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The Time value of Money in the Islamic Banking: A thorough Review

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Abstract

Time value of money (TVM) is one of the most debatable and theoretically important concepts in Islamic banking and finance. This is a thorough review newspaper on how the Islamic financial institutions are able to reconcile the inherent economic rule that money is worth more at one time and worth less at another with the absolute Shariah rule of riba (interest). Based on 30 academic texts including theoretical discussions, juristic interpretations, and practical applications, this report has shown that Islamic finance does not dismiss TVM per se but it re-contextualizes it within the framework of Shariah-compliant context. The important point is that TVM is acceptable when associated with actual economic transactions in goods and services as in deferred sales contracts such as murabahah however a strict taboo on TVM occurs when applied to pure monetary lending relationships in which money begets money as mere lapse of time elapses. This difference allows the Islamic banks to perform capital budgeting, asset valuation and pricing without overstepping ethical limits or causing exploitation and encouraging the sharing of risks. The report combines various academic views, finds practical implementation across the instruments of Islamic finance, and notes the existence of debates to date that influence the development of modern Islamic finance.

Keywords: Time value of money, Islamic banking, modern Islamic finance

Introduction

One of the principles of traditional finance is the time value of money (TVM), which states that a dollar today will be worth more than a dollar tomorrow because it can be invested in interest-bearing investments to earn more money over time. The idea forms the basis of virtually all the modern-day financial computations, be they capital budgeting and asset valuation, or loan amortization and investment analysis. Nevertheless, Islamic banking and finance works under a completely different paradigm and this paradigm strictly bans riba (interest or usury) as it is clearly forbidden in the Quran and Hadith. This ban presents a seeming paradox: how can Islamic financial institutions engage in complex financial transactions which necessarily involve time-dependent values and at the same time comply with the absolute prohibition of interest?

The paper is a thorough review of how TVM plays out in the context of Islamic banking through synthesizing the quality literature that concerns this key tension. The discussion is based on 30 scholarly publications on the topic that investigate theoretical backgrounds, juristic interpretations, and practical implementation as well as discussions of TVM in Islamic finance. The study finds out that the Islamic notion on TVM is neither a straightforward adoption or rejection of the traditional notion, but a delicate redefinition on the basis of the Shariah principles that sets forth the idea of permissible and impermissible types of time-based compensation [1], [2], [3].

The relevance of this subject is not limited to theoretical concern. As the assets of Islamic banking have risen to more than 2 trillion of the world and continue to increase rapidly, research into how Islamic financial institutions manage TVM has some practical value in terms of product design and how they price their products, as well as the amount of capital they allocate and the regulatory frameworks. In addition, the Islamic approach presents alternative views of finances ethics, risk-sharing and money-real economic activity relation that can be used to enlighten wider debate on sustainable and equitable finance [4], [5].

This report is designed in the form of first outlining the Shariah frameworks and theoretical basis, then the conceptual debate of the acceptability of TVM or not, then continuing with a clear analysis of Shariah-compliant models and practical applications then finally, critical studies and areas of future research are also presented.

Theoretical Underpinnings and Shariah Paradigm

The Prohibition of Riba

The forbidden character of riba is the key feature of Islamic finance that has a direct effect on the conceptualization and application of TVM. Interest, most commonly translated as riba or usury, is specifically prohibited by several verses of the Quran, most famously Surah Al-Baqarah (2:275-279), which says that Allah has allowed trade but forbidden riba, and that those who continue to take riba should be at war with Allah and His prophet [6], [7]. The literature on the Hadith not only explains this prohibition, but also Prophet Muhammad (peace be upon him) denounced several types of riba, such as riba al-nasi'ah (interest upon deferred payment) and riba al-fadl (interest upon swap of similar commodities in dissimilar amounts) [8].

The logic of banning the riba is complex. Researchers single out a number of goals (maqasid) such as the prevention of exploitation, promotion of economic justice, promotion of risk-sharing over risk-transfer and the need to make sure that the creation of wealth is associated with productive economic activity, as opposed to passing of time [9], [10].

The idea behind the ban is to avoid money begetting money with no real economic activity or risk taking which is considered corrupting the primary purpose of money as a medium of exchange and unit of account [11].

More importantly, the central issue in the Islamic finance as a result of the riba prohibition is that TVM is an area that is difficult to work with. Traditional TVM directly incorporates riba as discount factors in its financial calculations through explicit use of interest rates. All predetermined and fixed returns on a loan, which are based on time alone, would fit squarely in the forbidden category of riba al-nasi'ah [12], [13].

This requires a radical redefinition of the impact of time in the monetary value of Islamic financial environments.

Classical Juristic Approaches to Time and Value

The connection between time and value was widely debated by classical Islamic jurists, albeit using the modern terms of time value of money. Their decisions form the juristic basis of the modern Islamic finance strategies of TVM. One of the main principles of classical scholars is summarized in the Arabic maxim inna lil zaman hillatun min al-thaman (time has a share in the price) [14]. This awareness of the fact that time would influence value goes back to several classical jurists such as Imam al-Shafi, who realized that an immediate hundred measure would be more valuable than a delayed one [14].

