

**IMPLICATIONS OF THE TIME VALUE OF MONEY  
CONCEPT ON SHARIA-BASED RETIREMENT PLANNING  
BASED ON DSN-MUI FATWA NO. 88/DSN-MUI/X/2013**

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**ABSTRACT,**

Implementing the time value of money in pension funds cannot be separated from the knowledge of economists, the need for literature related to this matter, especially about the time value of money, where the value of money today will not be the same as the value of money in the future, MUI Fatwa No. 88/DSN-MUI/X/2013 provides guidelines for sharia-based pension fund management, prioritizing the principles of justice, transparency and halal investment. This research reviews the implications of the TVM concept in the context of sharia-based retirement planning in accordance with the guidelines of MUI Fatwa No. 88/DSN-MUI/X/2013. The research method used is library research using various secondary sources as research material. This type of research uses library research where the author combines and collects data by reading articles and books to produce accurate data. The research results found that the application of sharia principles in managing pension funds can provide a guarantee of fair and sustainable value for pension participants. This research highlights the importance of synergy between TVM principles and sharia guidelines in retirement planning.

**Keywords : Pension Funds, Implementation, Time Value of Money.**

**INTRODUCTION**

Retirement planning has become an increasingly strategic long-term financial necessity amid the growing complexity of the economy and demographic structural changes. Indonesia is currently entering the phase of an aging population, in which the number of elderly citizens continues to rise from year to year. This condition requires every individual to possess adequate financial preparedness in order to maintain their welfare after entering a non-productive period (Purnama et al., 2021). Data from the Financial Services Authority (Otoritas Jasa Keuangan) indicate that the pension fund industry in Indonesia has experienced significant asset growth in recent years. Nevertheless, the level of public literacy and participation in pension programs remains relatively low, particularly among informal sector workers and younger generations (OJK, 2024). This phenomenon suggests that there is still a considerable gap between the actual need for pension funds and the financial readiness of society in planning for their future.

In modern financial science, one of the main concepts applied in retirement



planning is the Time Value of Money (TVM). This concept states that the value of money today is more valuable than the same amount of money in the future due to factors such as inflation, risk, and investment opportunities (Ross et al., 2016). Theoretically, TVM explains that money possesses a time value; therefore, every long-term financial decision, including investment and retirement savings, must take into account changes in the value of money over time. Through this concept, the calculation of pension fund requirements can be projected using present value and future value approaches, enabling individuals to estimate the amount of funds that must be prepared from an early stage.

More specifically, the theory of TVM consists of two main concepts, namely Present Value and Future Value. Present Value is a concept used to determine the current value of a sum of money to be received in the future by considering a certain discount rate (Zendania & Setyani, 2022). Meanwhile, Future Value refers to the calculation of the value of money in the future from a certain amount invested today, assuming a particular rate of return (Ross et al., 2016). These two concepts serve as the foundation of conventional retirement planning, as they allow individuals and financial institutions to project the adequacy of pension funds based on inflation rates, investment returns, and the retirement period.

However, the application of the Time Value of Money concept within the perspective of Islamic economics raises fundamental conceptual issues. In conventional financial systems, TVM is generally calculated using interest rates as the basis for measuring the time value of money. In contrast, in Islamic economics, the practice of interest is categorized as *riba*, which is explicitly prohibited (Yudiana, 2020). Islam views that the increase in the value of money should not be obtained merely due to the passage of time, but rather through real and productive economic activities. Consequently, an alternative concept has emerged in Islamic economics known as the Economic Value of Time, which emphasizes that time indeed has economic value, yet any increase in value must originate from profit-sharing mechanisms and lawful business activities, rather than from interest-based returns (Zendania & Setyani, 2022).

In the context of retirement planning, this issue becomes even more relevant, as pension funds essentially represent long-term accumulated assets that are highly dependent on mechanisms for developing the value of money over time. If the concept of TVM is applied purely through a conventional approach, it may potentially conflict with Islamic principles. On the other hand, completely disregarding the concept of TVM may lead to financially irrational retirement planning. Therefore, an approach is required that is capable of bridging the needs of modern financial planning with the principles of Islamic finance.

