Journal of Islamic Economics, Management, and Business
Vol.3. No.1. (2021), 59 – 72, DOI: 10.21580/jiemb.2021.3.1.8935
Magister of Sharia Economy, Faculty of Islamic Economics and Business
Universitas Islam Negeri Walisongo (p-ISSN: 2721-0197; e-ISSN: 2721-0324)
Published online in http://journal.walisongo.ac.id/index.php/JIEMB

An Islamic perspective on decision making under uncertainty

Muhammad Sri Wahyudi Suliswanto

Faculty of Islamic Economics and Business, Universitas Muhammadiyah Malang, Indonesia

Abstract

Purpose – The purpose of this study is to find out the Islamic view regarding decision making in uncertainty.

Method – The method used is literature study from various related references.

Result – The result of this study is that uncertainty or risk is not something that is forbidden in Islam.

Implication – The implication of this study is the advantage of Islamic economics which lies in recognizing this uncertainty. Very useful as a stimulant and motivation to "engineer" an investment to bring a return.

Originality – This is the first study examining an Islamic perspective on decision making under uncertainty.

Keywords: decision making, uncertainty, Islamic perspective

Introduction

Every human being will often be faced with decision making which is a process of selecting the best alternative from several alternatives systematically to be followed up as a problem-solving step, and we certainly must uphold Islamic values in decision making (Fontaine, 2008). In the process of deciding, there are things we need to know, namely the existence of a decision that is certain and some is uncertain (certainty and uncertainty) (Ifcher & Zarghamee, 2020). Determination of certainty and uncertainty is closely related to how a possible event can be measured (probability).

The term probability is used to quantitatively measure the probability of an uncertain event (Deng, 2020). The concept of probability is divided into two, namely objective probability and subjective probability (Grant, Rich, & Stecher, 2020). Objective probability is a concept based on relative frequency in the long run. For example, a box containing 3 white balls and 6 red balls, the size, weight, etc. are the same except for the colour. Then the box is shaken, and one is taken without looking. Whether the ball is white or red, we don't know. Therefore, the probability value for the cue ball is 1/3 of the red ball. Which means this experiment is a theory of speculation that shows uncertainty and, in the economy, it is called the "Economic of Uncertainty" (Baker, Bloom, & Davis, 2016).

Uncertainty is often defined as a situation where there are several possible events and each event will cause a different result (Denœux, Dubois, & Prade, 2020). However, the level of likelihood or probability of the event itself is not known quantitatively. The word uncertainty means a doubt, in a broad sense it is a measure where the validity and accuracy of the results are still in doubt. Thus, this uncertainty is caused by imperfect information (imperfect knowledge) from humans (Jindra & Moeller, 2020).

So far, we have always assumed that consumers, producers, workers, and soon have complete information about the choices that are suitable for them. Even though it is not the case, Consumers should look for the lowest price. Workers must seek information about alternative employment. So that often the information received by economic actors is not symmetrical, this asymmetry creates uncertainty that leads to risks (Finkelstein & Poterba, 2014; Othman, Alhabshi, & Haron, 2019; Ullah, et al., 2020).

Even so, decision making must be carried out even in uncertainty. Decision making under uncertainty is seen as choosing between lotteries and of course there are risks faced in every decision taken. The study of decision making under uncertainty from an Islamic perspective is quite rare, so far, we only find Al-Suwailem who explains in general about decision making in uncertainty with an Islamic perspective approach (Al-Suwailem, 2002). Other studies that discuss uncertainty from an Islamic perspective discuss more about risk avoidance in the perspective of Islamic finance (Erbaş & Mirakhor, 2013; Waemustafa & Sukri, 2016; Bouslama & Lahrichi, 2017).

Literature review

Types of uncertainty

In general, uncertainty can occur in four ways, namely: in the outcome of the game, in business or investment, in exchange, and in pure risk.