There were a number of major issues at the core of the classical juristic discourse that were applicable in TVM. First, there was a debate on whether bay' mu'ajjal (deferred sales) where the price on which the business is to be delivered at a later date is different than the spot price should be permitted. According to the massive majority of classical jurists, these sales are allowed and deferred sales with price increments that Prophet Muhammad (peace be upon him) himself practiced [15]. This formed the guideline that differences in price as a factor of time are acceptable where the transactions are related to commodities.

Second, classical jurists made a distinction between sale contracts (bay') and loan contracts (qard). In sales, the commodity or service is the object of exchange, and the adjustments of prices in time are based on such factors as storage costs, the opportunity cost, and risk. The property in loans is money itself and any increase with time amounts to riba [16], [17]. This differentiation continues to be at the focus of modern-day Islamic finance approaches to TVM.

Third, other scholars such as al-Sarakhsi and al-Zayla'i accepted the idea of positive time preference the innate human tendency to consume in the present rather than in the future, as a natural part of human nature (fitrah) [15]. This identification offers a juristic ground on accepting time preference as an economic fact and does not necessarily accept interest as its expression.

Maqasid al- Shariah and Time Value

Maqasid al-Shariah (purpose of the Islamic law) framework offers a superior level of analysis in interpreting TVM in Islamic finance. The maqasid school which was developed by classical Shariah thinkers such as al-Ghazali and al-Shatibi and perfected by the modern thinkers recognizes the higher intents of Shariah such as the preservation of religion, life, intellect, lineage, and wealth [2]. When used in the context of TVM, the maqasid framework would recommend that the time valuation mechanisms must fulfill these higher purposes instead of just repeating the traditional financial formulae.

Using the maqasid approach, riba was banned to ensure the wealth of people was preserved (hifz al-mal) through avoiding exploitation and evenly distributing wealth. The adoption of price disparities over time through the sales contract ceremonies compliments this goal by permitting justifiable compensation of actual economic expenses and risks linked to deferrals sales transactions [2]. But fee based time in naked lending relationships goes against this goal because it makes it possible to amass wealth without productive contribution or risk taking.

Real economic activity is also a part of the maqasid framework that focuses on the need to connect financial transactions to the actual economy. This doctrine, which is occasionally called the asset-backing requirement, implies that any type of compensation based on time must be linked to physical goods, services, or means of production and not to abstract financial claims [15], [18].

This reasoning through maqasid would offer an ethical rationale to support the acceptance of TVM use in some cases and oppose it in others, depending on whether the use of the application would deliver the higher objectives of justice, equity and economic productivity.

The Theoretical Controversy: TVM on Islamic Finance.

Acceptance vs. Rejection Positions.

In the academic literature there is the continuum of standpoints regarding TVM in Islamic finance between the rejection and the conditional acceptance of the concept. This diversity is essential in the appreciation of complexity of the issue and the development of Islamic financial thought.

Rejection position put forward by Anwar, argues that Islamic finance essentially outlaws the time value of money, and any markup on the principal amount in a deferral exchange is riba [20]. That point of view underlines that the Quranic ban on riba (2:279) dictates that creditors receive their principal sums only and no interest on this sum. According to those who support this concept, a mentality of doing business with riba by accepting TVM even in the sales contracts is a continuation of previous mentality which compromised the ethical principles of Islamic finance [20]. In this perspective, the spot price ought to be equal to the deferred price, and there ought not be the compensation of the time.

The conditional acceptance view, which is held by most modern researchers, is based on the fact that TVM is accepted under Islamic finance but under strict conditions [1], [10], [15].

This perspective is of the opinion that the Shariah never excludes the consideration of time value in general and limits it as applied to particular situations. The difference lies in the fact that TVM in sale contracts of commodities or services, which is allowed, and TVM in the pure lending relationships, which is riba [1], [10]. Ahmad and Hassan explain this standpoint quite clearly where they say that the Shariah allows adding increments on the amount of loans issued to cover the price of a commodity under any sale contract to be paid at a later time, yet the time value of money is not to be made an aspect of lending relationships with predetermined value [1], [10].

A third, less prevalent, but intellectually important stance is that the traditional concepts of TVM cannot even be applied to Islamic finance. Ilyas states that Islamic economics identifies economic value of time and not time value of money and the fact that money in Islam is a flow concept and a public good, but not an object and stock concept [16]. According to this view, the whole framing of the discussion in traditional TVM terms might not be the right one in terms of Islamic finance, which has completely different assumptions regarding the nature and role of money.

The Crucial Difference: Sales and Loans.

The consensus decision to the TVM debate in the Islamic finance revolves around the difference between selling contracts (bay) and loan contracts (qard). This is not just a technical difference but a difference in the nature of the transactions and its Shariah implication.

The object of exchange in the case of sales contracts is a commodity, service, or asset. Where contracts are related to deferred payment or delivery, it is legitimate that the price does not necessarily the spot price to indicate the various factors such as the storage, transportation, risk, opportunity costs, and time preference [1], [7], [15].

The principle of having deferred sale prices exceeding spot prices has been expressly endorsed by the Islamic Fiqh Academy who have realized that this is a valid trade and not riba [19].

The point would be the increment is not fixed on money, but to the commodity being sold.