As an effort to provide normative guidance regarding the implementation of sharia-based pension programs, the National Sharia Council of the Indonesian Ulema Council (DSN-MUI) has issued Fatwa No. 88/DSN-MUI/X/2013 concerning the General Guidelines for the Implementation of Pension Programs Based on Sharia Principles. This fatwa stipulates that pension fund management must be conducted by avoiding elements of *riba*, *gharar*, and *maysir*, and must utilize sharia-compliant contracts such as *mudharabah*, *wakalah*, and *ijarah* (DSN-MUI, 2013). In addition, pension fund investments are only permitted in halal instruments that comply with sharia principles, such as *sukuk*, sharia-compliant stocks, and Islamic mutual funds. This fatwa serves as an important normative foundation for the management of sharia pension funds in Indonesia in order to remain consistent with Islamic legal provisions.

Several previous studies have examined the management of sharia pension funds and the implementation of Fatwa DSN-MUI No. 88/2013. For instance, research conducted by Norman and Pahlawati (2021) analyzed sharia pension fund management from the perspective of operational compliance, while Sari and Nasution (2022) explained the mechanisms of pension fund management based on sharia contracts. However, these studies primarily focused on operational and compliance aspects and have not yet addressed in-depth conceptual analysis regarding the relationship between the Time Value of Money and sharia-based retirement planning. In other words, studies that specifically discuss how the TVM concept can be adapted into a sharia-based pension system remain very limited.

This condition indicates a clear research gap. First, there is still a lack of research integrating the concept of Time Value of Money with Islamic financial principles in the context of retirement planning. Second, there are limited studies analyzing the theoretical implications of applying TVM to sharia pension fund mechanisms based on Fatwa DSN-MUI No. 88/2013. Third, most previous studies are descriptive-normative in nature and have not yet provided a comprehensive analytical framework regarding how TVM can be implemented without violating sharia principles.

Based on these gaps, this study offers several aspects of novelty. First, this research seeks to conceptually examine how the Time Value of Money can be interpreted within a sharia perspective and applied to retirement planning based on Islamic principles. Second, this study connects modern financial theory with the normative guidelines of Fatwa DSN-MUI No. 88/2013, thereby producing a more integrative analytical model. Third, this research provides practical contributions in the form of conceptual recommendations for sharia pension fund managers to develop retirement planning that remains financially rational while being fully compliant with sharia principles.



This study is built upon several major theoretical foundations. First, the Time Value of Money theory, which explains that the value of money changes over time and serves as the basis for long-term investment calculations (Ross et al., 2016). Second, Islamic Finance Theory, which emphasizes that any increase in wealth must be obtained through lawful mechanisms, free from *riba*, and based on profit-sharing principles (Yudiana, 2020). Third, Retirement Planning Theory, which views retirement planning as a systematic process to ensure financial adequacy in the post-productive period (Purnama et al., 2021). Fourth, the Maqashid al-Shariah approach, particularly the principle of *hifz al-mal* (protection of wealth), which serves as an essential philosophical foundation in the management of sharia pension funds.(Purnama et al., 2021)

## **LITERATUR REVIEW**

The concept of the Time Value of Money (TVM) states that the utility of money at the present time is higher than the utility of the same amount of money in the future. This concept implicitly represents the time preference of economic agents in holding money. Based on this principle, an economic agent is assumed to have a greater tendency to prefer possessing money at present rather than in the future, as individuals are generally motivated by their own economic interests. In simple terms, the concept of the Time Value of Money explains that if the utility of loaned money for the lender is considered equal to the value of money in the future, the lender will add interest to the loan so that the amount received in the future is perceived to be equivalent to the present value at the time of repayment.(Yudiana, 2020)

