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Money Time Value and Time Preference in Islamic Perspective

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Abstract: This paper examines the roles of money time value in Islamic monetary economics, time preference decisions and economic pricing. We establish the perimeter of money time value and its implications in terms of time preference behavior and investment decisions. In the Islamic perspective, time value of money can be distinguished as economic time value through real transactions on one hand and social time value where an economic agent considers the reward of his transactions in the hereafter, on the other hand. We conclude that aside from loans, time preference is positively related to time value of money in sales operations. The social time value of money reinforces the preference for the future. Consequently, the time horizon of economic decision is lengthened in Islamic economics and the time preference is always positive under Sharia rules.

Keywords: Time value of money, time preference, interest rate, Economic time value, Social time value.
JEL Codes: D91, E22, E43, Z12

Introduction

The aversion to interest or riba is explained by its incoherence with the original function of money which is to facilitate exchange and to evaluate assets. The misuse of money is done through lending and borrowing at interest. In conventional theory, the time value of money is resulting from the concept of interest which is prohibited in Islam. In banking transactions, the monetary interest rate is the proxy of pure time value of money independently of transactions in real sector which is not compatible with Islamic principles and the objectives of social justice.

Money time value is central to Islamic monetary economics, time preference decisions and economic pricing. Nevertheless, time value of money is an issue from the Islamic perspective. Islamic economics has a distinguished conception

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of time value of money compared to the conventional one. This is related to two elements: first, there is a specific consideration of money within the Islamic framework. Secondly, Islamic economics treats the value of time in a specific manner. Consequently, in the Islamic perspective, time value of money can be divided into economic time value and social time value.

The time value of money has a direct relationship with time preference and impacts the Islamic transactions pricing[1]. Indeed, generally, time value of money lies on the consideration of positive, zero or negative time preference. The rational time preference depends on whether we consider the economic time value of money or the social time value of money. In the economic view, if time preference exists, it should be apprehended through the transactions based on real assets (*Al-adl*) and not in conventional loans. In the social view, time preference is related to the hereafter, to *Al-ihssan* through *Quardh Hassan* and *Waqf* assets.

This paper contributes to the Islamic economics literature through the reexamination of the relationship between the time value of money and the time preference in the Islamic perspective. It highlights the specificities of the time value of money- time preference nexus in Islamic economics. Besides, the originality of this study is that it specifies the rational time preference behavior in Islamic economics by considering not only the economic time value of money but also the social time value of money. This contributes to a deep understanding of the investment behavior from an Islamic perspective.

This paper is organized as follows: the second section highlights the acknowledgment of money time value in Islamic economics and presents the conditional *sharia* compliance of the money time value. Thus, given the established specificities of money time value, the third section examines the time preference and emphasizes the time value of money-time preference nexus. The fourth section concludes and underlines some recommendations.

Time Value of Money in the Islamic Perspective

Controversy in usury or interest revolves mainly around the position of time. The justification of interest requires that time has a monetary value (Mills and Presley, 1999). In the conventional economy, the interest rate is the time value of money. It represents the price of the use of money for a given period. The question is how to

1 The pricing of banking financial products can notably be distinguished on 4 elements: (1) The profit-share ratio for Profits and Losses Sharing financing (*Musharaka* and *Mudaraba*); (2) Mark-up (margin) in *Murabaha*; (3) Price discounting in *Salam* (4) Rent (*Lease* and *Ijara*).

assess the time value of money in Islamic Economics without using interest rate? At the beginning, we need to present the specific consideration of both time and money in Islamic economics.

Time Value in Islamic Economics

Time is important in economics because the economic analysis is not based on one period but on several periods. In addition, there is a temporal link between economic decisions. Time is also an economic factor of the choice of investment projects. In fact, time is considered as the cause of discounting future expected returns of projects in order to find their current values.