Uncertainty in the game. Games can be classified into three things, namely: games of chance, games of dexterity and games of natural events. In these three games, the uncertainty factor is something that cannot be avoided, in other words, basically a game will always provide uncertainty: win, lose, or even draw. If it contains a zero-sum game, where one party must bear material losses, while the other party gains, the game is categorized as an act of gambling (*maysir*), which is prohibited in Islam. Whereas if neither party is harmed materially (non-zero-sum game), the game is allowed in Islam, and the gift given to the winner is categorized as a prize (Lahuri, 2012).

Uncertainty in business or investment. Basically, business or investment is an activity that cannot be separated from an uncertainty (uncertain contract). In business or investment cooperation, actors will inevitably face one of three possibilities, namely: profit, loss and no gain and no loss. If the profit or loss from this business or investment activity is determined to be borne by only one of the parties from the start, this activity can be categorized as a *ribawi* activity, because it treats a contract with an uncertain character to be certain (certainty contract), and it prohibited by Islam. However, if both parties agreed from the start to share the risks and benefits, then this business activity is legal and permissible by Islam (Lahuri, 2012; Nordin, Aziz, Ahmad, & Daud, 2014).

Uncertainty in Exchange. Based on the level of certainty of the results obtained, the contract can be divided into two groups, namely: first is natural certainty contract and second is natural uncertainty contract. Natural Certainty Contract is a contract in a business that provides certainty of payment, both in terms of amount (amount) and time (timing). The cash flow can be predicted with relative certainty because it has been agreed by the two transacting parties at the beginning of the contract. These contracts '*sunnatullah*' (by their nature) offer a fixed and definite return, so they are fixed and predetermined.

The object of exchange (both goods and services) must also be determined at the beginning of the contract with certainty, both in terms of quantity, quality, price, and time of delivery. These categories are sale and purchase contracts, wages, rent and others. In this type of contract, the transacting parties exchange their assets (both real assets and financial assets). So, each party remains independent and does not mix with each other to form new businesses, so there is no join risk sharing. For example, A gives goods to B, then in exchange B hands over money to A, the goods are exchanged for money, resulting in a sale and purchase contract. These natural certainty contracts can be explained by a general theory called the theory of exchange. Then in return B hands over the money to A, here goods are exchanged for money, so that a sale-purchase contract occurs.

These natural certainty contracts can be explained by a general theory called the theory of exchange. then in return B hands over the money to A, here goods are exchanged for money, so that a sale-purchase contract occurs. (Lahuri, 2012).

Second, natural uncertainty Contract is contracts in business that do not provide certainty of return (income), both in terms of quantity and time. The rate of return can be positive, negative, or zero. These contracts are investment contracts, because investment contracts *sunnatullah* (by their nature) do not offer a fixed and definite return, hence their nature is not fixed and predetermined. In this type of contract, the transacting parties mix their assets (both real assets and financial assets) into one unit, and then assume the risk together to get the benefit. The advantages and disadvantages are shared. These natural uncertainties can also be explained by a general theory called the theory of venture (Lahuri, 2012).

Thus, it can be concluded that the character of the exchange contract is to provide certainty, both in terms of quantity and time. So if it contains speculative action, an exchange will produce uncertainty, because it will produce three possibilities, namely: profit, loss, and no gain and no loss (break-even). This uncertainty arising from speculation in an exchange is called *taghrir* (*gharar*) and is prohibited in Islam (Lahuri, 2012; Nordin, Aziz, Ahmad, & Daud, 2014; Elfakhani & Sidani, 2015).

Uncertainty in pure risk. In everyday life, humans will face pure risks. These risks are uncertain; they may or may not befall humans. Thus, the outcome of this risk uncertainty is only loss or no loss, and no profit. People who travel to an area, for example, will only face two possible risks: surviving their destination or not. If he survives, he will not get any profit, but he only has avoided the disaster (no loss). Conversely, if he cannot make it to his destination or is hit by an accident, it means he has suffered a loss. In facing this risk, humans can bear it individually and collectively. In terms of taking risks together, they can carry out mutual assistance (non-commercial) cooperation (Lahuri, 2012; Hassan, Paltrinieri, Dreassi, Khan, & Bahoo, 2020).