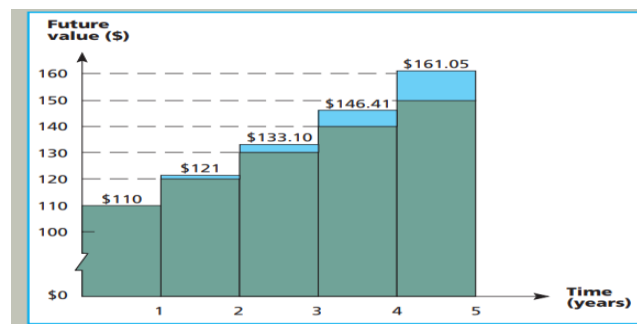
### **Future Value**

Future Value refers to the amount of money that will be obtained from an investment or savings at a certain point in the future if it is allowed to grow at a particular interest rate or rate of return. In the context of investment, future value represents the result of the growth of an investment over time. It serves as an estimation of how much the value of an investment will become after a specific period, taking into account several factors such as the expected rate of return, the investment period, and whether the investment returns are compounded periodically. Several important factors influence the determination of future value.

Inflation has a significant impact on the economy and on the daily lives of individuals. The same amount of money will be able to purchase fewer goods and services in the future. Consequently, the real value of money tends to decline over time. Both individuals and companies often find it difficult to plan accurately due to uncertainty regarding future price levels. The rate of inflation is generally measured using the

Consumer Price Index (CPI), which reflects the average change in prices of goods and services commonly purchased by consumers. Monetary authorities, such as central banks, frequently utilize monetary policy instruments to control inflation. These measures may include adjusting interest rates, controlling the money supply, or implementing other policies aimed at influencing the inflation rate. Although high inflation is usually considered detrimental because it reduces purchasing power, a moderate and controlled level of inflation can stimulate economic growth by encouraging consumption and investment..(Joventus et al., 2019)

Understanding inflation is essential in both personal and business financial planning because it can significantly affect the value of money, investment decisions, and long-term planning strategies. Individuals and companies generally take the impact of inflation into consideration when making financial decisions in order to manage risks effectively and achieve their financial objectives more efficiently.



*Source: Fundamental of Corporate Finance, Ross 2016*

In simple terms, the increase in the value of money may appear to be constant each year; however, the accumulated compound value obtained actually becomes larger over time. The amount of compound value continues to grow because more interest is generated, which in turn increases the amount that must be compounded. Consequently, the future value of money is highly dependent on the assumed interest rate, particularly in the case of long-term investments.

Pension funds are closely related to the concept of future value, as the accumulation of retirement savings relies on the growth of invested funds over time. The calculation of future value is therefore fundamental in pension planning. The formula for future value with periodic compounding where interest is added back to the investment at regular intervals is expressed as follows:

$$FV = PV \times (1 + rm)^{mn} \quad FV = PV \times (1 + mr)^{mn}$$

Di mana:

1.  $FV$  is future value.
2.  $PV$  is present value.

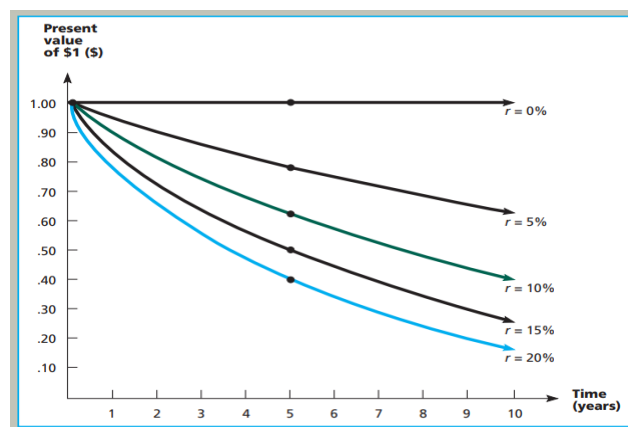


3.  $rr$  is rate of return /period.
4.  $mm$  is the number of compound interest periods per year.
5.  $nn$  is calculating per year.