The Islamic system is distinguished by its moral and religious dimensions. Indeed, beyond profitability and efficiency targets, an economic agent must respect the ethical principles formulated by the *Sharia* for economic decisions. Individuals are rewarded for their economic acts. Consequently, the personal interest is placed in a long-term perspective exceeding the life since it includes the hereafter. In this respect, Islamic economic rationality includes the concept of success: material desires are not the only goals of life; success is also in the hereafter (Kahf, 1996). Therefore, in Islamic economics, the time horizon of economic decision making is lengthened.

The value of time appears in sales operations[2] as the deferred sale price is higher than the spot price. Islamic *Fikh* academy of the organization of Islamic conference has approved the difference between the spot and the term price. This means the acceptance of the value of time in setting the price of the commodity. In the sales contract, time is observed in the pricing. Then, time value is consecutive to the sold commodity without a separate consideration: it is a part of the sale price while there is no value of time in the loan (Saadallah, 1994). There is a replacement cost of time through the added value of sales (Sweilem, 2011). In other words, time is not subject of an independent trade but it is a corollary of the commodity sold. Time affects the determinants of price but it is forbidden to assign a separated compensation to it. The commodity sold is backed to time and the compensation of time is integrated in the price (Saadallah, 1996). Although time is important, Islamic jurisprudence considers it unacceptable to conclude a contract for the time isolated (time alone). That is to say that any increase of price due to time is accepted except in the loan contract. Islamic economics gives a value for time based upon the real activity (Swielem, 2011). To sum up, the evaluation of time is possible if there is an exchange of goods, but not money or loan exchange. There are differences

2 The time is incorporated in the sale operation with the differed of one of the exchange elements: either the goods (*Salam sale*), or the price (*Nasiaa sale*) or both (this is forbidden in Sharia).

between the permissible increment in a deferred sale and the impermissible increment in a loan contract. The prohibition of the value of the time in loan is explained by the same nature of the two exchange objects.

Consequently, we can highlight that, first, the distinction of time on the present life on one hand and on the hereafter on the other hand is able to influence the time value of money in the Islamic perspective as the time horizon is lengthened and the present period and the hereafter have different considerations in terms of objectives and reward. Secondly, since time itself has no value, the time value of money is related to real activity. So, the time value of money depends on the real transactions and not on the purely financial transactions. Nevertheless, to make clear the time value of money we need also to examine the money consideration.

The Consideration of Money

The main principle of Islamic economics is the prohibition of interest (*riba*). In the Islamic view, money is not a commodity and it has no value in itself. It is simply an expression of value. Money cannot be sold at a higher value than its nominal value (No exchange of money with a surplus) and it cannot be hired. Any increase in a loan (a consumer loan or investment loan) is a forbidden interest[3].

Lietaer and Dunne (2013) addressed the subject of money creation and note how to limit the use of interest rate by applying a practical model. The authors argue that the money had to perform only one function which is to facilitate the exchange of goods and services and not the reserve value function. In this sense, usury is forbidden in Islam through the exchange of money against money with a time value margin *(Riba Al Nassia)*[4]. In addition, we find *Riba Al buyuu* related to the exchange of some classes of goods under *Sharia* conditions. *Riba Al buyuu* is divided into two types called *Riba al fadhl*[5] and *Riba Al Nassa*[6]. These conditions are mentioned in the *hadith* of the Holy Prophet, peace be upon him: "Gold for gold, silver for silver, wheat for wheat, barley for barley, dates for dates, and salt for salt like for like, equal for equal, and hand-to-hand; if the commodities differ, then you may sell as you wish, provided that the exchange is hand-to-hand » (Muslim, 4/98).

According to this hadith, we understand that *Riba Al buyuu* is prohibited to avoid the use of *Riba Al Nassia or riba of loans*. Furthermore, the *hadith* presents

3 This is to ensure a direct relationship between the real sector and the financial sector and to prevent from injustice.