An example of this principle is Murabahah (cost-plus financing). Under Murabahah, the Islamic bank buys an asset and then sells it to the customer at a specified markup that is known and payment is either deferred or in installments. The markup is to cover the bank with a variety of aspects such as the cost of capital, costs associated with administration, and risk but is modeled as a part of the selling price of the asset instead of as an interest on a loan [7], [14], [17].

It is not really a loan; it is a sale that has the purpose of financing.

Loan contracts on the other, entail exchange of money with money. Any predetermined increment at time period in such contracts is riba al- nasiyah, no matter how it is called or computed [12], [16], [20].

According to the Shariah, loans must be returned in the same currency and quantity as the one provided; no premium should be charged to the lender [1], [10].

This ban is unconditional and it does not allow any excuses with references to economic need or customary usage. Suharto gives a subtle explanation of this difference by suggesting that time value compensation can be earned in credit sales provided attached to other factors such as guarantee, effort and risk, which he describes as Niwal/ counter-value [17]. TVM is however disapproved of pure money or debt, since charging of deferred liability is deemed as riba. The paper highlights the fact that the critical point is that time influences price because of the related efforts and risks (permissible) or that time is the sole cause of compensation (prohibited) [17].

Time Preference and Positive Time Preference

The theory of time preference the preference to have present consumption rather than future consumption is a critical element in the debate of TVM. Positive time preference is usually used as the prime justification of interest rates in the traditional economics. The question to Islamic finance is that recognition of the time preference inevitably would mean acceptance of the interest-based TVM. A number of researchers believe that the time preference is a positive human trait, and it was adopted in Islamic thinkers, and it does not automatically contradict with the prohibition of riba [15], [18], [19].

Fairooz et al. observe that Islamic Islam acknowledges TVM on the principle of positive time preference with references to the verses in the Quran (75:20-21, 87:16-17) that characterize human preference to immediate satisfaction [15]. The point is that time preference is a psychological and even economic fact but it does not necessarily have to be practiced in the form of interest on loans.

Hamza and Saadallah offer a complex analysis of the difference between the economic TVM and social TVM [19]. The concept of economic TVM embodied in the sales operations where the deferred prices are higher than the spot prices is acceptable because it reflects the replacement costs of time in the actual deal. Social TVM, which is reflected in charitable loan (qard hassan) and waqf (endowments) in fact materializes future preference by implying investment and wealth maintenance devoid of riba [19]. This framework can propose that Islamic finance embraces time preference using more than just monetary compensation in many ways.

The relationship that exists between time preference and opportunity cost also appear in the literature. The risk-free interest rate is usually used as a measure of the opportunity cost of capital in traditional finance. The opportunity cost should be calculated differently in Islamic finance, and this may be in terms of returns on Shariah-compliant investments or a profit-sharing scheme [17]. Suharto points out that Islamic banks should not view non-halal or non-valid transactions as the opportunity costs and this proves to be applicable in how they compute the time value element of their prices [17].

Time-Valuation Shariah-compliant

TVM in Sale Contracts

The use of TVM principles in the sale contracts is the main way by which the time value differences can be accommodated by the Islamic finance without violating the Shariah provisions. The basic rule is that price adjustments based on time are acceptable so long as they are part and parcel of selling goods or services and not as a remuneration of lending money.

The simplest usage is that of deferred sales (bay' mu'ajjal). In such dealings, the seller is obligated to deliver goods on the spot and the buyer to pay at a later date and the price that will be paid later will be higher than the spot price [1], [10], [15].

The price gap represents a number of factors such as the opportunity cost of the seller, non-payment risk, and the administrative costs. Most importantly, it is done as a sale, and the price is agreed upon once, not as a loan, and with interest rates [15]. Juristic support on the allowability of price disparity in cash and credit sales is very high. Such variations were legitimate in classical scholars and even the Prophet Muhammad (peace be upon him) used to conduct deferred sales where there is an increment in price [15].

This fact has been re-affirmed by the contemporary Islamic Fiqh Academy who clearly indicated that the deferred sale prices are allowed to be higher than the spot prices without it being considered riba [19].

This is a juristic consensus upon which many Islamic financial products are based. According to Ahmad and Hassan, the Shariah allows increments in terms to be paid in sale contracts in the future at a later date yet the increment must be disclosed and agreed upon at the time of the contract [1], [10]. This is because the transparency requirement differentiates between Islamic deferred sales and a standard interest baring loan whose interest aspect might be less transparent or variable.

The notion is broader than mere deferred payment and to more complicated forms. In murabahah deal, the Islamic bank buys an asset at the spot price and sells it to the customer at a discounted price but they can be paid and in installments [7], [14], [17], [19]. The markup is revealed and determined at the time of contract commencement and is used to compensate the bank with several costs and risks on the transaction. The structure makes sure that the compensation of time is pegged on the price of the asset but not on a financial loan [7], [17].

Discounting and Present Value Methods.

The use of discounting and present value computations in Islamic finance is a less acceptable field, as the methods are closely linked to the interest-based traditional finance. Nevertheless, some academics claim that discounting can be modified to Shariah-compliant applications in situations where it is well comprehended and implemented. Siddiqui looks at the method by which discounting and present value techniques can be redefined within the context of the riba bans [11]. The point is that discounting has two different uses in finance: as a system of computing interest-driven returns (which is forbidden), and as an instrument of value analysis of comparing values of various time points (which can be allowed). In cases where discounting is adopted solely as a capital budgeting or asset valuation method, which does not include the use of riba-based returns, it can be tolerable [11], [12].