Level of uncertainty

The uncertain condition arises due to several reasons, among others: (1) the interval between planning for losses starts until the activity ends. The longer is the interval, the greater is the uncertainty. (2) Limited availability of necessary information, and (3) Limited knowledge / skills / techniques for decision making (Sanchez - Rodrigues, Potter, & Naim, 2010).

Uncertainty has many levels (Afdawaiza, 2011). There are several levels of uncertainty with their respective characteristics: First, there is no (certain) uncertainty with the characteristics of the results can be predicted with certainty. Take natural law, for example. At this first level, conditions of certainty are very high, the results can be predicted relatively. We can predict with certainty that the earth orbits the sun for 360-365 days (a year). *Second,* Uncertainty is objective, with the characteristics of the outcome identifiable and the probabilities known such as the game of dice. There are six possible numbers to be obtained, namely 1, 2, 3, 4, 5 and 6. Each of them has an exit probability value of 1/6. *Third,* subjective uncertainty, with identifiable outcome characteristics but unknown probabilities such as investment. The identification of results and their probabilities (likelihoods) is very difficult to do. If a certain amount of funds is invested, how much is the possibility of a loss to be experienced. If there is a loss, what kind of loss will it be, and vice versa*. Fourth,* very uncertain, the results cannot be identified, and the probability is unknown. For example, space exploration. It is not known what results will be obtained from space.

Methodology

This research uses Systematic Literature Review (SLR). Systematic Literature Review consists of stages. The stages in the SLR are divided into 4. They are Planning (related to the development of ideas and methods/protocol plans), Data Collection Stage, and Analysis Stage (descriptive and thematic analysis). Then the Synthesis is the last stage (discussion).

The stage begins with the determination of research questions (Research Questions/RQ). RQ used as a reference in the library search process. The research question is how to make decisions in uncertainty in the view of Islam. As for the data collection stage, to find articles relevant to this research, through the Google Scholar database based on accessibility. The next stage is the analysis and synthesis of the findings and ends with a discussion of the results of the SLR. The conclusion section will contain a summary of the conclusions, according to the RQ.

Results and discussion

Decision making under uncertainty from an Islamic perspective

Uncertainty is a condition that causes the risk to grow. So, to start this discussion, it is necessary to distinguish two forms of risk, namely (1) uncontrollable risk, in which the decision maker does not have any control over this form of risk. (2) Controllable risk and can be influenced by decision makers (economic agent) (Al-Suwailem, 2002).

In Islam taking any risk is something that is allowed and even praised. This is because actions like this will promote economic growth and development. Risk will create added value to create creative endeavours. That is, risk in this case can be useful as motivation to create creative endeavours. Of course, the risk in this case is a risk that can be controlled, and this kind of risk can be done. Only risks that can stimulate and stimulate productive endeavours are permitted in Islam.

In terms of controllable risk, the uncertain outcome of this form of risk is driven by definite causes which can influence or control the likelihood of the outcome. So, if an economic agent wants to get results from a business that is uncertain, then he must undertake efforts that can later bring profit. This is the meaning of the words of the prophet to his friend: "Tie the camel, after that fear". People will not know whether the camel that has been tied will remain in its original place, but for the camel to remain in its place, what must be done are actions and efforts that can make the camel stay in its place. This means that the outcome of this uncertainty is largely determined by the efforts made.

The characteristic contained in the courage to face risks is the element of responsibility. This element distinguishes between taking risk and taking chance. Deciding on controllable risk, the success depends on the calculation of the decision maker. That is why it is said that risk will stimulate people to do creative things to get the desired return. To achieve the expected results, an economic agent not only rely on the opportunities that exist, but also do productive efforts to achieve the desired results.

When an economic agent sees an opportunity, what should be done is creative effort as a form of responsibility for his choices, not solely relying on opportunities. That is why it is said that the uncertainty of a business, its success is largely determined by the actions and efforts made.

The purpose of risk sharing in relation to the results obtained, namely (1) Passive risk is a game of chance, which only relies on luck. (2) Responsive risk that allows a probability distribution of the outcome with a logical causality relationship. This can be associated with the game of skill.