4 Conditional or contractual increase in the loan versus time (Al Masri, 2005)

5 Increase in value without time (Al Masri, 2005)

6 Time without increase in value (Pure time preference): فضل التعجيل على التأجيل أو التأخير (Al Masri, 2005)

the concept of time value and the concept of time preference for the present rather than the future. As we have pointed out earlier, Islam recognizes that the deferment or time reduces the value and this should be compensated by an increase in deferred sales transactions but not in loans contracts.

Actually, money is a medium for exchanging goods and benefits, but if money becomes a commodity, this gives rise to injustice. The money should be retained as an instrument of exchange and pricing. Islam considers that money is sterile as long as it is not combined with work to undertake a productive activity. When invested, money is paid not by a fixed amount but by a predetermined share of the investment return. In this view, Iqbal and Mirakhor (2006) indicate that money is a potential capital, and it will become really a capital only after its association with another resource to undertake a productive activity.

In this spirit, the application of time value of money in borrowing and lending arrangements causes money producing money, and so interest. Khir (2013) notes that, "Making money out of money through the imposition of incremental value on the loan principal corrupts the essential function of money". This means that in Islamic economics, the time value of money and return investment must not have a connection to *riba*.

Consequently, the calculation of time value of money is an issue in Islamic economics. Zarqa (1983) considers that the rate of return on investment close to risky investments can be used as a proxy of the time value of money. However, according to Khan (1991), the issue with this view is that expected return on capital includes factors others than the value trade of money such as the reward of risk which is not related to time. If we want to specify the time value of money, the author notes that we must calculate the expected returns related to time uncertainty only. In reality, the return has two counterparts: (1) the rate of return related to risk and not to time (2) The rate of return related to risk of time. As it is difficult to isolate the first from the second in projects, Khan (1991) recommends to proxy the pure time value of money by considering a portfolio with no risk or negligible risk to assess the purely time value of money. Consequently, the *expost* rate of return on capital permits to identify the pure time value of money.

We conclude that in Islamic economics, Money is not a commodity and its main functions are to assess and to facilitate the exchange of goods and services but not to constitute a reserve value. This leads to the *riba* prohibition. Yet, the *riba* prohibition[7] is not an absolute denial of the time value of money in Islamic economics. Even

7 Riba is forbidden in Islam in order to not allow agents of benefits from the use of money they received before giving the counterpart when the other trader can take advantage others.

in *Quardh Hassan*, the value of time exists but the individual will be rewarded by God in the Hereafter. What are then the conditions to consider the time value of money?

Permissibility of Time Value of Money in Relation With Real Transactions

The time value of money has been debated by many authors like ⟨Kahf, 1994; Al-Masri, 1986, 1990; Khan, 2005; Ahmed and Hassan, 2004 and Khir, 2013⟩. Al-Masri (1986) insists that Islam tolerates the time value of money. The time value of money is not ruled by Islam as it is not a part of the borrowing relationship where the rate is fixed in advance (Ahmed and Hassan, 2004). Khan (1991) also notes that there is nothing against the time value of money as this value is not predetermined in advance (time alone is attributing the future value). So, we can argue that Islamic religion recognizes time value of money only if the money is capital (i.e. associated with real activity).

Mathematically, the time value of money quantifies the value of a unit of money through time. For example, the time value of money means that $ 1,000 today does not have the same value as $ 1,000 after one year. As explained by Saadallah (1994), since the temporal context considers that current commodity has a different price in future, accordingly the current money value is different from its future value given that the value of the money is fixed in general equilibrium in relation to the value of goods and services which money can buy.

Differentiation of the value of money is linked to the difference of the time which happens. This is the time value of money. Any sum of money is a function of the time during which it is received or it was spent. There is a change in the value of the money with passing time, even with the assumption of the stability of the purchasing power of money.

The return available from investment in trade or business represents the time value of money (Mohsin, 2009). So, the consideration to time value of money requires the existence of a transacted commodity which prevents "mere exchange of money for time", as noted by Khir (2013). Some jurists argue that the increment in a deferred sale is permitted following the grounds of usufruct (*manfa'ah*). In a deferred sale, the buyer gets both the asset and its use; consequently, it is expected to pay more in return for enjoying the immediate use.

