CHAPTER I
INTRODUCTION

A. Research Background

At the end of the 19th century, the dominant economic system was mercantilism, which was used as the international trading system. This system was widely adopted by European countries at the time. Mercantilism held that a country's well-being was determined by the amount of assets it owned and the amount of trade it undertook. Therefore, countries that implement this system strive to maximize exports and minimize imports. However, the mercantilism system experienced significant challenges in the post-World War I period. The outbreak of the war led to the collapse of international trade and disruption of the stability of the currency system. Countries of the time tended to keep their imported commodities and faced instability in the currency system during wartime. In response to these circumstances, the United States and the United Kingdom played an important role in organizing the Bretton Woods Conference in 1944 in Bretton Woods, New Hampshire. The conference aims to create a new order in a more stable and orderly global financial system. One of the major achievements of the conference was the establishment of the International Monetary Fund (IMF), a world financial institution aimed at promoting monetary stability, international economic cooperation, as well as assisting its member countries in overcoming financial difficulties.

Through the establishment of the IMF, member countries are expected to obtain financial support in the face of economic and financial crises, as well as strengthen international cooperation in terms of monetary policy. The IMF also serves as a forum for its member countries to discuss global economic issues and cooperate in formulating policies that benefit all parties. Since its formation, the IMF has played an important role in maintaining global financial stability and helping its member countries overcome economic challenges. Through its financial assistance programs, the IMF provides loans and policy advice to countries experiencing financial difficulties or facing crises. In addition, the IMF also supervises and evaluates the economic policies of member countries to ensure conformity with the principles of monetary stability and sustainable growth. Overall, the Bretton Woods Conference and the establishment of the IMF have provided a strong foundation for global financial cooperation and economic stability at the international level. Although the trading system and economic policies have changed since then, the influence of this conference and the role of the IMF still impacts today in efforts to maintain stability and prosperity. One of the ways that the IMF achieved its mission was by creating Special Drawings Rights (SDRs) in 1969 as international foreign exchange reserves to supplement official reserves and provide liquidity to member countries during the global financial crisis. Initially the value of SDRs was equivalent to 0.888671-grams of pure gold which at the time was equivalent to one U.S. dollar. But after the collapse of the Bretton Woods system in 1976, the SDR was redefined as a basket of currencies.

Currencies included in SDRs must meet two criteria: export criteria and freely usable criteria. Currencies that meet export criteria are among the world's top five exporters, and also the issuer is a member of the IMF or a monetary union that includes members of the IMF. The second criterion is defined by the IMF, the currency must be able to make payments for international transactions widely and be widely traded on major exchange markets. Initially, in 1974 the SDR consisted of 16 currencies, until 1981 it was reduced to 5 currencies consisting of the U.S. Dollar, Deutsche mark, French Franc, British Pound, and Japanese Yen. In 1999, the French (Franc) and German (Deutsche Mark) currencies were replaced with the Euro. Until finally in October 2016, the IMF board decided to add the Chinese renminbi as one of the currencies in the SDR along with the U.S. Dollar, Euro, Japanese Yen, and Pound sterling. SDRs are also used to transact between its members as well as with the IMF.

TABLE 1. 1.
SDR Currency Types 2022

Currency Basket of SDR	Symbols	Year of creation	Officially included into SDR	Weight in SDR Basket (%)
U.S. Dollar	$	1792	July 1974	43.38
Euro	€	1999	January 1999	29.31
Chinese Yuan (Renminbi)	¥	1948	October 2016	12.28
Japanese Yen	¥	1871	July 1974	7.59
Pounds sterling	£		July 1974	7.44

Source: Author Research, IMF

The table 1.1 shows the composition of the "Currency Basket" of Special Drawing Rights (SDRs). SDR is a reserve asset used by the International Monetary Fund (IMF) as an accounting unit and financial instrument. The components in this currency basket reflect the most important currencies in international trade.