This formula provides an estimate of the future value of an investment, assuming that the interest rate or return on the investment remains constant over the investment period. It is important to remember that the actual value of an investment can vary depending on factors such as market volatility, inflation, and other costs associated with the investment. (Ross et al., 2016)

## Present Value

Present Value is a financial concept that refers to the current value of a future cash flow, assessed using an appropriate discount rate. In simpler terms, present value represents the value of money in the future that has been adjusted to reflect its worth at the present time. Present value plays a crucial role in financial analysis because it helps evaluate the current value of cash flows that are expected to be received or paid in the future. This concept enables investors or financial managers to compare the value of various future cash flows with the present value of money, which can then be used as a basis for making more informed investment or financial decisions. (Zendania & Setyani, 2022)



Source : (Fundamental Corporate Finance, Ross. 2016)

From the graph it is explained that every year the present value of money (present value) where  $r$  as the rate of return increases every year but the present value of money will also decrease every year..

Life Cycle Theory, proposed by Modigliani and Brumberg (1954), is an economic theory that explains that individuals tend to manage their consumption and savings patterns intertemporally in order to maintain a relatively stable level of welfare throughout their life cycle. The theory states that during the productive period, individuals generally earn income that is relatively higher than their immediate needs, enabling them to allocate a portion of that income into savings or investments. Conversely, during the non-productive

period or upon entering retirement age, individuals no longer receive active income, and therefore their living expenses must be financed from the accumulated savings and investments that have been previously collected. Thus, the behavior of saving during working years and utilizing those savings during retirement represents a natural mechanism for balancing consumption over the course of a lifetime. In the context of financial planning, this theory serves as the primary foundation for the existence of pension fund programs, as pension funds function as instruments to transfer purchasing power from the productive period to the retirement period, allowing individuals to maintain their financial well-being in old age.

Retirement is generally defined as “no longer working because the term of employment has ended.” According to Rosanti and Krisnansari (2010), retirement refers to the termination of an employee’s employment relationship with a company when the employee reaches a certain age. Meanwhile, Kasmir (2002) states that a pension fund is an institution or legal entity that administers and manages pension programs. The purpose of such programs is to provide welfare and financial security for company employees, particularly those who have reached retirement age. In accordance with the applicable agreement, pension funds managed by an institution or legal entity collect contributions from employees’ income and subsequently return those funds in the form of pension benefits. Pension benefits can only be provided when employees are entitled to them and have reached retirement age or meet other specified conditions. Furthermore, based on Law No. 11 of 1992 concerning pension funds, a pension fund is defined as a legal entity that manages and operates a program which promises retirement benefits to employees as a form of welfare after the end of their employment period. (Alivia Nurhasanah, 2023)

Pension funds require a reporting system that is separate from the employer, with the purpose of providing accurate financial information regarding the management and performance of the pension fund. Retirement is defined as an individual’s right to receive income after working for a certain number of years and having entered the retirement period, or due to other conditions in accordance with the agreed terms. Pension money refers to a sum of money paid to a worker who has retired, either due to old age or the inability to continue working. A pension fund represents periodic contributions made by individuals, employees, and employers in relation to a pension plan, which are later paid out to the retired individual or to the individual’s beneficiaries. (Norman & Pahlawati, 2021)

## **RESEARCH METHOD**

This study employs a qualitative research method using a library research approach with a normative-analytical perspective. The type of research applied is descriptive-



analytical research, which aims to conceptually analyze the implications of the application of the Time Value of Money concept to sharia-based retirement planning based on Fatwa DSN-MUI No. 88/DSN-MUI/X/2013. The data sources in this study consist of primary data in the form of the document of Fatwa DSN-MUI No. 88/2013 and related regulations concerning sharia pension funds, as well as secondary data derived from books, scientific journals, articles, and other literature relevant to the concept of TVM and Islamic finance. Data collection techniques are carried out through documentation studies and literature review. Data analysis is conducted using content analysis and descriptive-analytical methods, namely by examining, comparing, and interpreting the concept of Time Value of Money from an Islamic perspective and its implications for the mechanism of sharia-based retirement planning.