Contrary to the loan, the increment in deferred sale (*bay'mua'jjal*) is considered supplementary (*tabii*) to the spot price of the commodity. This additional price is accepted by *Sharia* only if it is associated with the original price of the commodity. So, "time can only be assigned monetary value indirectly; i.e., in association with the contracted subject matter" (Khir, 2013). Nevertheless, the increment in a loan

is not associated with anything; while the increase in the price in a deferred sale is ancillary to the price of the contracted commodity (the monetary increment is associated with the price of the commodity to avoid *Riba al-Nasia*).

Accordingly, the permissibility of time value of money is conditioned by real transactions. *Sharia* opposes to give a monetary value of the deferment alone without being associated with any commodity. We can conclude that the money time value is indirectly acknowledged *via* commodities. Islamic economics recognizes that delay involves the value decrease that can be balanced by a surplus, but this is permitted in forward sales and not in loans. Scholars share with economists the existence of the time value of money, but they are different in its practice (Al-Masri, 2005). In the following paragraph, we refine the study of time value of money by distinguishing the economic and the social time value of money. This constitutes a distinction comparing to existing literature on this topic.

Economic and Social Time Values of Money

From the Islamic perspective, time value of money can be distinguished on economic time value and social time value. The first value is related to the monetary value of money in the present life in the conventional sense. The second is linked to non-monetary value of money which intervenes in the hereafter; an Islamic economic agent considers the reward in hereafter in his economic transactions. Economic time value of money exists only in sale operations, it is forbidden in the case of a conventional loan (with interest). There is an institutional aspect of the time value of money.

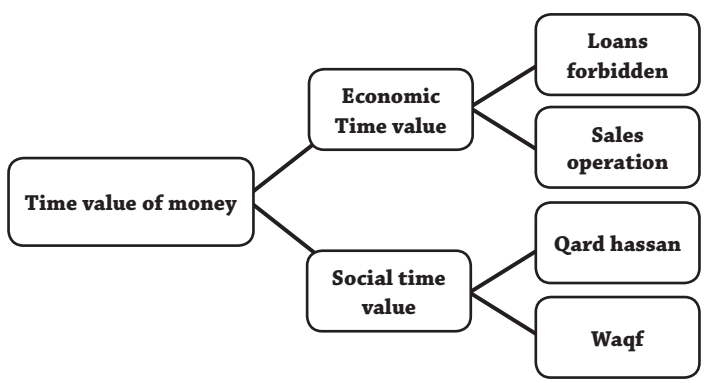

Figure 1. Components of money time value

It is worth noting that even in sale operations, there is social value because investment operation notably has a reward in the hereafter thanks to the *Iaamar* of the world.

From the Islamic perspective, an interest free loan (*Quardh Hassan*) is considered as a donation contract (عقد تبرع). The donation is the difference between the economic value of money paid by the creditor and the money received after a period of time. The lender bears a "waiver" of unsecured gains that he may enjoy if he kept his money: first, he may find an investment opportunity during the loan period. Secondly, financial difficulties can occur for the borrower and the lender may not get his money. In addition to the loss of liquidity, loan causes opportunity costs. Theoretically, the sacrifice to postpone the use of money requires that the agent will be compensated for this delay (Mohsin, 2009). Thus, the absence of economic time value of money is offset by social time value. While the economic time value of money opposes the loan with *riba*, the social time value of money encourages the *Quardh Hassan*. In this respect, as argued by Al-Masri (2009), loan is a temporal financial instrument and cannot be a tool for financing industry, commerce and agriculture. Consequently, the interdiction of interest in Islamic economics reduces the role of loans in financing and promotes the Profits and Losses Sharing financing.