Siddique et al. give a theoretical framework of differentiating TVM as consideration (prohibited) and TVM as an evaluation tool (permissible) [12]. They say that Islamic finance can not be based on traditional methods of capital budgeting, which involves the use of discounting based on interest. Nevertheless, it is no argument that TVM can be used in the assessment of capital budget, as long as the discount rate is not an indicator of interest [12]. This difference enables the Islamic financial institutions to perform project analysis and investment assessment and be Shariah compliant.

Islamic finance has the difficulty of setting the right discount rates. The traditional finance normally relies on the interest rates or the weighted average cost of capital (WACC), which comprises of interest bearing debt. Islamic finance will have to come up with other benchmarks, which are Shariah-compliant returns. Other researchers propose returns on the Islamic equity investment, profit-sharing ratios on the mudarabah contracts, or returns on sukuk (Islamic bonds) as the proxies of discount rates [19]. Though, this is a subject of current study and controversy.

Baehaqi et al. use a maqasid al-Shariah notion of discounting with the view that present value can be obtained in an ethical manner as it will benefit the greater interest of Islamic law [2]. They suggest that ethical factors like social welfare, environmental sustainability and fair distribution should be considered in setting discount rates instead of just maximizing financial returns [2]. According to this approach, which is based on maqasid, Islamic discounting must include values other than pure financial calculation.

Fairooz et al. observe that discounting has been regarded as a valid approach towards project analysis and equity measures of assets, which is in accordance with positive time preference which is perceived to be a factor of human nature [15]. The trick of the matter is that the discounting procedure should not and should not entail and mean the returns at riba though rather represents acceptable economic considerations like risk, opportunity cost quantified with the help of Shariah-compliant alternatives, and time preference [15].

The Idea of Niwal (Counter-Value)

Suharto presents the idea of a counter-value of the Niwal, which is a concept to explain acceptable time-related compensation when dealing with Islamic finance [17]. Niwal is the valid grounds which can be used to explain price variation in a deferment transaction and differentiates it with riba-based increments that are banned.

This framework allowed compensation on time value of credit sales to be added when attached to other factors; guarantee, effort and risk [17]. These aspects contain the actual economic costs and contributions which warrant extra compensation on top of the spot price. As a case in point, in a murabahah transaction, the Islamic bank guarantees by buying and holding the asset prior to selling it to the client, works hard to organize and make the transaction, and is exposed to risks such as price fluctuation risk and credit risk [17]. The markup realized in murabahah can be interpreted as remuneration to these Niwal aspects as opposed to time value of money.

The Niwal concept assists in overcoming the seeming paradox of acknowledging price variations over time in sales and not accepting any interest on loans. Time in sales contracts is influencing price by its correlation with tangible influences (Niwal) like storage expenses, transportation, insurance, and opportunity expenses in terms of Shariah-compliant options [17]. In loans contracts, time is the sole compensation factor and it is not combined with any Niwal and is therefore pure riba [17].
This model has a real life application in the design and pricing of Islamic financial products. It recommends that Islamic banks must be specific and measure the Niwal factors that must warrant their markups and profit margins to be transparent and Shariah compliant [17]. It further denotes that pricing must be done based on real costs and risks as opposed to just imitating traditional pricing based on interest rates [17].

Islamic Banking Practical Applications

Mark-Up Financing and Murabahah

The most common method of financing through Islam and which brings the best illustration of how the TVM principles are used in the Islamic banking practice is Murabahah (cost-plus financing). In a murabahah, the Islamic bank buys an asset on request by the customer and sells it to the customer at a specified mark up, which is usually deferred or in installment payments [7], [14], [17], [19].
Murabahah structure takes into consideration time value in a number of ways. Firstly, the markup reimburses the bank with time value of its capital invested in the purchase of the asset. Second, the deferred payment terms depict the time preference of the customer and his/her readiness to pay a mark up in order to obtain access to the asset immediately. Third, the markup has taken into account the compensation of several risks such as credit risk, risk of fluctuation of prices during the period of ownership and operational risks [7], [17].
Wibawa et al. compare the payments of the murabahah by the TVM techniques and prove that the markup can be calculated to show time aspects but not transform the structure of the payments as a sale, not as a loan [14]. Their work also compares the murabahah and the musharakah mutanaqisah (diminishing partnership) contracts such that various Islamic financing structures apply time value in varying ways [14]. The major discovery is that, even though TVM can be used to come up with the right price, the legal form is a sale at a fixed price but not a loan with an interest [14].
According to Hamza and Saadallah, the connection between the value of money, time preference, and real transactions is reflected in pricing in murabahah [19]. The markup is pre-established and accepted at the beginning of the contract, and it gives both parties some level of transparency and security. This is unlike the traditional interest-based loans in which the overall payment can change depending on the variation of the interest rate [19]. The immutability of the murabahah pricing concept is in line with the Islamic concept that commercial risk (gharar) ought to be reduced by clear terms of contract.
Nonetheless, murabahah has attracted criticisms by other scholars who believe that its real world practice tends to imitate traditional interest-based lending to a large extent [20]. Incorporating the concept of time value of money in the murabahah pricing, Anwar argues that the financial system obtained through the application of time value of money is a riba-based system where the deferred price should be equal to the spot price [20]. This skeptical view points to the fact that there are still debates as to whether the existing models of Islamic banking have done enough to distinguish themselves out of conventional finance or are simply offering Shariah-compliant labels to essentially conventional transactions.