## **RESULT AND DISCUSSION**

### **Analysis Konsep Time Value of Money (TVM)**

The concept of Time Value of Money (TVM) is a fundamental concept in modern finance that explains that the value of money is not constant over time. Money owned at the present time is considered to have a higher value compared to the same amount of money in the future. This condition is influenced by several main factors, namely inflation, investment opportunities, and economic uncertainty risks. Therefore, TVM essentially emphasizes that time has a significant influence on the economic value of a financial asset.

In conventional financial practice, the concept of TVM serves as the basis for various long-term financial decisions, including retirement planning. The calculation of TVM is generally implemented through two main instruments, namely Present Value and Future Value. Present Value is used to determine the current value of a sum of money to be received in the future by considering a certain discount rate. Meanwhile, Future Value is used to project the value of money at present if it is invested over a certain period of time with an assumed rate of return. These two concepts enable individuals and financial institutions to plan financial needs in a more measurable and rational manner.

The results of the analysis indicate that the application of TVM is highly relevant in the context of retirement planning, as pension funds are essentially long-term accumulations of funds whose value will continue to change over time. Without considering the concept of TVM, retirement planning has the potential to become unrealistic, since the amount of money prepared today may not be sufficient to meet future living needs due to the effects of inflation and changes in purchasing power. Therefore, TVM functions as an important analytical tool to project the adequacy of pension funds more accurately.

However, from the perspective of Islamic economics, the application of the TVM



concept raises conceptual issues. In the conventional financial system, TVM is generally calculated using interest rates as the basis for determining the time value of money. This mechanism assumes that the increase in the value of money can occur solely due to the passage of time, without being linked to real economic activities. Such a view contradicts the basic principles of Islamic finance, which prohibit *riba* (interest). Islam holds that an increase in wealth can only be justified if it is obtained through productive business activities and fair profit-sharing mechanisms.

Based on this analysis, it can be understood that, in substance, TVM is not a concept that is entirely contradictory to sharia principles. The main issue does not lie in the idea that money has a time value, but rather in the method of calculation, which in the conventional system uses interest-based instruments. From an Islamic perspective, the time value of money can still be recognized as long as the increase in value originates from halal investment activities and sharia-compliant contracts. Therefore, the concept of TVM needs to be reconstructed so that it aligns with the principles of Islamic finance.

Living expenses tend to show a declining trend over time; however, income levels depend greatly on an individual's productive age. As people grow older and become less productive, their income generally decreases compared to when they were in their prime working years. In reality, not many individuals seriously calculate or prepare their pension funds. Financial resources for retirement must be adequate to meet future needs. It has also been explained through the concept of Time Value of Money that the value of money today will not be the same as its value in the future, which tends to increase due to various economic factors.

According to Budisantoso and Gunanto (2010), financial planning is defined as a process aimed at achieving personal goals through well-structured and systematic financial management. One of the important life goals that individuals seek to achieve is the availability of sufficient pension funds, which can be realized through proper retirement planning.

Furthermore, Kagan (2019) states that retirement planning is the process of determining retirement income goals as well as the actions and decisions required to achieve those goals. Retirement planning includes identifying potential sources of income, estimating future expenses, implementing savings programs, and managing assets and financial risks effectively.

There is also a perspective regarding the implementation of pension funds within the concept of Time Value of Money, in which an individual pays regular contributions to a pension institution. These contributions are managed through a *wakalah* contract, where the pension fund institution acts as an agent in managing the participants' funds. The



collected pension funds are then invested, and such investments must comply with sharia principles, meaning that they must be directed toward halal and sharia-compliant business activities. The returns generated from these investments are subsequently reinvested or returned to the pension fund management institution for further management.

