CAN GOLD HEDGE AGAINST INFLATION? AN EMPIRICAL ANALYSIS IN MALAYSIA

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**FACULTY OF BUSINESS AND ECONOMICS
UNIVERSITI MALAYSIA SABAH
2014**

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THESIS SUBMITTED IN FULLFILLMENT FOR THE DEGREE OF MASTER OF ECONOMICS

FACULTY OF BUSINESS AND ECONOMICS
UNIVERSITI MALAYSIA SABAH
2014

UNIVERSITI MALAYSIA SABAH

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IJAZAH: **MASTER OF ECONOMICS**

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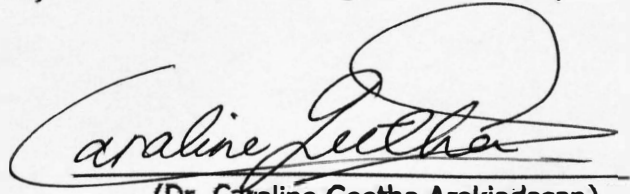
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I hereby declare that the work in this thesis is my own except for the quotations, equations and summaries, which have been duly acknowledged.

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Izaan Azyan Bin Abdul Jamil
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                          EMPIRICAL ANALYSIS IN MALAYSIA
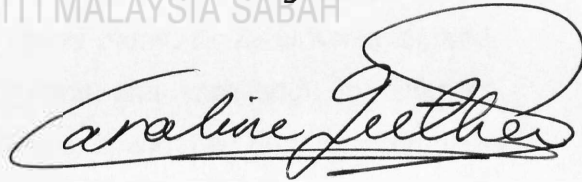
DEGREE   :   **MASTER OF ECONOMICS**

VIVA DATE   :   **24 MARCH 2014**

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ACKNOWLEDGEMENT

ABSTRACT

The purpose of this study is to examine the role of gold price to hedge against inflation in Malaysia. Previous studies stated that gold price can maintain its purchasing power and able to hedge against inflation. Malaysian database from 1967 to 2011 was used where gold price, consumer price index, real interest rate, real income, and real exchange rate as variables in this research. The main finding in this study indicates that gold price has a relationship with domestic inflation in the short and long run. Other than that, gold price quoted in Ringgit also able to hedge against inflation in the long run. Thus, the main finding in this study could benefit both Malaysian Monetary and Investment Authority in hedging Inflation.

ABSTRAK

Bolehkah Emas Digunakan Untuk Melindungi Nilai Terhadap Inflasi?
Satu Kajian Empirikal Di Malaysia

Tujuan kajian ini adalah untuk mengkaji peranan emas untuk melindungi nilai terhadap inflasi di Malaysia. Kajian terdahulu menyatakan harga emas dapat mengekalkan kuasa beli dan dapat melindungi nilai terhadap inflasi. Data-data Malaysia dari tahun 1967 kepada 2011 digunakan dimana harga emas, index harga pengguna, kadar faedah sebenar, pendapatan benar, dan kadar pertukaran sebenar sebagai pembolehubah. Penemuan utama di dalam kajian ini menunjukkan bahawa harga emas mempunyai hubungan dengan inflasi di Malaysia, dalam hubungan jangka pendek dan jangka panjang. Selain itu, harga emas di Malaysia juga dapat melindungi nilai terhadap inflasi dalam jangka masa panjang. Oleh itu, hasil kajian ini boleh memberi manfaat kepada pihak Monetari dan pelabur dalam melindungi nilai terhadap inflasi.