One way to know that the decision maker relies solely on chance or cause to achieve the desired result is to ask the following question: if the desired result does not materialize, will the decision maker still believe that he has taken the right action to achieve the desired goal? Or will he feel that it is a waste of manpower and resources? If the answer is the former, then he judges that the cause is sufficient to offset the cost, and thus it is a worthwhile cause. If the latter, then the decision maker counts on luck because the value of the cause is less than the costs incurred (Al-Suwailem, 2002).

To elaborate, suppose you plan to invest in a project whose returns are uncertain. Then you must ask yourself the following questions: What if the project fails? If the answer is: 'the odds are in my favour; if it fails, it will just be bad luck 'or' it's worth the effort 'then you tackle the problem appropriately. By feeling satisfied even if the project fails, you appreciate the cause, and thus feel that the effort was not wasted. Obviously, this doesn't mean that a person isn't hurt by failure. It only means that the value of the cause is sufficient to fight the pain. When the right causes are put in place, failure can be safely attributed to 'bad luck', which the agent is not blamed for.

Conversely, if the answer to the question 'what if the project fails?' is: 'Oh no! I don't want to think about that possibility! 'or' this will never happen to me, 'so one should think carefully before engaging in such a project. Such a response suggests that the agent has overestimated the likelihood of success, so as not to properly address the relevant cause. He was counting on luck to be on his side. So, if he fails, the pain of failure is not matched by the value of the actions taken. Whatever costs the agent incurs can be compensated only if it is successful; in the case of failure, they represent a source of sadness and regret (Al-Suwailem, 2002).

Instruments Used in Facing Uncertainty

Uncertainty is an intrinsic thing in all economic activity; even Keynes argued that uncertainty is both the cause and the effect of saving money, and the use of money in the economic process (Fontana & Gerrard, 2004). So that often what happens in the economy to anticipate several risks is to apply interest rates as collateral to face risks. With interest rates, risks that are predicted in the future can be overcome and compensated for.

The problem of inflation and the time value of money will be answered by this interest rate. However, one of the biggest criticisms of this interest system is that interest rates are only based on adverse assumptions. In every business and investment, not only losses will be faced but also a few advantages. Meanwhile, the basis for determining the interest rate, only the loss factor is considered to determine the size of the amount of compensation to be determined. In straightforward language it can be said that in the economy, the loss factor is something that must be eliminated in economic calculations. This is based on the principle of rationality that every individual is rational and does not want to take risks.

Thus, it can be said straightforwardly that in the conventional economy, uncertainty is recognized as existing in every business activity. However, this uncertainty must be removed by turning it into something certain through the institution of interest, even at the expense of one of the parties.

Then the view of Islam in dealing with the time value of money based on the letter *al-Asr* is the same quantity, but the time value is different from one person to another. The difference from the time is depending on how one uses the time. The more effective and efficient, the higher the time value. Effective and efficient will bring profit in the world for those who implement it. The implication in the business world is that businesses will always face several risks, namely profit and loss. Profits and losses are uncertain for the foreseeable future. Business is basically a relationship between return and risk. Business is not a profitable activity without risks. This means that in a business the factors of loss and profit in running a business are something that cannot be ascertained up front. Uncertainty is something inherent in a business. Therefore, it would be unfair for uncertain situations to be changed to certainty (Muhammad, 2005).

Meanwhile, in the (conventional) economy, there are two reasons that have been raised for the concept of time value of money as an attempt to deal with uncertainties. One of them is the presence of inflation, or a decrease in the purchasing power of money or decreasing purchasing power of money. Based on this theory, it is logical if the interest rate is determined to compensate for the purchasing power of money while it is borrowed (Antonio, 2001; Orhan, 2020).

In this case, Islam clearly refuses, because the conditions are incomplete. In every economy, there is always a state of inflation and a state of deflation. If the existence of inflation is the reason for the existence of time value of money, then deflation should also be the reason for the negative time value of money (Karim, 2007). Thus, so far only one condition has been accommodated by the theory of time value of money, namely inflation, while deflation has been ignored.