The funds obtained from participant contributions as well as investment returns are utilized for several purposes, namely:

- 1) To cover the operational and functional budget of the pension fund management institution, such as employee salaries, office rent, and other operational expenses.
- 2) To pay pension benefits to participants who have reached retirement age, participants who are no longer able to work, or to the beneficiaries and family members designated by the participants. (Sari & Nasution, 2022)

According to the National Sharia Council of the Indonesian Ulema Council (DSN-MUI) Fatwa Number 88, pension fund management must be carried out in accordance with sharia principles to ensure compliance with Islamic financial guidelines. Furthermore, based on Law Number 11 of 1992 concerning Pension Funds, every worker is encouraged to have a pension fund that can guarantee welfare and provide financial security in the future, particularly after entering retirement age or upon the completion of their working period.

Wild, Subramanyam, and Halsey (as cited in Bachtiar, 2005: 177) define a pension plan as a promise made by an employer to provide benefits to employees after retirement. This arrangement involves three main parties: the employer, who contributes to the pension program; the employees, who receive the benefits; and the pension fund institution itself. The pension fund is established as a separate entity from the employer and is administered by an appointed trustee. In general, pension programs can be classified into two types, namely Defined Contribution Plans and Defined Benefit Plans.

- 1) Defined Contribution Plans are pension programs in which the amount of contributions is determined in the pension fund regulations, and all contributions along with the investment returns are recorded in the individual accounts of each employee as pension benefits. In this type of program, the benefits depend on the total accumulated contributions and the results of their investment performance. This program is regulated under pension fund provisions and is distinct from other pension programs that are not categorized as defined contribution plans.
- 2) Defined Benefit Plans, according to Wild, Subramanyam, and Halsey (as cited in Bachtiar, 2005:178), refer to pension programs in which the amount of pension benefits promised by the company to retired employees is predetermined. In this program, the employer bears the investment risk and is responsible for ensuring that sufficient funds are available to meet the promised benefits. In contrast, defined contribution plans

specify only the amount contributed by the employer to the pension program, while the final benefit depends on investment performance.

In the management of pension funds, there are specific institutions responsible for fund administration. Pension fund management can be carried out either by the employer through an Employer Pension Fund (Dana Pensiun Pemberi Kerja/DPPK) or by a financial institution through a Financial Institution Pension Fund (Dana Pensiun Lembaga Keuangan/DPLK).

### **Fatwa MUI No. 88/DSN-MUI/X/2013 on Guidelines for Pension Fund Management Based on Sharia Principles**

A fatwa is defined as an opinion in the field of law or an official legal opinion (Wehr, 2020). The term “law” in this context does not only refer to state law but also to Islamic law, which encompasses ahkam (legal rulings) such as wajib (obligatory), sunnah (recommended), haram (prohibited), makruh (discouraged), and mubah (permissible). The establishment of the Indonesian Ulema Council (MUI) aims to contribute to the realization of a safe, peaceful, just, and prosperous society that is blessed by Allah and aligned with Pancasila, the 1945 Constitution, and the Guidelines of State Policy (GBHN).

#### **1) Sharia Principles in Pension Fund Management**

- a. Pension funds must be managed in accordance with sharia principles, which include avoiding riba (interest), gharar (uncertainty), and maysir (speculation).
- b. Investment of pension funds must be carried out in halal instruments that comply with sharia principles, such as sharia-compliant stocks, sukuk (Islamic bonds), and sharia mutual funds.

#### **2) Investment Instruments**

- a. Pension funds may be invested in financial instruments that comply with sharia principles, including sharia money market instruments, sharia deposits, sukuk, sharia stocks, and property investments that do not contradict sharia regulations.
- b. Investment management must be conducted professionally and prudently by taking into account risk considerations and optimal returns for pension fund participants.

#### **3) Risk Management**

- a. Pension fund managers are required to implement effective risk management to protect the interests of participants.
- b. Risk management must include the processes of identifying, evaluating, monitoring, and controlling risks that may arise in the management of pension funds.

#### **4) Transparency and Accountability**



- a. Pension fund managers are obliged to submit financial reports periodically to pension fund participants and other related parties.
- b. Financial reports must be prepared in accordance with sharia accounting standards and audited by sharia auditors.

