruits later. Robinson Crusoe recognized that by abstaining from consumption, applying further purposive effort and thinking he could transform his savings into productive goods such as a cottage, new trees or pieces of wood and stones to be used as tools in hunting and in increasing his physical capabilities.

This investment process, (i.e. the process of transforming consumption goods into producer goods by exercising new, planned and purposive effort), is done through time and it usually gives positive results, i.e. more income in the future. Ḥay Bin Yaqqan also realized that investment is always surrounded by risk and uncertainties. He could not acquire perfect foresight about the future since there are many uncontrollable elements and factors that influence the process of his investment. In a social context additional factors, relating to demand and supply forces, are added to this wholesome uncontrollable factors that affect the result of investment.

Consequently, there are three points that need clarification with regard to time preference:

1) The act of eating an apple today yields exactly the same utility to the consumer as the act of eating an apple tomorrow other things being equal, i.e. apple of the same size and quality, no change in taste, no saturation, no diminishing or increasing utilities .... etc. Hence, a consumer need not necessarily prefer an apple today to an apple tomorrow.

2) An investor is implied in each consumer/income earner. A consumer knows that giving up today part of his/her income for investment use, this usually gives higher income tomorrow. Consequently, while abstention from consumption does not entail any increase in future income, the use of savings in a productive manner usually brings about higher income that makes a higher level of consumption accessible. At this stage it is necessary to make explicit an assumption which M. Fahim Khan did not make in his paper, that human beings prefer more consumption over less consumption.

The implication of the above is that I will not give up part of my income today (as an investor) without having an expectation of getting higher income tomorrow. This expected increment is the compensation to the investor for making saving today and it is his main source of time preference and time value of money.
3) Although a positive expected return is necessary for the decision to invest, it is a fact of life that the actual, realized outcome of investment may differ from the expected return because of risk and uncertainties which are interwoven with any investment process.

Time preference in real life is an investment phenomenon which is much more than a purely consumption phenomenon. Justice and fairness require that the time value of money be related to the outcome of investment, risky and uncertain though it is in real life. Therefore, the prohibition of interest in Islam is not a sine qua non to denial of recognition of time value of money. It is rather an objection to an unfair and unjust approach of its evaluation. The compensation of the income earner should be the actual ex-post outcome of investment. If investment is undertaken by the income earner, i.e. the producer goods are owned by the same person who expends mental, organizational and entrepreneurial efforts necessary for investment, the whole outcome must belong to the same person. If, however, investment is undertaken by a person different from the owner, the increment added to the original investment should be shared between the owner whose assets have actually grown and the entrepreneur who contributed the indispensable effort. On the other hand, if there was no increment or if there was a decrease in the original amount of investment, then it is the property owned by the owner of investment funds that goes down, and the entrepreneur’s efforts go wasted as they fail in bringing any good.

II. Profit and risk bearing

Risk bearing, on its own merit, is not a factor of production because risk does not create a value added. Human rationale requires that only those who contribute to a production process should be entitled to share in the output of that process. If we follow the common classification of the factors of production into capital, labour, land and entrepreneurship, then the providers of these factors should exclusively share in the outcome of the process.

Investment necessary for the production may be provided by income earners either in physical form as producer goods or in a cash form whereby money is used for, or substituted against, purchasing factors of production. Obviously, the owner of the invested money becomes an owner of what the cash is substituted for. Consequently, profit is earned by virtue of ownership and not of risk bearing. That ownership is the basis for earning profit seems to be the economic explanation of the ever repeated statement of Muslim scholars throughout our Fiqh books that “profit is earned by ownership and work”

He who owns a property is fully entitled to all increments resulting out of the property. Property may grow by a natural process without human interference such as natural grass coming out in a lot of land after the rainy season. Growth may also be a result of external socio-economic factor in which the owner has no participation
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whatsapp such as an increase in demand. However, human experience indicates that growth takes place because of purposive and planned effort effected on the property either by its owner or by another party. The claim of a growth-producing human effort on part of the actual increment is justified by the fact that human effort contributed to producing the increment.2

On the other hand, owners of physical assets are exposed to risk of loss, destruction, lack of demand, competition, etc. Ownership itself is characterized by risk and uncertainty. Earning a profit cannot be justified by "risk bearing" which is a characteristic of ownership as risk bearing is not the reason for earning profit, i.e. deserving a share in the increment. Risk baring is not a factor of production while capital goods are!

This distinction is very important when we talk about the Islamic financial system. In Islam, risk bearing alone is not considered as a reason for earning profit. The example Shari'ah provides is Kafalah (guarantee). Kafalah embodies risk bearing by adding one's own guarantee to somebody else's responsibility without contributing to a production process or being an owner of producer goods. In Kafalah ownership is separated from risk bearing. Shari'ah prevents earning any return or profit3 for providing Kafalah, although it recognizes the risk-bearing nature of Kafalah.