The *waqf* of an amount of money is a voluntary and irrevocable dedication of cash and its disbursement for *sharia* compliant projects. *Waqf* of an amount of money does not represent an economic but a social time value. The reward of the donation leads to a social time value of money.

Thereby, the consideration of the economic time value and social time value permits to better grasp the time value of money. First, the combination of economic and social time value of money widens the time value of money in the Islamic perspective. Second, it merges different visions of the time value of money in accordance with the Islamic conception of economic activities.

We can conclude that given the specificities of time and money in Islamic economics, the time value of money is conditioned by real activity and it incorporates both economic and social aspects. *What about the impact of this specific time value of money on time preference in Islamic economics?*

Relationships Between Time Value of Money and Time Preference

Time preference is important not only in the field of deferred sales and funding operations, but also in the field of feasibility studies, projects evaluation and choice between them. The acknowledgment of time value of money in Islamic economics leads to a time preference change. Nevertheless, the particularities of time value of money affect the time preference consideration in the Islamic perspective. Time preference could also be considered according to the economic view (increasing wealth) or social and ethical view (reward in the hereafter).

In the economic view, it is recognized that the monetary sums on a time axis have different values even if they are equal in amount. So, economic agents express a time preference. In contrary, if there is no time value of money, the preference becomes only for the present and there is no incitation for the future. Obviously, the time preference is a preference for the present over the future due to some factors mainly the risk and liquidity. Time preference behavior is based on the time value of money through the reward level during a period of investment.

In the social view, the time preference is not related to monetary rewards. It is based on anticipated rewards which are not precisely quantified by the economic agent. Nevertheless, the *Sharia* indicates that donations transactions affect the well-being not only of economic agents but also of the society as a whole.

In this respect, our contribution is to reexamine the time preference in both the economic and social view. Before undertaking this investigation, we discuss the relationship between time preference and interest rate and the rational time preference in the Islamic perspective.

Time Preference and Interest Rate

Time preference behavior is based on the time value of money through the assessment of its futures values. Since Bohm-Bawerk (1889), the positive time preference is a justification for the existence of a positive rate of interest. For instance, since people have a defective imagination and they are aware of their future needs, they have a time preference for the present in order to enjoy the present life rather than sacrifice for tomorrow (Bohm Bawerk, 1889). Thus, according to the author, positive time preference is a normal pattern of behavior. Likewise, Alchian and Allen (1967) consider that positive time preference is a principle of rationality. The rate of interest must be high enough to offset the positive time preference and the secular decline in the marginal utility of saving. This means that in the conventional perspective, a positive interest rate is required in order to offset the marginal disutility of saving associated with positive time preference (Ariff, 1982). At a low interest rate, dissaving may occur. Further, inflationary expectations tend to increase the value of time preference and decreases saving.

Yet, even in a conventional economy, many others do not agree about the systematic relationship between time preference and interest rate. In fact, Samuelson (1958) considers that the existence of a positive rate of interest in a society does

not support the validity of the assumption of positive time preference[8]. Moreover, the marginal time preference rate is independent of the institution of interest rate (Sudgen and Williams, 1978). The authors argue that time preference exists independently of any system by which trade intervenes.

According to the Islamic perspective, as the time value of money is not related to interest rate, time preference is consequently far from the interest rate. Askari, Iqbal and Mirakhor (2015) consider that although the rate of time preference may be needed to determine the equilibrium consumption-saving behavior in an Islamic economy, "there is no strong theoretical justification for assuring that the rate of time preference is fixed, predetermined and equal to the market rate of interest".

Pure time preference is one of justifications of interest, but it is not the only one, since it is also related to the uncertainty, the inflation and the opportunity of investment (Siddiqi, 2006). The author explains that the relationship between the interest rate and time preference is weak (1) the interest rate is nominal while agent considers the real interest rate, (2) taxes are paid on the interest income according to their respective tax brackets, (3) the interest rate does not wholly represent the lender's time preference but it integrates a part of the interest rate for the payment of risk undertaken by the lender.