**5) Commitment to Sharia Compliance**

- a. Pension fund managers must have a Sharia Supervisory Board (Dewan Pengawas Syariah/DPS) responsible for overseeing compliance with sharia principles in fund management.
- b. The DPS plays a role in providing fatwas and advice related to investment activities and pension fund management to ensure continuous adherence to sharia principles

**6) Objectives of Sharia Pension Fund Management**

This fatwa aims to:

- a. Provide guidance for pension fund managers so that funds can be managed in accordance with sharia principles.
- b. Ensure that pension funds are managed in a safe, professional, and transparent manner, while providing maximum benefits to participants.
- c. Encourage ethical and fair pension fund management in line with Islamic values and sharia principles.

In 2013, sharia principles began to be formally applied in the management of pension funds. This fatwa regulates various aspects of pension fund management by emphasizing compliance with Islamic law. The following are the main points contained in the fatwa:

**General Principles**

- 1) **Sharia-Compliant Investment:** Pension fund investments must be carried out in financial instruments and assets that comply with sharia principles. Investments in sectors prohibited in Islam, such as alcohol, gambling, and activities involving *riba* (interest), must be avoided.
- 2) **Transparency and Fairness:** Pension fund management must be conducted transparently and fairly, providing clear information to participants regarding financial conditions and investment performance.
- 3) **Sharia Compliance:** Every decision and activity related to pension fund management must obtain approval from the Sharia Supervisory Board (Dewan Pengawas Syariah/DPS) to ensure conformity with sharia principles.

### **Management of Sharia Pension Funds**

Contracts (Akad): Sharia pension fund management must use contracts that are in accordance with Islamic principles, such as mudharabah (profit-sharing) and wakalah (agency).

- 1) Investment: Sharia pension funds must be invested only in halal instruments and must not involve elements that are prohibited or contain riba.
- 2) Distribution of Investment Returns: Investment returns must be distributed to participants in accordance with the agreed contracts and carried out in a fair and just manner.

### **Payment of Pension Benefits**

- 1) Pension Benefits: The pension benefits received by participants must originate from sharia-compliant investments. These benefits may be provided in the form of lump-sum payments or periodic payments, according to the initial agreement.
- 2) Participant Welfare: Pension fund management must focus on the welfare of participants by ensuring that the benefits received are in accordance with their contributions and the investment returns obtained.

### **Prohibitions**

- 1) Riba: All forms of riba in pension fund management must be strictly avoided. This includes interest derived from investments that do not comply with sharia principles.
- 2) Non-Halal Activities: Investments in sectors or instruments that are not in accordance with sharia, such as alcohol, gambling, and other non-halal industries, are strictly prohibited.

This fatwa is intended to provide clear guidance in managing pension funds in accordance with sharia principles, to ensure certainty and fairness for participants in sharia pension funds, and to guarantee that all investments are conducted in a halal and ethical manner. (Xi et al., 2020)

### **Implications of the Time Value of Money Concept on Sharia-Based Retirement Planning Based on Fatwa DSN-MUI No. 88/2013**

Based on the results of the analysis of the Time Value of Money (TVM) concept and the principles of sharia pension funds as regulated in Fatwa DSN-MUI No. 88/DSN-MUI/X/2013, several important implications, both conceptual and practical, can be formulated. The first implication is that the concept of TVM remains significantly relevant in sharia-based retirement planning. Retirement planning is essentially a long-term financial activity that requires projections of fund values in the future. Without considering changes in the value of money due to inflation and investment opportunities, retirement planning may become unrealistic and unable to ensure the adequacy of funds during



retirement. Therefore, the basic principle of TVM is still necessary as an analytical tool to calculate pension fund requirements in a rational and measurable manner.