III. Rent, wage and profit

In any society there may be different legal formulae for the combination of productive factors and these different formulae influence the distribution of risk. Fairness in transaction also requires that exchange contracts be compensatories. There should be a balance between responsibility and gain. This is required in the Islamic system as well as in human rationale.

One legal formula of factors of production combination is one in which the entrepreneur acquires investible funds on the basis of sharing the outcome of investment. Under this formula, the financier actually and legally owns the enterprise's assets. Profit will be distributed between entrepreneur and financier in accordance with agreed sharing ratio while losses will be born by the owner of the assets as explained earlier.

Another formula of combining the factors of production may be in dividing the enterprise into two separate and legally independent units, each of them makes an independent enterprise. In the first enterprise, owner of investible funds takes entrepreneurial decisions of buying, owning and maintaining fixed assets and selling their usufruct. In the second enterprise, the entrepreneur/lessee rents fixed assets, i.e., buys their usufruct, the same way as one may buy the man-hours of labourers and proceed in one's investment enterprise to produce, say, cloth. In the first firm the output is the benefits that may be extracted from the fixed assets. The same is an input in the second firm. The rent acquired by the first firm is its gross income which is - like any producer good - subject to deduction of operation costs in order to reach its net income. The relative stability of the gross income of this firm throughout the period of

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the lease contract is caused by the nature of its output (usufruct) which can only be measured by units of asset per unit of time. This fact does not mean that there is a time value of money involved in rent if rent exceeds the asset’s depreciation. To illustrate this point, let us take the example of transportation whose output is measured by passengers per mile. We cannot derive a distance value of money simply because the output of transportation industry occurs only through distance and when transportation fare exceeds its cost and depreciation. By the same token, there cannot be apple value of money simply because apple sale price is more than apple cost! Consequently, there is no time value of money in the lease business even when the rent exceeds fixed assets’ depreciation, as mentioned by M. Fahim Khan (page 35). This is because the increment obtained is a profit of the lease business, as the rent in leasing, being a price, is subject to the same factors that determine any other market price. The time element involved in the lease business is part of the nature of the product of this business itself. Selling any output for a price that exceeds its paid cost is after all the purpose of business itself and that applies to the production of apple, usufruct of fixed-assets or any other product.

Consequently, in a lease we are actually splitting the investment decision into two independent firms: the lessor’s and the lessee’s. Each one of them is subject to the market forces which in the final analysis determine the net return on investment in each firm. Lease, as defined by the *Fuqaha’*, is simply sale of utility of a fixed asset (or of a labourer). The rules that apply on sale in general also apply on lease. The most essential principle relevant in this regard is that human beings are authorized - within the legal framework of *Shari’ah* over their property to dispose of it the way they like.

In a third formula of combining factors of production, the investor may obtain investible funds on the basis of interpersonal relationship, i.e. a loan obtained against a personal pledge (which may be supported by a collateral) to be repayed later on. Funds, in this case, become a property of the investor who transforms them into fixed and working capital for the production and collects the whole outcome as his profits or bears the losses therein. The owner of funds becomes an owner of a pledge which is an abstract right on the debtor. Abstract right as a form of interpersonal relationship is, by its very nature, not susceptible to increase or decrease. Consequently, he/she is no more an owner of assets involved in production, and therefore he/she is not entitled to any part of the output of investment.

**IV  Time Preference, Time Value of Money and Bay‘* Mu‘ajjal**

Earlier in this paper, we argued that the time value of money is an investment phenomenon not a phenomenon related to abstention from current consumption. Time preference is, therefore, a real factor in the mind of the income earner and provider of investible funds. We also argued that the valuation of time preference can only be affected *ex-post* because its nature does not allow an opportunity of knowing it *ex-ante*.
How then would people take an investment decision without anticipating certain value for time preference? The fact is that human beings do undertake investment. They have been doing it since Hay Bin Yaqzan. This indicates that they make certain calculation - within their minds - of the compensation they like for sacrificing their time preference. Hence, any investment decision has an implicit time value of money. In an interest-free economy, the anticipated time value of money is obviously estimated on the basis of accumulated experience as may be projected into the future. Since interest does not exist, there will be no reference, in such an economy, to interest rate in the process of formulating expected time value of money in the minds of the owners of investible funds.

All the requirements of Shari'ah in this regard focus on the point that the determination of any return on investible funds has to be related to, and dependent on the actual net profit. Shari'ah does not prevent any estimation, mental calculation or expectation of the return by either party. But it considers all these like an illusion that must not be exchanged for a real increment accruing to either party until the investment process actually produces an increment, then the shares belonging to the owner and user of funds become real facts.

To apply this idea on Bay' Mu'ajjal and Salam, one should not incorporate other factors such as changing supply and demand. Because when we talk about the time value of money, we should keep in mind that we are implicitly isolating other factors.