The reason regarding the uncertainty of return in business is converted into a certainty through a premium for uncertainty. In fact, in every investment there is always a probability to get a positive return, negative return and no return. This probability creates uncertainty. The probability of getting a negative return and no return that is exchanged for something certain is called a premium for uncertainty (Muhammad, 2005).

The basis for thinking like this is rejected by Islam, because getting results without paying attention to a risk and obtaining without paying any costs, and this is very contrary to the concept of uncertainty. This theory is also rejected by financial theory because in a business there is a relationship between risk and return, not return goes along with risk. Whereas investment is included in the controllable and controllable risk category. Therefore, hard efforts must be made to determine the desired results. If it is drawn in an economic context, then the profit is obtained after carrying out business activities. For those who do business effectively and efficiently, they will benefit.

If the interest rate instrument is prohibited in Islam, then what is the measure used to determine the predicted profit? In Islam the use of a kind of discount rate in determining the tough pay price *(bai 'almu`ajjal)* can be used for reasons (Muhammad, 2005):

Buying and selling and renting is a real sector that creates economic value added. The suspension of the seller's rights (payment money) who has carried out his obligations (delivering goods or services), so that he cannot carry out his obligations to other parties.

Likewise, the use of a discount rate can also be used in determining the profit-sharing ratio. The ratio will be multiplied by actual income (actual return) not by the expected return. Profit sharing transactions are different from buying and selling transactions or leasing transactions, because in profit sharing transactions the relationship is not between the seller and the buyer or between the lessees. In a profit-sharing transaction, there is a relationship between the investor and the one who produces the capital. So, no party has carried out their obligations, but their rights are still withheld. *Sohibul mal* has carried out its obligation, namely providing a certain amount of capital, which produces capital (*mudorib*) and has also carried out its obligation, namely producing said capital. The right for *sohibul mal* and *mudarib* is to share the results of the income or profits according to the initial agreement whether the profit sharing will be made on income or profit.

Islam greatly encourages investment activities. In investing, Islam does not demand definite results to come. Future returns on investment are strongly influenced by many factors, both predictable factors and unpredictable factors. The factors that can be predicted or calculated in advance are how much capital, how much is the agreed ratio, how many times the capital can be rotated. Meanwhile, the effect that cannot be calculated with certainty or in accordance with the events is the business gain (return).

Based on the foregoing, the investment mechanism according to Islam, the acquisition of time value formulated in the form of interest is unacceptable but can be replaced on a profit-sharing basis. In a profit-sharing economy, the economic mechanism used is the ratio of profit sharing and business returns that occur in real terms. This is the meaning of economic value of time, that the time has value, not money has value time.

Conclusion

Uncertainty or risk is not something that is forbidden in Islam. Rather, the superiority of Islamic economics lies in acknowledging this uncertainty. It is very useful as a stimulant and motivation to "engineer" an investment to bring a return. Only uncertainty that can stimulate and stimulate productive efforts is permitted in Islam. On the other hand, it is this unpredictable uncertainty about the risk is prohibited.

This is because there is a major difference between investing and gambling, the difference is the belief in success. An entrepreneur starts a project because he is rationally confident that it will be successful. A gambler knows in advance that he is more likely to lose than to win. Actions that lead to failure more often than success cannot be considered the cause of success. It is the cause of failure.

References

Afdawaiza, A. (2011). Uncertainty (Ketidakpastian) dan Antisipasinya Dalam Perspektif Keuangan Islam. *Asy-Syir'ah: Jurnal Ilmu Syari'ah dan Hukum 45, no. 2*.

Al-Suwailem, S. (2002). Decision-making under uncertainty: an Islamic perspective. In *Islamic Banking and Finance: New Perspectives on Profit-Sharing and Risk* (pp. 15-30). Edward Elgar Publishing.

Antonio, M. S. (2001). *Bank Syariah: dari teori ke praktik.* Gema Insani.

Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring Economic Policy Uncertainty. *The Quarterly Journal of Economics, Volume 131, Issue 4*, Pages 1593–1636, https://doi.org/10.1093/qje/qjw024.