In the explanation of Frederick, Loewenstein and O'Donoghue (2002), time preference could be thinking about the avoidance of inflation or uncertainty or the lack of investment opportunity or the combination of these or more factors. So, we can conclude that the time preference is not systemically related to the interest rate even in conventional view. If interest rate is removed in Islamic economics, this does not mean the absence of time preference. What is then the rational time preference in the Islamic perspective?

The Rational Time Preference in the Islamic Perspective

The natural preference of present life is outlined in the Holy Quran: "Nay, but you love this fleeting life, and give no thought to the life to come" (Surah al-Qiyamah 75: 20-21). Juristic texts legitimize the superiority of the present to the future (Al-Masri, 1990). Positive time preference supposed that the future value of good should be sufficiently and reasonably higher than its present value.

Khir (2013) argues that even time positive preference is acceptable in both Islamic and capitalist economics; its application is totally different in the two sys-

8 In fact, considering a dynamic model with two generations and positive rate of time preference but without the social contrivance of money, Samuelson demonstrates that the "rate of interest" is negative.

tems. The application of positive time preference of money leads to interest (*Riba*) in the conventional economy. For instance, time preference of money is the basis of the theory of interest in the Keynesian view which considers the interest rate as a monetary phenomenon. However, the application of time value of money in an Islamic economy removes the *riba* from the economy.

The positive time preference[9] is recognized in Islam but under conditions. The time positive preference is compatible with *Sharia* as long as no fixed and predetermined time value is assigned to money (Khan, 1991). Al-Masri (1990) defines the positive preference of time (*tafdil zamani*) as an agent economic's natural preference for the present over the future. His conception is upon the basis of the Qur'anic testimony to the intrinsic natural human preference of immediacy. In the *Sharia* view, there is a preference of the "*ain to dayn*" and current commodity to deferred one[10]. Al-Tabari (2000) states that agents prefer the immediate over the deferred. Economic agent prefers the present possession of an asset over its possession in the future. Furthermore, the time preference of present money is related to the fact that the investor can have an opportunity to invest money and earn yields. The agent has the possibility to meet incessant needs that he cannot or does not like to defer to later time. The agent would not invest money unless an expectation of positive return.

Nevertheless, many scholars disagree with the positive time preference. As noted by Khir (2013), the distinction between the present and future value of a thing is a misconception and many people prefer to keep some of their money for the future and do not spend it immediately. Khan (2005) argues that there is a contradiction if we advocate that positive time preference does not necessarily legitimize *Riba*.

Zarqa (2005) notes that neither is positive time preference a fixed rational principle nor is it empirically a predominant tendency among consumers. Indeed, both positive, zero or negative time preference are rational and observable depending upon individual situations. The preference for the future or the present is not a *Sharia* rule (Zarqa, 2005). Zarqa (1983) considers that since time preference does not always need to be positive, it couldn't provide a valid base for discounting[11].

9 The term of positive time preference was invented by the economist Eugene Von Bohm-Bawerk, (Kahf, 1994).

10 تفضيل العين على الدين والمعجل على الموجل

11 Zarqa (1983) suggests that for private projects, rate of return on projects with similar risks should be an appropriate rate of discounting while for public projects, the "discount rate should be adjusted downward to reflect the common view that such projects are less risky and the objectives are more complex" (pp. 230-31).

According to Siddiqi (2006), people may not generally have a pure positive time preference. A rational consumer can either have positive or negative time preference (e.g., Henderson and Quandt, 1971; Robinson, 1953). Consumers may have a negative time preference if they expect a future decrease in their income, or a future increase in their need with constant income in order to maintain their past level of consumption. Positive time preference assumes that needs are constants and that income is always rising. From this perspective, declining income leads to negative time preference. There is counter example of positive time preference such as: agents keep on saving in interest-bearing accounts even when the real expected rate of interest is negative for certain years.