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1.1 Background of Study

Among all the precious metal, Gold has been used as money and has been a relative standard for currency equivalent. United States and many European countries implemented gold standard in the end of 19th century until it was suspended due to the financial crisis involving World War I. After World War II, The Bretton Wood System pegged US Dollar to $35 per troy ounce. The system exists until 1971 Nixon Shock. The system was temporarily suspended and direct convertibility of US Dollar to gold took place. This was because when dollar was fully convertible to gold according to Gold Standard, dollar and gold was considered as money. But people preferred paper bank notes because they were less heavy and were able to be divided into smaller amounts, thus people started printing more notes and hoard gold. The hoarding process created a collapse in the financial system.
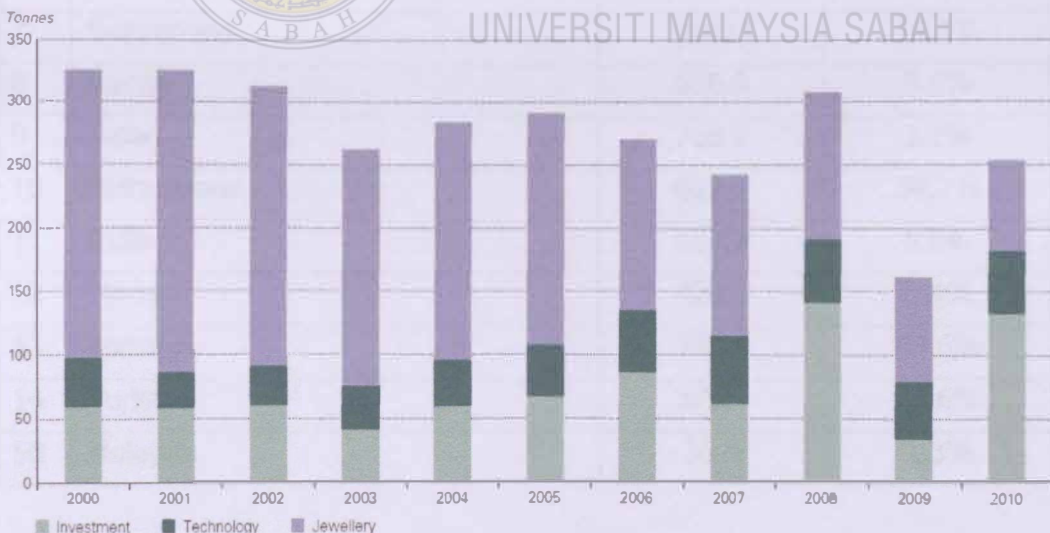
Figure 1.1: International Gold Demand

Source   : World Gold Council Statistic.

Since the break down of gold standard, people were no longer interested in gold as an investment tool and they just used it as a symbol of wealth. Gold was only used as a symbol of wealth such as bullions and jewellery. According to World Gold Council report, 60 percent of today's gold becomes jewellery. Figure 1.1.1 shows people demand more on gold as jewellery from year 2000 until 2007. But it slowly decreases starts from 2007. It was because of 2007/2009 Financial Crisis where volume of gold jewellery sales declined. However, Asian countries especially China and India experienced massive economic growth started to demand more on gold. Other than that, Central banks in every country start to control their supply of gold and increase their demand of gold as gold reserves.

Table 1.1: Gold Reserves

No	Country	Tonnes	% of reserves
1	United States	8133.5	75.1%
2	Germany	3391.3	72.1%
3	International Monetary Fund	2814.0	-
4	Italy	2451.8	71.3%
5	France	2435.4	69.5%
6	China	1054.1	1.6%
7	Switzerland	1040.1	10.0%
8	Russia	976.9	9.5%
9	Japan	765.2	3.1%
10	Netherlands	612.5	58.7%
11	India	557.7	9.6%
12	Taiwan	423.6	5.4%
13	Portugal	382.5	89.6%
14	Turkey	375.7	15.6%
50	Malaysia	36.4	1.3%

Source : International Financial Statistic (April 2013)

Table 1.1 shows the amount of gold in each country and apart from it was capped as official gold reserves by the central banks. Central Bank and

International Monetary Fund played an important role in setting the price of gold via transmission of monetary policy. This was because interest rate was closely related to the price of gold. When interest rate increased, demand for bond will also increase and the demand for other financial asset decreased. Excess supply of other financial assets also decreased the demand for gold thus reducing the price of gold. Aggregate demand decreased with gold price that negative created and close relation to interest rate. Central Bank believed that interest rate can influence the price of gold which can eventually control inflation. Other than that, Central Banks also reserved gold to hedge against inflation, deflation, currency devaluation or economic crisis.