First of all, the United States Dollar (USD) is the largest component in the SDR currency basket, with a weighting of 43.38%. The US dollar has been the dominant currency in international trade for decades and continues to be widely used in global financial markets. Furthermore, the Euro (EUR) is the second currency in the SDR basket, with a weighting of 29.31%. The euro is the currency used by a number of European Union member states and is also one of the major currencies in international trade. In addition, the Chinese Yuan (Renminbi) (CNY) also became an important component in the SDR after its official inclusion in October 2016. The weight of Renminbi in the SDR basket reached 12.28%. In recent years, China has experienced significant economic growth and become a major actor in global trade. Furthermore, the Japanese Yen (JPY) is the next component in the SDR with a weighting of 7.59%. JPY has long been used as one of the major currencies in trading in the Asian region and is a stable and internationally accepted currency. Finally, the Pound sterling (GBP) is the last currency in the SDR basket with a weighting of 7.44%. The pound sterling is the currency used in the United Kingdom and has played an important role in global financial history.

Overall, the SDR currency basket reflects the importance of these currencies in the global financial system. The composition of this basket of currencies is decided by the IMF based on the importance of those currencies in international trade and the economic stability of each country. Changes in the composition of this basket of currencies can reflect shifts in global economic power and changes in international trade patterns.

Currencies incorporated in SDRs provide advantages compared to currencies that are not included. According to Harrison & Xiao (2019), the increasingly widespread use of SDRs, as the IMF intended that SDRs are "major reserve assets in the international financial system", but also as a complete currency for use by governments, institutions, companies and individuals, will be beneficial in reducing dollar-related imbalances. Therefore, trading with other countries can use their currencies directly, attract investor interest and increase foreign exchange reserves, expand the circulation of the country's currency, and economic stability (Muafi, 2019).

In the global financial system, foreign exchange reserves around the world have experienced significant development over the past two decades (Bayram et al., 2018). This development especially occurred after the Asian financial crisis of the late 1990s, which caused emerging markets to begin accumulating massive currency reserves to prepare for potential future shocks. In response to the Asian financial crisis, developing countries began to realize the importance of having sufficient foreign exchange reserves to cope with possible economic instability and shocks. These foreign exchange reserves aim to provide protection and stability for the country's currency, reduce the risk of trade imbalances, and maintain the health of the financial sector.

After the Asian financial crisis, many developing countries sought to increase their foreign exchange reserves through various means. Some countries increase their exports to earn greater foreign exchange income. These countries also encourage foreign capital inflows and foreign direct investment in order to obtain larger foreign exchange reserves. In addition, in recent years, developing countries have also begun to strengthen their policies and financial instruments to acquire larger foreign exchange reserves. They diversify their reserve currency by allocating a portion of their foreign exchange reserves to currencies other than the United States dollar, such as the euro, Chinese yuan, or Japanese yen. This diversification aims to reduce the risk of dependence on a single currency and increase flexibility in managing foreign exchange reserves.

These developments show that developing countries are increasingly realizing the importance of having adequate foreign exchange reserves in the face of global economic uncertainty. By having sufficient foreign exchange reserves, these countries can be better prepared for potential shocks and maintain their economic stability.

Taught in Islam, the role of foreign exchange reserves is intended for the welfare of the country through the benefit of its citizens. This is found in Q.S Adh-Dhariyat verse 19 which reads:

وَفِىٓ أَمْوَٰلِهِمْ حَقٌّ لِّلسَّآئِلِ وَٱلْمَحْرُومِ

Meaning: *"And in their wealth there is a 'fulfilled' share for beggars and the poor."*

Foreign exchange reserves have a very important role in the development of people's living levels and are considered a crucial indicator that describes the extent to which a country can engage in international trade, as well as being a benchmark for the fundamental strength or weakness of a country's economy (Hady, 2001 &; Mildyanti &; Triani, 2019). In the context of Indonesia, which currently has strong links with the global economy, foreign exchange reserves are the main key in avoiding a potentially devastating economic and financial crisis.

Foreign exchange reserves are a very important source of capital for the Indonesian state in maintaining economic stability and carrying out development policies. Capital derived from economic relations with other countries is often capital that is very vulnerable to shocks that can propagate from other countries (Asmanto & Suryandari, 2008). Therefore, having adequate foreign exchange reserves gives the country the ability to respond better to changes in global economic conditions that may occur.

Over the past two decades, Indonesia has faced several global financial crises that have had a significant impact on the country's economy. In 2008, the country was exposed to the global financial crisis triggered by the collapse of Lehman Brothers in the United States, which later expanded worldwide. Then, in 2020 to early 2023, Indonesia also experienced the serious impact of the health crisis caused by the COVID-19 pandemic, which caused severe shocks in the global economic sector.