Musharakah and Mudarabah Instruments.

Musharakah (partnership) and mudarabah (profit-sharing) are equity based modes of Islamic financing which treat time differently compared to debt based modes such as murabahah. These tools reflect the Islamic concept of risk-sharing as opposed to risk-transfer, they reflect financial returns based on the actual business performance as opposed to time-based payments which are predetermined.
In musharakah, two or more parties invest in the business venture and divide profits in a pre-determined ratio and losses are divided in a pre-determined capital-based ratio [16]. The payback is not pre-established or pre-determined, but rests on the reality of profitability of the venture. This structure is also intrinsically excited by time value where market-based returns are used instead of an interest approach. The profit sharing ratio reflects the time value of money, as it rewards the investors on why they use their capital to sustain the business at risk.
Mudarabah is a type of capital and entrepreneur (rabb al-mal) together operating the business [16], [20]. Profits are distributed at an agreed rate with the capital provider bearing all the losses unless by negligence or misconduct of the mudharib. Anwar explains the growth of instruments of mudharabah with much emphasis on profitability, securitization and negotiability [20]. The issue is that mudharabah returns should contain the results of real business performance, not understated interest payment.
A comparative evaluation of musharaka mutanaqisah (diminishing partnership) and murabahah is done by Wibawa et al., through which the former offers a more equity-like format in which the ownership portion of the bank is progressively bought by the customer [14]. The time value factor is expressed in musharakah mutanaqisah in the form of rental payable on the ownership portion of the bank and the incremental ownership transfer but not in the form of a fixed markup [14].
The fact that musharakah and mudarabah is equity-based implies that more traditional TVM methods based on constant discount rates do not apply. As an alternative, it should be valued based on the anticipated profit-sharing ratios, the business risk profiles, and the market conditions [19]. This is in line with the Islamic motto that rewards must be equal to risk-taking and productive labor and not duration of time.

Salam and Istisna Contracts

Salam (forward purchase) and istisna (commissioned manufacturing) contracts are Islamic financing forms, in which the time value concerns are incorporated within the structure of the contract, but in different manners than conventional forward contracts.
In a salam contract, buyer pays the entire price beforehand of the goods to be delivered after a later date [16], [19]. This discount of advance payment is also reflected in the salam price that is normally lower than the anticipated spot price at the time of delivery. This form illustrates the reverse of time preference in that the seller is willing to take a lesser price in order to get instant cash and the buyer is willing to take a delayed delivery in order to receive a good price [19]. Hamza and Saadallah also observe that salam puts time preference, discounted prices on delayed goods, and this illustrates the relationship between money value, time preference, and actual transactions [19].
The salam arrangement is especially applicable in case of agricultural financing where farmers require capital at the time they want to plant but can make a promise of delivering the produce during a later date. The discount price makes the buyer compensate the time value of money paid upfront and also taking the risk of non-delivery of the goods according to the specification [19]. This aspect of risk sharing is what differentiates salam and traditional forward contracts that could incorporate speculative aspects that are not permitted in Islamic finance.

Istisna is the process of ordering the production or the creation of certain goods with the delivery in a future date which may have flexible terms of payment (advance, installments or deferred) [16], [20]. The istisna price is an indicator of different aspects such as the cost of production, time taken to finish and risk. In the case of deferral of payment, the cost at the time of payment is possible to be higher than the cost at the time of immediate payment, taking into consideration the time values [20]. Nevertheless, it is still the form of a manufacturing contract but not a loan with interest.
Anwar expresses some apprehensions that the usual usages of Islamic finance of using time value in salam and istisna contracts can cause riba [20]. He points out that the deferred price ought to be equal to the spot price in order to prevent the interest-based way of thinking. It is a critical view, which reveals the conflict between realistic Islamic banking practices and strict interpretations of the prohibition of riba.

Capital Budgeting and Project Evaluation.
The issue of capital budgeting and project assessment poses a great challenge in Islamic finance since the standard methods heavily depend on the analysis of discounted cash flow (DCF) using the interests as the discount rates. Islamic financial institutions have to establish alternative strategies that would facilitate making good decisions on investment and still respect the Shariah.
Siddique et al. offer a theoretic framework of the Islamic capital budgeting and differentiate between TVM as consideration (prohibited) and TVM as an evaluation tool (permissible) [12]. They claim that there is no breach of the Shariah principles in the use of TVM to evaluate a project as long as the discount rate does not reflect the interest [12]. This differentiation gives Islamic banks the ability to do net present value (NPV) analysis, internal rate of return (IRR) calculations, and other capital budgeting methods, but necessitates the development of Shariah compliant discount rates.
The difficulty is to identify the right discount rates of the Islamic capital budgeting. Traditional finance refers to the weighted average cost of capital (WACC), where there is the cost of interest-bearing debt. Islamic finance needs to come up with new benchmarks depending on Shariah compliant returns on the investment [12]. Other possible methods would involve the utilization of the average returns of the Islamic equity fund, profit-sharing ratios of the mudharabah contracts, or sukuk portfolio returns as a proxy of the discount rate.
Siddiqui analyzes the application of discounting and present value techniques in adapting the Islamic finance [11]. It is important to make sure that discounting is an assessment instrument that compares the figures at various time periods instead of being a mechanism to compute the interest-based returns [11]. This has to be mindful of the economic content of the discount rate and Shariah compliance.
Fairooz et al. observe that the concept of discounting is acceptable when it is utilized during project evaluation and the proper valuation of assets that is in harmony with positive time preference, which is an aspect of the human nature [15]. According to the maqasid al-Shariah view, capital budgeting methods ought to be useful towards the greater goals of the Islamic jurisprudence which consists of economic growth, employment, and the community, and not just maximizing financial gains [2].