At every crisis, investors tend to find tools of investment to hedge their financial losses, and people started to find an alternative like investing on commodities like gold. Wang, Wei, and Wu (2010) claimed that gold become an interesting commodity to be invested especially after 2001 because the trends in gold price keep increasing and people began to diversify their portfolio investment. Gold was no longer seen as jewellery. People started to realize the importance of gold in economy, financial sectors, even in daily life. Besides, people started to invest in gold by including gold in their investment portfolio. Besides, investment in gold were easily accomplished by buying physical gold, gold jewellery, coins, bullion, futures and option contract on gold bullion, stock of gold companies, and gold mutual funds.
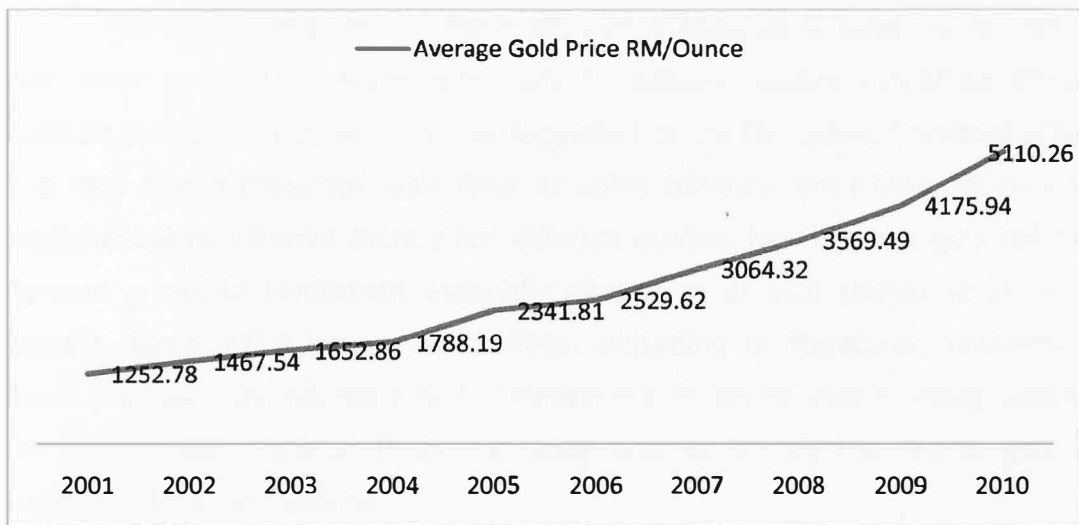
Figure 1.2:   Price of Gold (RM)

Source   :   Bank Negara Malaysia

Based on Figure 1.2, over ten years, gold price showed an increasing trend and people began to realize opportunities to gain something by investing in gold. Stable price made gold an interesting tool to be invested. Other than that, investors can keep their purchasing power because gold always performed better during crisis. O'Connell (2003) claimed that gold showed a positive trend during major crises like Long Term Capital Management in 1998, "dot.com bubble" in 2000, "9-11" terrorist attacks in 2001, and credit crunch in 2007. Bhatia and Dempster (2011) added that gold enjoyed flight-to-quality inflows while other supreme assets were dried up. They preferred investors to diversify their investment, where gold should be included in their portfolio.

Gold is also widely accepted. People who purchase gold in Malaysia can sell it in other countries because gold has no nationality compared to money. India and China, two giant economy of Asia started importing gold in higher volume. O'Connell (2003) claimed India has the highest demand for gold where China comes second and researchers also found that gold is a second preferred account after bank deposits in India. Other than that, people in India and China preferred to store their money in gold compared to others because they believe gold is a safe haven for investment.

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Tun Dr Mahathir, former Prime Minister of Malaysia showed his interest in gold dinar during his administration and he believes money cannot be traded because it was not a commodity. He suggested to the Oil Islamic Countries (OIC) that they should implement gold dinar as union currency. But it was not easy to implement since different country had different policies. Nevertheless, gold still can become a tool of investment especially after price of gold started to increase fiercely, about 441.8 percent since 2001. According to literatures, researchers found that gold was not just a tool of investment. It can be used to hedge against the rising price of goods. Thus, this study aims to identify the role of gold in hedging inflation in Malaysia.

1.2   Problem Statement

Generally, inflation is one of the economy problems where the general level of price of goods and services increases. When the general level of price increases, it caused a reduction of purchasing power. Other than that, it also reflected the real value of assets. In Malaysia, average rate of inflation is around 3.9 percent since 1970s but Malaysia had experienced with high inflation.
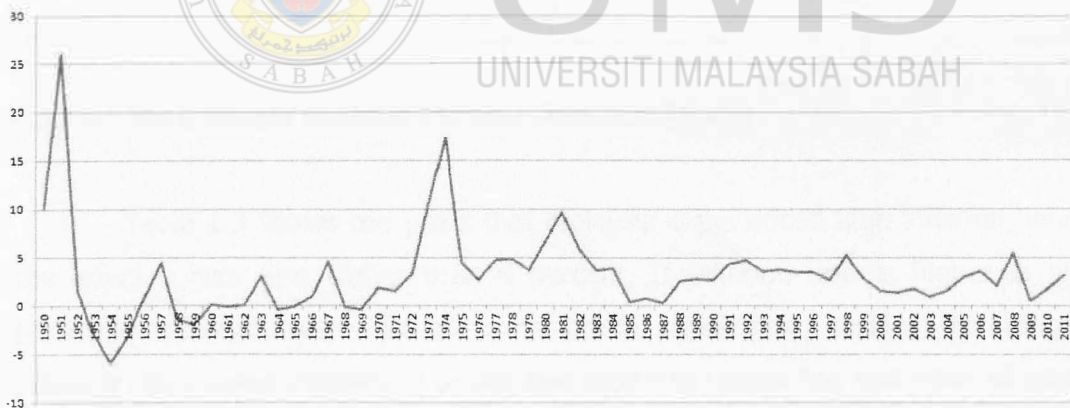
Figure 1.3:   Inflation rate in Malaysia