Thus, given the absence of a consensus about time preference and different arguments of researchers which are mentioned above, it seems very relevant to consider, like time value of money, the economic and the social aspect. We think that time preference in the Islamic perspective must be more specified and distinguished according to the conception of the time value of money (conditioned by the real activity) and then to the economic time value of money and social time value of money, after examining the relationship between time preference and real economy.

Time Preference Related to the Real Economy

To prefer the future, the economic agent should be rewarded for his deprivation of money and his decision to invest in real property. The more is the award, the higher an agent is ready to defer his consumption.

Kahf (1994) criticizes the view of Khan (1991) assuming that the notion of time preference is purely derived from consumption preferences. According to Kahf (1994), time preference in real life is more an *investment phenomenon* than a purely consumption phenomenon (a preference of present consumption over a future consumption of money). So, the choice of investment is conditioned by getting higher income or higher investment return in the future. The expected investment return is the compensation for making saving or investment today (Kahf, 1994).

In the Islamic perspective, time preference leads more to choose investment as the time value of money is conditioned by the real sector. For instance, the specific time value of money related to the real sector leads to no time preference in the case of loan but rather to a time preference related to a real sector. Time preference is then conditioned by the relationship with the real economy, in others words it is connected with the investment in real projects. The time preference is considered not in the sense of letting inactive money or no risk but in the sense of investing

in real projects. This conducts agent to discounting future benefits and to compare them to the costs of investment. Instinctively, time preference tends to the present; if it is turned to the future this supposes a term value much greater than the present value. So, time preference is related to the profitability of projects. The conception of time preference is a corollary of more investment if the return projects are high. Consequently, in Islamic economics, a strong economy is required since the profitability stimulates investment and increases the time preference.

Consequently, time value of money increases with the term of the real transaction. The time value of money is compliant with *Sharia* under the assumption that this value is derived from a real activity. However, the sales transactions are mostly with forward payment and the preference change is done through the introduction of forward margin. Besides, *Salam* contract emphasizes time preference: the price paid in advance for delayed goods is less than the cash.

In the case of *Murabaha*[12], the mark-up must be known, agreed between two parties[13], and not revised in order to avoid *gharar* or uncertainty. It must not be subject to price variation or indexed on currency variation for example[14]. In fact, this margin should not be reassessed or based on an indeterminate rate (Article 4/6 standard Sharia AAOIFI no. 8, *Murabaha* to purchase order). Further, "Profits of *Murabaha* or *Murabaha* to the purchase order are recognized at the time of contracting if the sale is for cash or on credit not exceeding the current financial" (Article 2/4/1 standard Sharia 8 ; AAOIFI, 2004). In the case of late payments, they should not constitute a balance sheet item and must be paid to charities. Besides, Khan (2013) considers that the current issue of Islamic finance is to establish an alternative to London Inter-bank offered Rate (LIBOR) since Islamic banks continue to use LIBOR as benchmark rate.

To sum up, in the Islamic economy, time preference is connected to the real economy which strengthens the relationship between time preference and investment. The pricing in the *Murabaha* and the *Salam* gives evidence of the interconnection between both the value of money and time preference to the real transactions. *What about the relationship between economic and social time value of money and time preference?*

12 *Murabaha* is a resale transaction of asset that Islamic bank has purchased for resale to its customer.

13 The margin should be indicated by the seller when concluding the contract, if this is not done, the sell becomes a *baiy Almousawama*.

14 However, BC Malaysia implemented an adjustable variable rate monthly for operations based on *bay bi thaman mouajal* which is very close to the *Murabaha*.

Linkages Between Economic and Social Time Value of Money and Time Preference

Time preference behavior is positive as long as it does not include an interest rate. In fact, as argued by Siddiqi (2006) in Islamic economics, the positive time preference does not justify the loan. In the case of a loan (*Quardh Hassan*) there is apparently a negative time preference if we consider the economic view. However, if we consider the hereafter and so the social view, we find a positive time preference as the reward in the hereafter compensates the donation contract. In fact, the absence of time value in the case of lending lead to zero-time preference but this preference becomes positive considering the hereafter. Therefore, it is important to distinguish economic and social views in the time preference behavior.