Bouslama, G., & Lahrichi, Y. (2017). Uncertainty and risk management from Islamic perspective. *Research in International Business and Finance 39*, 718-726.

Deng, Y. (2020). Uncertainty measure in evidence theory. *Science China Information Sciences, 63(11)*, 1-19.

Denœux, T., Dubois, D., & Prade, H. (2020). Representations of Uncertainty in AI: Beyond Probability and Possibility. In *A Guided Tour of Artificial Intelligence Research* (pp. 119-150). Cham: Springer.

Elfakhani, S., & Sidani, Y. M. (2015). Uncertainty or 'gharar'in contracts under the Islamic ethical code. In *Handbook of research on Islamic business ethics.* Edward Elgar Publishing.

Erbaş, S. N., & Mirakhor, A. (2013). The Foundational Market Principles of Islam, Knightian Uncertainty, and Economic Justice. *Economic development and Islamic finance*, 93.

Finkelstein, A., & Poterba, J. (2014). Testing for asymmetric information using "unused observables" in insurance markets: Evidence from the UK annuity market. *Journal of Risk and Insurance 81, no. 4*, 709-734.

Fontaine, R. (2008). Islamic moral responsibility in decision making. *International Journal of Economics, Management and Accounting, 16*(2).

Fontana, G., & Gerrard, B. (2004). A Post Keynesian theory of decision making under uncertainty. *Journal of Economic Psychology 25, no. 5*, 619-637.

Grant, S., Rich, P., & Stecher, J. (2020). Objective and subjective rationality and decisions with the best and worst case in mind. *Theory and Decision*, 1-12.

Hassan, M. K., Paltrinieri, A., Dreassi, A., Khan, A., & Bahoo, S. (2020). A bibliometric review of takaful literature. *International Review of Economics & Finance*.

Ifcher, J., & Zarghamee, H. (2020). Behavioral economic phenomena in decision-making for others. *Journal of Economic Psychology, 77, 102180*.

Jindra, J., & Moeller, T. (2020). Time since targets' initial public offerings, asymmetric information, uncertainty, and acquisition pricing. *Journal of Banking & Finance 118: 105896*.

Karim, A. S. (2007). *Bank Islam, Analisis Fiqih dan Keuangan* .Jakarta: Rajawali Press.

Lahuri, S. B. (2012). Teori Uncertainty (Ketidakpastian) dalam keuangan Islam. *Islamic Economics Journal 1, no. 1*, 31-48.

Muhammad. (2005). *Manajemen Perbankan Syari'ah.* Yogyakarta: UPP AMP YKPN.

Nordin, N., Aziz, S. A., Ahmad, A. A., & Daud, N. (2014). Contracting with Gharar (uncertainty) in forward contract: what does Islam says? *Asian Social Science 10, no. 15*, 37.

Orhan, Z. H. (2020). Money from the viewpoint of Islam, history of Islam and Islamic economics. *Islamic Monetary Economics: Finance and Banking in Contemporary Muslim Economies*.

Othman, A., Alhabshi, S., & Haron, R. (2019). The effect of symmetric and asymmetric information on volatility structure of crypto-currency markets: A case study of bitcoin currency. *Journal of Financial Economic Policy, Vol. 11 No. 3*, 432-45.

Sanchez-Rodrigues, V., Potter, A., & Naim, M. (2010). Evaluating the causes of uncertainty in logistics operations. *The International Journal of Logistics Management, Vol. 21 No. 1, https://doi.org/10.1108/09574091011042179*, 45-64.

Ullah, A., Arshad, M., Kächele, H., Zeb, A., Mahmood, N., & Müller, K. (2020). Socio-economic analysis of farmers facing asymmetric information in inputs markets: evidence from the rainfed zone of Pakistan. *Technology in Society 63: 101*.

Waemustafa, W., & Sukri, S. (2016). Theory of Gharar and its interpretation of risk and uncertainty from the perspectives of authentic hadith and the Holy Quran: Review of literatures. *Journal of Islamic Economics, Banking and Finance, 113(5741)*, 1-17.