Figure 1.3 shows the movement of inflation rate from 1950 to 2011. Generally, the movement of inflation rate in Malaysia is not stable. It was because Malaysia practiced an open economy and exposed to the global economy. In early 1950s, newly independent Malaysia started to develop every sector to boost up the

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economy. Meanwhile in 1970s and 1980s, turbulence in Arab countries caused an oil price to rise drastically. Other than that, Malaysia also experienced high inflation during global economic crisis such as The Asian Financial Crisis in 1998 and Credit Crisis in 2008. Malaysia practiced an open economic policy exposed to the global crisis and the effects of high inflation.

Table 1.2: Inflation Rate of Malaysia (Higher than 4 percent)

Years	Inflation Rate (%)
1951	25.92%
1973	10.56%
1974	17.33%
1980	6.67%
1981	9.70%
1982	5.8%
1998	5.27%
2008	5.44%

Source : Bank Negara Malaysia Monthly Statistical Report

Table 1.3 shows the years that Malaysia experienced high inflation, when the inflation rate was higher than 4 percent. If inflation rate is higher in one particular country, investor will not invest due to higher cost. Besides, the rising of inflation rate caused purchasing power decrease and reduce the real value of asset. During high inflation, investor will shift their investment portfolio to hedge against inflation and maintain their purchasing power. Fieldstein (1983) suggest investor to invest in real estate and gold because these assets can maintain its purchasing power during inflation. His study was supported by Ranson and Wainwright (2005) who conducted a study in Britain. They found out that gold price performed better and maintain its value during inflation because the price of gold fuel up about 25.4 percent annually during higher inflation.

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Normally investors will invest in stock market, bond, mutual fund, and others but they still face inflation problems. It's not worth to invest if the value of return is below inflation rates. Harmston (1998) claimed that gold maintained its purchasing power and was thus a vital safe haven. He also found that increase in general level of price tend to increases in gold price. His study was supported by Pulvermacher (2004) who conducted a study in United States. He claimed that other than hedging inflation, investing in gold also gave positive return to the investors.

Developed countries like United States, United Kingdom, Germany and Japan had experienced with high inflation. Previous studies conducted in these countries found out that gold can be used as a tool of investment to hedge against inflation. Since Malaysia also has an experienced with high inflation, monetary and investment authorities should find an alternative to hedge against inflation and gold is one of the solution. But in order to hedge against inflation with gold price, the relationship between global gold price and domestic inflation must be exist. Since every country has its own condition and characteristic, questions arise on does gold price has a relationship with inflation in Malaysia? Can gold hedge inflation in Malaysia? The main purpose of this study is to identify the relationship between gold price with inflation in Malaysia, and the role of gold price to hedge against inflation in Malaysia.

1.3   Research Questions

To address the problems statement, the following research questions should be answered:-

a) Is there any relationship between gold and inflation?
b) Can gold be used to hedge against inflation in Malaysia?

1.4   Research Objectives

The overall objective of this study is to determine whether gold can hedge against inflation. In order to find the role of gold price in hedging inflation, the relationship between these variables must be determine regardless of short run or long run.

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The research questions mentioned can be solved by addressing the following specific objective and the specific objectives of this study as follows:-

a) To determine whether the gold price has a relationship with inflation in the short run.
b) To determine whether the gold price has a relationship with inflation in the long run.
c) To determine whether the gold price can hedge against inflation in the short run.
d) To determine whether the gold price can hedge against inflation in the long run.