The 2008 global financial crisis showed that the U.S. economy and financial system are vulnerable and unprotected in the face of economic shocks. The collapse of the Lehman brothers institution and the downgrade of US government bonds prompted investors to consider their investment allocation (Ganikhodjaev; Bayram, 2016). The global financial crisis in 2008 caused impacts in Indonesia's macroeconomic sectors such as international trade (exports), rising borrowing costs, and the decline in the Jakarta Composite Index (JCI) on the Indonesia Stock Exchange (IDX) (Hamid, 2009). The recent crisis, namely the health crisis caused by the corona virus or COVID-19, is a health issue that causes shocks to the economy (Spatt, 2020). The pandemic has had an impact on the Indonesian economy, as seen from data from the Central Statistics Agency (BPS) economic growth in the second quarter of 2020 which reached -5.32% after the first time Covid-19 infected Indonesia. In both crises, short-term interest rates fell to near zero, and in the Covid-19 crisis, there was a more serious consideration of negative interest rates. Negative interest rates have played a much larger role in the global environment in recent years, both nominally and especially in real terms (Spatt, 2020). Indonesia, which adheres to a free foreign exchange system and a floating exchange rate system, makes the market vulnerable to excessive exchange rate fluctuations.

In the face of these crises, foreign exchange reserves have played a crucial role in helping Indonesia maintain economic stability and overcome emerging challenges. Adequate foreign exchange reserves give the country access to the foreign currency needed to service foreign debt, manage the balance of payments deficit, maintain exchange rate stability, and carry out the economic policies necessary to restore economic growth. Thus, the importance of foreign exchange reserves for Indonesia is becoming increasingly clear as a means to reduce risks in the face of global economic shocks. The country must continue to manage and strengthen foreign exchange reserves as part of a solid economic strategy, so as to maintain national economic stability and improve the quality of life of the people in a sustainable manner.

Several studies have revealed the advantages of gold as a "safe haven" in the face of global crisis shocks in the context of foreign exchange reserves (Bayram et al., 2018; Baur &; Lucey, 2010; Fernando, 2017; Mohapatra et al., 2021; Arslanalp et al., 2023). Gold is considered to be relatively stable and secure in value, making it an attractive option for building a more balanced portfolio in the face of global economic and financial uncertainty.

In crisis situations, when traditional financial markets such as stocks or bonds experience high volatility, investors often turn to assets that are considered safer, and gold is often the top choice. Gold has long been recognized as a store of value that can protect the value of wealth from inflation and currency fluctuations. This is because gold has universal properties and is widely accepted as an alternative form of payment.

The main advantage of gold as a "safe haven" is the stability of its relative value. Although the price of gold can also fluctuate, its movements tend to be more stable compared to some other assets. In addition, gold also has a tendency to have a negative correlation with other assets such as stocks. This means that when the value of other assets falls, the price of gold tends to rise or remain stable, which can provide a hedge for investors.

In the context of foreign exchange reserves, including gold in a portfolio can help countries build a more balanced portfolio and reduce risks to global crisis shocks. Gold reserves can provide additional security to the value of state assets in situations of global economic uncertainty, as well as provide flexibility in the management of foreign exchange reserve portfolios.

In the Qur'an Surah At-Tawbah verse 34:

يَـٰٓأَيُّهَا ٱلَّذِينَ ءَامَنُوٓا۟ إِنَّ كَثِيرًا مِّنَ ٱلْأَحْبَارِ وَٱلرُّهْبَانِ لَيَأْكُلُونَ أَمْوَٰلَ
ٱلنَّاسِ بِٱلْبَـٰطِلِ وَيَصُدُّونَ عَن سَبِيلِ ٱللَّهِ ۗ وَٱلَّذِينَ يَكْنِزُونَ ٱلذَّهَبَ وَٱلْفِضَّةَ
وَلَا يُنفِقُونَهَا فِى سَبِيلِ ٱللَّهِ فَبَشِّرْهُم بِعَذَابٍ أَلِيمٍ

Means:

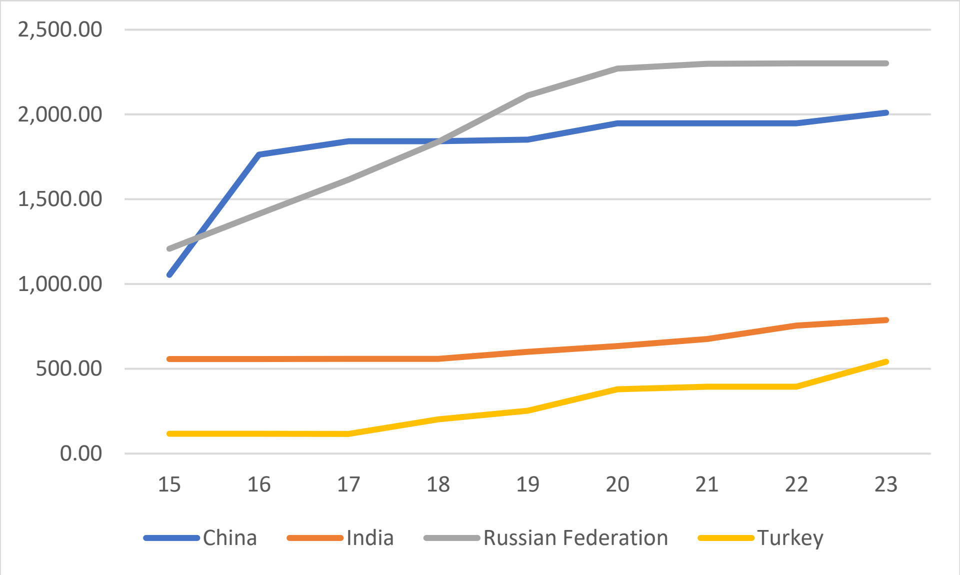
O believers! Indeed, many rabbis and monks consume people's wealth wrongfully and hinder 'others' from the Way of Allah. Give good news of a painful torment to those who hoard gold and silver and do not spend it in Allah's cause.

From the letter above explained, gold and silver are not only as units of currency, but also as a means of payment and storage of value.

Bank Indonesia, as the state institution responsible for monetary policy and financial stability, has an important contribution to the national economy. One of Bank Indonesia's main objectives is to achieve and maintain stability in the value of the rupiah, which is the official currency of Indonesia. In carrying out its duties, the central bank plays a crucial role in managing the country's foreign exchange reserves. In a financial environment that is often unstable and prone to uncertainty, Bank Indonesia's task as a manager in managing Indonesia's foreign exchange reserves is becoming increasingly important. One of the most important aspects to focus on in the bank's work is investing in relatively safe assets (WGC, 2016). Bank Indonesia also implements the principle of investment diversification, which refers to the distribution of assets into various financial instruments. This diversification aims to reduce the risk of dependence on one particular type of asset or currency.

In this case, the central bank makes investments in government securities, money market instruments, deposits in international banks, and also involves the ownership of gold assets as part of the portfolio of foreign exchange reserves.

Indonesia needs to increase gold commodities as one of the foreign exchange reserves because gold is one type of asset that is internationally recognized as a means of payment that can be accepted throughout the world. According to Yousaf et al., (2021) explained that gold is a safe-haven commodity for Indonesia and is able to offer protection for portfolio managers against losses in Asian stock markets during the Covid-19 outbreak. Gold's ability as the traditional foundation of monetary systems during crises has been effective because it is undervalued in correlation with overall financial assets in general, making it highly effective in diversifying portfolios and reducing inherent risk and volatility. The World Global Council (March 2023) noted that Indonesia has 78.6 tons or only 3.6% of gold in foreign exchange reserves, while developed countries such as the United States and several countries in Europe have gold deposits of at least more than 60% in their foreign exchange reserves. Some states such as China, Russia, India and Türkiye began to increase their gold reserves in response to the state of the economy that was vulnerable to the global crisis. The increase in gold deposits is consistent with the need to diversify the country's foreign exchange reserves and prepare for global turbulence.



Source: Author Calculation, WGC

FIGURE 1. 1.

Gold Reserves Holdings in China, India, Russia, dan Turkey 2015-2023.

However, it is also important to note that the decision to allocate foreign exchange reserves into gold should be based on a careful evaluation of market conditions, monetary policy, as well as the country's long-term goals and risk tolerance. Gold's advantages as a "safe haven" should be considered along with other factors that affect portfolio diversification and overall risk management.

In the context of allocation of foreign exchange reserves, the Black-Litterman model can assist central banks in identifying optimal allocations between different currencies or financial instruments. By applying the Black-Litterman Model, central banks can combine their subjective estimates of the prospects of a particular currency or financial instrument with objective information from the market. This model allows central banks to estimate the expected value and volatility of different currencies or instruments, as well as consider the correlation relationship between them.