Interest-Free Lending Systems.
Izadyar et al. come up with a new design of interest-free lending which explicitly solves the TVM problem using an upfront payment system which they refer to as Mesbah Point [8], [13]. The strategy acknowledges the economical fact of time value and organizes the deal to shun riba.
Borrowers in the Mesbah Point system would pay upfront a set amount as a predetermined upfront payment (UFP) to get zero-percent interest loans, and subsequently would pay monthly principal installments [8], [13]. To compute the UFP, the amortization and the TVM concepts are used, to reflect the present value of the interest the standard loan would have been charged [8], [13]. The system removes the recurrent payment of interest in the form of riba since the future payment of interest is converted into a discounted initial cost and the time value of money of the lender is also accepted.
This strategy is defined to be appropriate to securitization using zero-coupon sukuk where it provides liquidity to lenders without compromising on the Shariah compliance [8]. This structure is in conduct with Islamic-based financial transactions such as murabahah where the element of the time value is embedded in the price and not as a recurring interest [8]. The major difference is that the UFP is a single payment that is part and parcel of the transaction structure rather than an interest charge that increases with time.
The concept of the Mesbah Point shows the solution to TVM problems in Islamic finance using creative financial engineering. It also however brings up the issue of whether changing interest into a lump sum payment really does away with riba or simply restructures it. Opponents may point out that the economic structure may be the same as the traditional interest-based lending, despite the fact that the legal structure may be different. That indicates the tension that prevails in practical innovation on one hand, and strict Shariah compliance on the other hand in Islamic finance.

Comparison Analysis: Islamic and Conventional TVM.
It is important to note that the difference between Islamic and conventional approaches to TVM can be explained by looking not only at the technical formulas but also at the philosophical and ethical background. The tension goes further than the superficialities of the differences to the very core of the assumptions about the nature of money, connection between time and value, and ethical limits of financial dealings.
Theoretical Foundation The traditional TVM is based on the assumption that money is a commodity which can be rented, and the interest is the rental price [1], [16]. This is because even time is considered to have a value which justifies compensation. Islamic finance opposes this commodification of money by considering money as a medium of exchange and unit of account and not a commodity [16]. The value of time is acknowledged, albeit, when associated with actual economic exchange of goods, services or productive resources [1], [15], [19].
Determination of Discount rate: Traditional finance employs interest rates (usually risk-free rates and risk premiums) as input in the determination of the present value. Such rates can easily be seen in the financial markets and give standardized rates. Islamic finance will have to come up with alternative discounts that are pegged on Shariah-compliant returns, including profit-sharing ratios, sukuk yields, or Islamic equity returns [11], [12], [19]. This poses practical problems because the Islamic rates of discount might not be as standardized and may be harder to monitor.
Risk and Return Relationship: Traditional TVM divides the time value of money (in the form of the risk-free rate) and risk premiums. Even riskless returns are explained by time preference by itself. Islamic finance demands that the returns should be tied to risk-taking and productive investment [14], [16], [19]. Islamic finance does not have a notion of a risk-free return; returns have to be realized by taking risk in business (in equities-based modes) or by the provision of real services (in trade-based modes) [19].

Transaction Structure: The traditional finance package time-based compensation in the form of interest on loans, the interest rate and the principal amount are a distinct unit. Islamic finance bases time-related compensation on the price of sales contracts or in equity contracts on profit sharing [1], [7], [15], [17]. The legal structure counts: a sale at a markup on a murabahah is Shariah-compliant, whereas a loan at interest is not, although the economic consequences may be quite comparable [7], [17].

Flexibility and Certainty: Traditional interest-based loans contain variable interest rates which fluctuate with the market factors allowing uncertainty regarding the final repayment sums. Islamic methods of financing such as murabahah offer fixed and predetermined prices that give certainty to both parties [19]. Nonetheless, there are uncertainties regarding returns in equity based Islamic modes such as mudharabah which are based on the actual performance of the business [20].

This is the Islamic concept of risk-sharing and not risk-transfer. Ethical Implications: Conventional TVM is ethically neutral and deals only with mathematical expressions of relationships between the present and future values, and does not have any moral content. Islamic TVM is incorporated within an ethical framework, which gives importance to justice, equity, prohibition against exploitation and connection to actual economic activity [2], [9], [15]. Maqasid al-Shariah approach implies that time valuation must be used to fulfill greater social and economic goals other than profit maximization [2].

Causal Attack and Intake of Controversy.