However, the second implication shows that the application of TVM in the sharia pension system cannot be carried out using the same mechanisms as in conventional finance. In conventional practice, TVM is generally calculated using interest rates as the basis for determining the time value of money. This approach contradicts sharia principles because interest is categorized as *riba*, which is strictly prohibited in Islam. Based on the provisions of Fatwa DSN-MUI No. 88/2013, all mechanisms of pension fund management must be free from elements of *riba*, *gharar*, and *maysir*. Thus, an important implication of this fatwa is that the calculation of TVM in sharia-based retirement planning must be reconstructed so that it does not rely on interest-based instruments.

The third implication relates to changes in the basis for calculating the time value of money within the sharia pension system. In the sharia framework, future value is not calculated based on interest rates but rather on estimated returns from halal investments that are based on sharia contracts. This means that projections of pension fund growth must be based on the potential returns from sharia-compliant investment instruments such as *sukuk*, sharia stocks, sharia mutual funds, or other forms of real-sector investments that comply with Islamic principles. Through this approach, TVM can still be used as a calculation tool, but its meaning shifts to a projection of economic value generated from halal business activities, rather than from the mere increase of money due to the passage of time.

The fourth implication is the need to adjust retirement planning models to align with sharia contracts as stipulated in the fatwa. In the sharia pension system, the relationship between participants and pension fund managers is based on contracts such as *mudharabah* or *wakalah*, in which the growth of participant funds depends on real investment performance and profit-sharing mechanisms. Therefore, TVM-based pension calculations must be adapted to the characteristics of these contracts. Projections of the future value of pension funds cannot be determined with certainty as in interest-based systems, but instead must use a more flexible estimation approach in accordance with the principles of fairness and transparency in sharia.

The fifth implication concerns the practical aspects of sharia pension fund management. The application of the TVM concept in sharia-based retirement planning requires pension fund managers to be more careful in selecting halal and productive investment instruments. Pension fund managers need to formulate investment strategies that are capable of generating optimal returns without violating sharia provisions. In addition, education for participants is also important so that the public understands that

projections of pension fund growth in the sharia system are based on business performance rather than on fixed interest returns.

Conceptually, the main implication that can be concluded is that there is no fundamental contradiction between the concept of Time Value of Money and sharia financial principles. The key difference does not lie in the recognition that money has time value, but rather in the source of that added value. From an Islamic perspective, the time value of money is acknowledged as long as its increase is derived from real economic activities that are halal and conducted through valid sharia contracts. Therefore, TVM in sharia-based retirement planning is more appropriately interpreted as the “economic value of time,” generated through sharia-compliant investment mechanisms.

## CONCLUSION

This study concludes that the concept of the Time Value of Money (TVM) remains fundamentally relevant in retirement planning, as it helps project future financial needs and ensures the adequacy of pension funds in the post-productive period. TVM provides a rational framework for understanding how the value of money changes over time due to inflation, investment opportunities, and economic risks, which is essential for long-term financial planning.

However, from an Islamic finance perspective, the conventional application of TVM based on interest rates cannot be adopted, as interest (riba) is strictly prohibited. Based on Fatwa DSN-MUI No. 88/DSN-MUI/X/2013, sharia-based pension fund management must avoid riba, gharar, and maysir, and must apply sharia-compliant contracts such as mudharabah and wakalah. Therefore, the application of TVM in sharia-based retirement planning requires a conceptual adjustment rather than total rejection.

The findings indicate that TVM can be applied in sharia pension schemes by interpreting it as the economic value of time generated through halal and productive investment activities. In this context, future value calculations are based on expected returns from sharia-compliant investment instruments, such as sukuk, sharia-compliant stocks, and Islamic mutual funds, instead of fixed interest rates.

Overall, this study confirms that there is no fundamental contradiction between the Time Value of Money and Islamic financial principles. The key distinction lies in the source of value growth. In Islamic finance, the increase in the value of pension funds must originate from real economic activities and profit-sharing mechanisms. By aligning TVM with sharia principles and the objectives of Islamic law (maqashid al-shariah), particularly the protection of wealth (hifz al-mal), sharia-based retirement planning can remain both financially rational and fully sharia-compliant.



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