Using the Black-Litterman Model analysis, central banks can consider various factors such as interest rates, economic conditions, political factors, and systemic risks associated with existing currencies or financial instruments (Sutrischastini, 2012). This model also helps in minimizing risks and increasing the efficiency of foreign exchange reserve allocation (Idzorek, 2007). The results of the Black-Litterman Model analysis can provide more detailed and measurable guidance for central banks in making decisions on the allocation of foreign exchange reserves (Bayram et al., 2018). Central banks can use this model to identify currencies or financial instruments that have better prospects or that have low correlation relationships with other assets in the portfolio.

Previous research conducted by Bayram et al., (2018) discussed the identification of the value of gold assets in the foreign exchange reserves of Malaysia, Turkey, the Kingdom of Saudi Arabia, and Pakistan in the data period from 2005 to 2014. However, in this study, there are differences in the period of data used, namely from 2016 to 2022, and the country studied is Indonesia. In this study, researchers used the Black-Litterman Model as an approach in making investment decisions. The Black-Litterman model is a method that combines market views with investor expectations to help generate better asset allocation. By adopting this approach, researchers aim to identify the optimal level of gold foreign exchange reserves as a reserve asset in Indonesia.

In this study, a comprehensive analysis of global financial market conditions was conducted, including gold asset price movements. Then, using the Black-Litterman Model, market views and investor expectations will be integrated to produce an optimal allocation of gold assets in Indonesia's foreign exchange reserves. This study has significant relevance in the context of Indonesia's foreign exchange reserve management, as it allows to identify the optimal level of gold assets that should be adopted in the country's foreign exchange reserves. Thus, the results of this study can provide valuable insights and recommendations for Bank Indonesia as a manager of foreign exchange reserves, as well as for national economic policies related to the management of foreign exchange reserve assets.

Based on the description above, the researcher intends to conduct a study entitled "**Identify the Optimal Level of Gold Foreign Exchange Reserves as A Reserve Asset Using the Black-Litterman Model: A Case Study in Indonesia**"

B. Limitations of Research Problems

The limitation of the research problem is carried out to explain what the scope of the research is to be focused and detailed. The limitations of the research problem consist of:

1. Case study conducted in Indonesia.
2. The research data period is January 2016 – December 2022
3. The object of this research is Indonesia's foreign exchange reserves.
4. Research method model using Black-Litterman Model
5. The independent variable consists of the value of the 10-year bond index of the United States, Germany, China, Japan, and the United Kingdom and the value of the gold commodity, while the dependent variable is Indonesia's foreign exchange reserves.

6. The research aims to identify the optimal level of gold in Indonesia's foreign exchange reserves consisting of various foreign currencies and gold commodities.

C. Research Question

Based on the description in the background above, the researcher applies the problem formulation to the research as a guide in compiling this research. The formulation of the research problem consists of:

1. How to estimate the stages in determining the optimal value of gold in Indonesia's foreign exchange reserves?
2. How the optimal composition of gold foreign exchange reserves in Indonesia by using the Black-Litterman model?

D. Research Objectives

The objectives of this study consist of:

1. To estimate the stages in determining the optimal value of gold in foreign exchange reserves in Indonesia.
2. To determine the value of gold composition in foreign exchange reserves in Indonesia by using the Black-Litterman model.

E. Research Benefits

The results of the study are expected to provide research benefits consisting of:

1. Theoretical Benefits
    a. The results of the study are expected to provide information in the form of optimal levels of gold foreign exchange reserves in Indonesia.

b. The results of the study are expected to provide information in the form of analyzing the optimal level of gold foreign exchange reserves in Indonesia.

c. The results of the study are expected to be a reference for further research.

2. Practitioner Benefits

a. For Researcher

The research results are used to fulfill the final thesis project and meet the requirements to obtain a bachelor's degree in economics, in the International Program for Islamic Economic and Finance study program, University of Muhammadiyah Yogyakarta (IPIEF UMY).

b. For Universitas Muhammadiyah Yogyakarta

The results of the research are expected to add reading references and information, so that in the future increase knowledge about the optimal level of foreign exchange reserves in Indonesia.

c. The results of the research are expected to be information and evaluation material for the government in regulating foreign exchange reserves in the future.