Although there is a vast amount of academic literature regarding the topic of TVM in Islamic finance, a number of vexed views and ambiguous discussions are still informing the development of the area. These arguments are an indication of a strain between theoretical purity and practical need, between strict adherence to Shariah and competitiveness in the market and between various ideas of Islamic legal principles.

The Mimicry Critique: The Mimicry criticism is one of the most influential ones; according to it, even formally Shariah-compliant practices of modern Islamic banking often replicate too closely modern interest-driven finance. In his argument, Anwar is categorical that the inclusion of time value of money in the Islamic financial products even in contracts of sales is a culture-perpetuated mentality of riba, thus forming a financial system that is only Islamic in name [20]. This criticism implies that the difference between sales-based and loan-based TVM, although legally sound, might be inadequate to support both ethical and economic goals of Islamic finance [20].

The Pricing Controversy: In relation to the mimicry criticism is the question of how Islamic banks set their markups and profit margins. Unless Islamic banks actually set their murabahah markups at conventional interest rates (like the LIBOR with a markup), are they really giving an alternative financial system, or just giving Shariah-compliant labels to otherwise conventional transactions? [19], [20]. Hamza and Saadallah propose to explore the Islamic banking pricing with the help of a more general concept of TVM that goes beyond LIBOR and takes economic and social factors into account [19]. This is one of the fields that should be researched and innovated in practice.

The Discount Rate Problem: The absence of standardized and generally accepted discount rates to apply to the Islamic capital budgeting and asset valuation poses practical issues. Although researchers suggest that sukuk returns or Islamic equity returns can be used as benchmarks [11], [12], [19], they are not always available in the market and in all projects. The fact that there is no clear Islamic equivalent to the risk free rate makes it difficult to analyze the finance industry and this could also disadvantage Islamic financial institutions.

Diversity of Scholarly View: Eyerci states that the opinions of Islamic economists on the TVM and time preference are highly diverse, and the pertinent literature is inadequate enough to aid in constructing a clear opinion [29]. This variety is characterized by various interpretations of Islamic legal sources, various methodologies and various proportions between theoretical purity and practical necessity. On the one hand, diversity may be a source of intellectual stimulation, on the other hand, it poses uncertainty among practitioners and regulators.

The Economic Value of Time vs. Time Value of Money: According to some researchers, such as Ilyas, the whole framing of the discussion into the concept of the time value of money should not be applied to Islamic finance [16]. They suggest an alternative of consideration of the economic value of time, which is that time is valuable when it is productively utilized as opposed to time passing by [16], [23]. This reframing implies that the Islamic finance ought to come up with its own conceptual vocabulary instead of modifying the conventional finance terms.

The Role of Time Preference: As the majority of researchers acknowledge positive time preference as an innate human trait [15], [18], [19], the question of its implication on Islamic finance still exists. In case individuals have a tendency to consume now, then how can this not be used as a reason to compensate deferred consumption even in loan agreements? The difficulty lies in the fact that it is one thing to accept time preference as a reality in economics and another to accept it as a justification of riba [19], [29].

Issues with Practical Implementation: In spite of clear theoretical frameworks, practical implementation is frequently compromised and ambiguous. As an illustration, what is the markup that the Islamic banks should charge in cases of murabahah transactions? Which factors ought to be considered in the Niwal (counter-value) calculation? [17]. What can banks do to make sure that their prices reflect the real costs and risks and not just replicate the traditional interest rates? Both scholars and practitioners need to be concerned with these applied questions.

Future Projections and Recommendation.

Further academic study, innovation, and the development of regulations is needed to advance the approach to TVM in the Islamic finance. There are a number of areas that are worth paying special attention to:

Development of Islamic Discount rate Benchmarks: The Islamic finance sector must come up with the standardized and widely accepted discount rate benchmark in capital budgeting, asset valuation and financial analysis. This might include development of Islamic versions of standard benchmarks such as LIBOR or SOFR, pegged on the returns of diversified portfolios of Shariah-compliant investments [19]. Regulatory bodies and industry associations are supposed to work together in order to come up with such benchmarks and encourage their use.

Improved Transparency in Pricing: The Islamic financial institutions need to improve on their transparency in the determination of the markups, profit margins and prices of different products. This involves the explicit determination and quantification of the Niwal factors (guarantee, effort, risk) which explain price differences by time [17]. More openness would assist in differentiating Islamic finance and conventional finance as well as create trust with customers.

Evaluation Frameworks: Future studies ought to come up with evaluation frameworks of Islamic financial products and transactions on the basis of maqasid al-Shariah principles [2]. These frameworks would not just examine formal Shariah compliance, but will also examine whether products can be used to promote the overall goals of the Islamic law such as justice, equity, economic development, and social welfare. This would assist in alleviating the fears that Islamic finance copies the conventional finance.