Muslim scholars throughout history as well as contemporary Fuqaha’ do not dispute the effect of time value of money on exchange transactions. This effect should not be made ambiguous by incorporating changes in supply and demand. Involvement in trade as a business requires a process of purchase (production) and sale. Trade has the same characteristic, that other production processes have, of ownership of goods with the intention of selling at a higher price than their cost. In Bay’ Mu'ajjal and in Salam, the owner of investible funds incorporates his/her expected time value of money in the investment process he/she pursues. The fact that once a contract is concluded in Bay’ Mu’ajjal, we reach the ex-post evaluation of time preference does not change the nature of the process. In Bay’ Mu’ajjal one begins by the mental operation of formulating an anticipated time value of money, then transforming funds into goods, owning them and taking responsibility of one’s ownership, then concluding a deferred payment sale which transforms his/her expectation into an actual and final reality although this actual time value of money needs not be the same as the anticipated one. This process is essentially the same as in Mushârakah, Mudârakah and leasing. In Salam, the same process also takes place with some interchange between the internal steps to become as follows: (1) formulating an anticipated time value of money, (2) concluding a contract of purchase of goods and (3) receipt of goods, owning them and taking responsibility of one’s ownership, and (4) selling these goods and realizing an actual evaluation of the time value of money which may, or may not, coincide with the anticipated one.

Two Shari'ah rulings give further insight to the above mentioned analysis:
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1) The prohibition of sale at either of two different prices, spot and deferred. This is because the evaluation of time value of money is detached from the actual investment process.

2) In case of annulment of a Salam contract, the provider of funds takes back only the amount paid. This is because a planned investment process did not take place and therefore no actual time value of money is revealed.

The conclusion is that one does not need to bring any changing demand and supply forces for explaining the legitimacy of Bay' Mu'aijal and Salam as they are rationalized along the same lines of Musharakah, Mudarabah and leasing, i.e., the basis of ownership and distinction between anticipated and realized time value of money.

V. A Critical Appraisal

Before concluding this rejoinder, there are a few errors in M. Fahim Khan’s paper that needs to be corrected:

1) The equation of the net return of Capital \( r \frac{(R \times t + C) - M}{M} \) on page 37 has two mistakes: first, division of return by invested funds implies that we are talking about a rate of return not a return; second, in the preceding paragraph the writer mentioned that the lessor is responsible for maintenance and depreciation. Yet the equation does not incorporate maintenance unless the \( R \) is redefined as rent of the asset per year after the deduction of maintenance cost, which the writer did not do.

2) While criticizing the financial lease from an Islamic point of view, the writer said “that Islam does not permit a fixed pre-determined time value of money” (page 38). In fact, this is a necessary but not a sufficient condition. Even if this condition is satisfied through a device of variable interest on a loan, the return remains prohibited. A statement of sufficient condition is that “while giving a share of the net profit to the entrepreneur because of his/her efforts, the funds’ provider’s net outcome is based on ownership, not on interpersonal relationship (lending).

3) In explaining what he called the Fiqhi principle of “no compensation for time alone” (page 38): first, the writer failed to give a Fiqhi source of this principle and second, he gave a wrong example. The example he gave is that of Wadi'ah which is permissible in Shari’ah (OIC Fiqh Academy Ruling No. 66/2/7 in its 7th Annual Plenary Session held in Jeddah, Saudi Arabia, 9-14 May, 1992). A better wording of the Fiqhi principle would be “no compensation for time when completely detached from an investment process” and a better example would be “the prohibition of any compensation for the re-scheduling of debt”. This principle is repeatedly mentioned by Fuqaha' whenever they talk about the
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prohibition of *Riba* as ‘eating people’s funds in vanity’ and there are many sources of it.

4) On page 40, the writer assumed that the longer the time frame of an investment, the higher would be the anticipated time value of money. For this assumption, he did not provide an empirical or theoretical rationale. In our opinion, this is not a theoretical matter and it requires only empirical testing. The example of long-term investments of IDB (using Islamic modes of financing) and the World Bank (using interest-based modes of financing), both indicate the opposite. However, this whole assumption is not needed for the argument of the paper.

5) In proposing the rate of return on deposits of Islamic banks as a good approximation of the rate of discount in the mental calculation of returns on investment, the writer did not make a distinction between owner of funds’ decision and investor’s project appraisal decision. For the investor who discounts future returns in order to compare them with the cost of funds, the rate of return realized in *Murābahah* of Islamic banks would be a better approximation, for *Murābahah* is one of the most risk-averting modes of Islamic financing.

Whereas for owner of investible funds the rate of return on deposits of Islamic banks represents a good approximation of the opportunity cost, he/she sacrifices for committing his/her funds to an investment. This rate makes, therefore, a good approximation for the anticipated time value of money.

VI. Conclusion:

This rejoinder aimed at clarifying the concept of time value of money in Islam and I fully agree with M. Fahim Khan that Islam recognizes the presence of time value of money and emphasize that as the time value of money is an investment phenomenon, its valuation can only be realistic if it takes place at the end of investment when its outcome becomes known. Any evaluation before that point is only illusionary. However, illusion can be used for mental operation but must not be exchanged for actual goods and services.

4. This example is suggested to me by a colleague at the Islamic Research and Training Institute, Mr. Ahmad Islamouli.