Furthermore, in the Islamic framework, it is interesting to note that Zakat encourages economic agents to have a positive time preference since the money should be invested in time and not hoarded (Prohibition of hoarding[15]) which is contradictory to a negative or zero-time preference. Time preference is influenced by the *Nissab* of *zakat* which in return affects the investment decision.

Table 1:
Economic time value of money and time preference

Economic time value of money (TVM)	**Time preference**
TVM positive	Positive time preference
TVM nonexistent or zero (case of loans)	Maximum of the preference for the present
TVM negative	Negative time preference
TVM↑	Preference for present ↓
TVM↓	Preference for present ↑

The change in the economic time value of money pushes to another time preference. If the time value of money increases, the time preference for the present compared to the future decreases. Controversy, the decrease of economic time value of money grows the preference for the present.

15 Islam forbids the hoarding of money without payment of *Zakat* and without spending them in what is profitable for individual and society. "And those who hoard gold and silver and spend it not in the Way of Allah, announces a painful punishment." (Quran, 9:34).

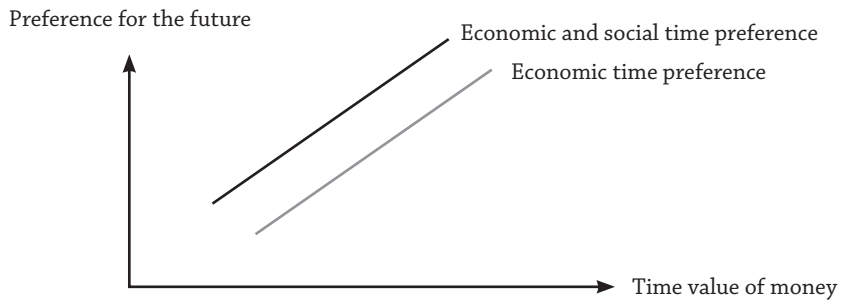

Figure 2. Economic and social time preference

If we include the social dimension of the TVM, the curve shifts upwards. For example, in *Quardh Hassan*, existence of time preference is motivated by the added social value (Economic time value of money is nul). Considering the *Iaamar* (principle of *istikhlef*), the preference for future increases is leading to more investment.

It appears that our consideration of the social time value of money stimulates the preference for the future. It incites to postpone consumption and not to be limited to the opportunities of the present if we consider the economic aspect only. The social time value of money allows to have a better understanding of the time preference in the Islamic perspective.

The distinction between economic value and social value of the money which has improved the apprehension of time value of money has also permitted to better examine the time preference in the Islamic context.

Conclusion

Understanding the time value of money is crucial to assess the potential value of cash flows in the future. In the Islamic perspective, the money time value is not predetermined and should be related to a real sector. Islam prohibits any increase in the loan in consideration of the time. The particularities of the time value of money affect the time preference consideration in the Islamic perspective. Thus, the conception of the time preference is considered in the view of investment rather than consumption.

The originality of this study is (1) to distinguish economic time value of money and social time value of money which demonstrates the specificity of time value of money in Islamic economics (2) to study the relationships between time value of money and time preference considering economic and social aspects. The consid-

eration of the social time value of money improves the comprehension of the time preference in the Islamic perspective.

In the economic view, time preference behavior is positive as long as it does not include interest rate. Indeed, in sale operations time preference is positively related to the time value of money. However, the social time value of money reinforces the preference for the future.

Consequently, Islamic economy is an expense economy thanks to its specific vision of money time value which prohibits interest, requires the relationship with real economy and widens the economic view by the integration of the social view. Then, it is recommended to consider economic and social aspects in the investment decision. Further, this study may be extended by the investigation of Islamic banking pricing in *Murabaha* or in *Salam* taking into account the wider concept of time value of money moving away from the LIBOR.

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