1.5 Scope of Study

In Malaysia, Sharif et al (2008) conducted a study using gold dinar and found out that gold dinar is suitable for hedging economic crisis especially the rising of inflation. However in this study, general gold price quoted in Ringgit was used as an interactive term similar to the previous study. With global price of gold quoted in Ringgit, the role of gold to hedge against domestic inflation will be determined. This study will uses a time series data obtained from World Bank online data, monthly bulletin of Bank Negara Malaysia, and International Financial Statistic. The yearly data obtained begins from 1967 to 2011. Gold price quoted in Ringgit will be a dependent variable while consumer price index, real interest rate, real income, and real exchange rate. Real variables were used to avoid multicoliniearity problems and according to Classical Dichotomy theory, real variables will not be affecting each others.

This study will only focus on the relationship between gold with inflation, and the ability of gold price quoted in Ringgit in hedging domestic inflation. Based on the previous studies, real interest rate, real income, and real exchange rate are controlled variables because it can influence the movement on gold price. However, this study will not exceed the boundary to explain the role of real interest rate, real income, and real exchange. Other than that, this study will not calculate special

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event happens during 1967 to 2011 although this study used macroeconomic variables.

1.6 Significance of Study

To add on the literature's body, this study analyses the role of gold in hedging inflation or increases the general level of price in Malaysia. Previous studies by Fieldstein (1983), Sherman (1986), Mahdavi and Zhou (1997), David et al (2000), Ghosh et al (2002), Worthington and Pahlavani (2006), Dempster and Artigas (2009), Narayan et al (2010), Pukthuanthong and Roll (2011), and Baur (2011) found out that gold can be used to hedge against inflation in United States, United Kingdom, Germany, and Japan.

This research will benefits student, current and future researcher who interest in this field of study. Thus, researchers in the field of investment, inflation, and exchange rate can acquire further understanding of the investment and the role of gold as a hedge against inflation and exchange rate fluctuation. In terms of theoretical contribution, no doubt many studies have been carried out by previous researchers to show the role of gold but many researchers in Malaysia only focus on gold dinar so this study will bring a new chapter for current and future researcher. This research tends to provide the clear guidance and reference to the policy maker about the role of gold in a framework and monetary policy.

From the perspective of an investor, the research on role of gold was significant due to its upward trend and positive performance especially during economic crises. Increases on gold price attracted researcher to study the role of gold in economic and financial sectors. The output of this study will present precise and accurate analysis so that the findings of this study will be able to contribute to the body of knowledge. Empirical results and findings will contributes to a better understanding about the role of gold since the purpose of academic research is to gain a new perspective in this field of study.

Besides, a determination the role of gold in hedging inflation would bring benefits to the investor. Monetary and investment authorities in Malaysia can revise

their investment portfolio whether to include gold since gold can maintain its value and purchasing power.

1.7   Structure of Study

The study comprises five chapters. Chapter one consists of background of study, problem statement, research objectives, scope of studies, significance of study, and the structure of the study. Chapter two explains the literature review while chapter three describes the methodology. Chapter four discuss the finding and finally chapter five concludes the findings and provides recommendation.

2.1   Introduction

This chapter discusses the previous studies on gold as a form of investment. Gold was found in natural condition and human started to invent in gold, to play many roles in our world especially in economic sectors. Gold is a precious commodity and has its own value. According to Naqvi (2004), gold has not changed and it is not a property of a particular country. Gold is widely used and accepted by the entire world. The collapse of Gold Standard in 1930s does not indicate the end of gold era. Gold has been transformed into jewellery and became a symbol of wealth. Other than that, gold was accepted universally as an exchange tools because of indestructibility, beauty, and rarity compared to others. People around the world believe that gold is a highly liquid metal and can be traded 24-hours a day. Gold is a powerful stuff because it can be converted into money. People who face shortage of money can convert their gold into money by selling it.

China and India, two giant of economy starts to import goods especially commodities, including gold and silver. Both countries start to realize the importance of it and how gold can strengthen their economy. During sub-prime crisis in 2008, too many complex products created by the banks to attract investors lead to high supply of money but less on its demand. All these investment opportunities evaporated and burst the bubble. Non performing loan increased which forced some of the big banks to close. Bhatia and Dempster (2011) did a study on assets correlation during crisis found out that gold performed better than real estate or property. International Monetary Fund (2001) claimed that 58 percent of the countries in the world are holding gold as part of their reserves. It makes gold to be one of the macroeconomic variables namely gold reserve, when every central banks starts keeping gold for a variety of use, particularly when it stores value. Since the collapsed of Gold Standard, people are not concern about gold but the lack of resources makes gold to play many roles, not just as gold