Empirical Research on the Applications of Islamic TVM: Although there was a tremendous amount of theory on TVM within Islamic finance, empirical studies that explore the actual application of the principles of TVM by Islamic banks in practice are less. Case studies of Islamic financial institutions, examination of practice in the real world and

evaluation of the suitability of theoretical models in practice would be incorporated into future research [14]. This would assist in establishing the gaps between theory and practice and guide improvements.
Incorporation of Ethical and Social Issues: Islamic finance also needs to incorporate ethical and social issues in the TVM calculations and financial decision-making more directly. This may entail the creation of discount rates that include social discounts, sustainability of the environment, and distributional equity issues [2]. These would distinguish the Islamic finance and conventional finance and would make it more in line with its ethical basis.
Education and Capacity Building: Islamic finance practitioners, regulators, and customers need to have more education and capacity building on the concepts of TVM as well as applications of this concept in a Shariah-compliant manner. This involves the creation of curricula, educational programs and materials explaining Islamic approach of TVM in simple terms [3]. Greater comprehension would have led to making more informed decisions and making implementation more effective.
Synthesis of Academic views: Although plurality of academic opinion is a natural phenomenon and may be advantageous, too much variesion leads to confusion and difficulties in implementation. Islamic finance academics and institutions must strive to achieve higher levels of convergence of the perceptions on important TVM matters, although considering the appropriateness of acceptable differences in interpretation [29]. This may include joint research, academic conferences and publication of consensus papers regarding certain problems.
Financial Products Innovation: The Islamic finance sector ought to innovate in financial products development, so as to be well able to tackle the TVM issues even without compromising the Shariah requirements. One such financial engineering innovation is the concept of the Mesbah Point [8], [13]. The other innovations could be new ways of financing through equity, new ways of capital budgeting, or new ways of this incorporation of the use of time without use of interest.

Conclusion
The time value of money in the Islamic banking is a difficult nexus between economic need, religion and practical development. This extensive overview of 30 academic publications demonstrates that Islamic finance does not accept or not accept TVM at all, but instead recontextualizes it in a Shariah-compliant system that is able to differentiate between the permissible and the prohibited use of TVM.
The main conclusion is that TVM can be used in Islamic finance, when it is associated with actual economic transactions of goods, services, or productive assets, such as deferred sales contracts such as murabahah, but it is forbidden in situations of pure monetary lending relationships where money uses time as the sole factor in generating money. This difference, based on classical Islamic jurisprudence and reaffirmed by modern academic opinion, allows Islamic banks to engage in complex financial activities such as capital budgeting, asset valuation and pricing without crossing ethical boundaries, which would encourage exploitation and risk-sharing [1], [10], [15], [17].
TVM has a Shariah model which is founded on a number of principles. To start with, the fact that riba (interest) is expressly forbidden in the Quran and the Hadith [6], [7], [12]. Second, the ancient jurists had acknowledged that time might influence value in commercial dealings, the saying: time has a hand in the price [14], [17]. Thirdly, the important difference between sales contracts (bay), where any time-related differences in price are allowable, and loan contracts (qard), where any type of predetermined increment is riba [1], [10], [16], [17]. Fourth, the notion of Niwal (counter-value), determining the properly-founded factors including guarantee, effort, and risk that warrant a compensation on time basis [17].
Islamic TVM principles have numerous practical applications in the entire spectrum of Islamic banking operations. Murabahah (cost-plus financing) uses time value based on disclosed markups compensating a variety of costs and risks but keeping the structure as a sale as opposed to a loan [7], [14], [17], [19]. Time value is taken in Musharakah and mudarabah (equity-based modes) which employ profit-sharing schemes, which are tied to business performance as opposed to regular payment [16], [20]. Salam and istisna contracts incorporate time value inputs within its forward purchase and commissioned manufacturing systems [16], [19], [20]. Capital budgeting and project analysis adjust the methods of discounting with the help of Shariah-compliant discount rates [11], [12]. New practices such as the Mesbah Point system can also illustrate how innovative financial engineering can solve TVM problems [8], [13].
Nevertheless, there are still major issues and controversies. Critics object that modern Islamic banking customs tend to imitate conventional interest-oriented finance too readily, and its markups are effectively functionally identical to interest though they may be legally designed as sales [20]. Nondeterministic benchmarks of Islamic discount rates make capital budgeting and asset valuation more difficult [11], [12], [19]. The lack of consensus on important matters in TVM makes practitioners and regulators confused [29]. There are questions how it is possible to guarantee that the Islamic finance pricing can be based on the real costs and risks instead of benchmarking with the conventional interest rates [19], [20].
Going forward, the Islamic finance sector needs to keep evolving its TVM by way of increased transparency, standardization, frameworks of evaluation based on maqasid, empirical research and constant innovation in financial products [2], [3], [8], [17], [19]. It should not just seek to offer Shariah-compliant alternatives of traditional finance, but to make a truly unique financial system that reflects Islamic moral values of justice, equity, risk-sharing and connection to actual economic activity.
The Islamic perspective of TVM provides knowledge that is not limited to the Muslim fraternity. With the increasing worry over the financial ethics, sustainability, and inequality, the Islamic demand to tie financial returns on productive contributor and the risk-taking, instead of time passing, offers a different paradigm that should be considered more broadly. The banning of riba and the necessity of money serving the actual economy and not becoming an end in itself express the values that are shared by all cultures and traditions.
Finally, the example of TVM in Islamic banking is representative of a larger issue of the Islamic finance industry, namely the need to be present in the modern financial markets and be compatible with the underlying religious and ethical values. The academic sources considered in the given case show that this problem, though difficult, can be overcome. Islamic finance will keep evolving strategies that respect the economic reality and the faith of those who practice it through prudent juristic reasoning, artistic financial design and constant consultation between academics and practitioners.

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