UNIVERSITI TEKNOLOGI MARA

THE RELATIONSHIP OF ECONOMIC VARIABLES AND GOLD PRICE IN MALAYSIA

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Bachelor of Business Administration (Hons)

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Final Year Project Paper submitted in fulfilment of

the requirements for the degree of Bachelor of Business Administration (Hons)

Investment Management

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AUTHOR'S DECLARATION

I declare that the work in this final year project paper was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Undergraduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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Thesis Title.	:	The Relationship of Economics Variables and Gold Price In Malaysia
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ABSTRACT

The purpose of this study is to examine the relationship between economic variables such as interest rates, exchange rates, inflation rates, and the price of crude palm oil in Malaysia and the price of gold. Secondary data from the Statista, previous research and World Development Index are used in this study as proxies for macroeconomic stability, such as the real interest rate, the exchange rate, and the inflation rate, among other variables. The researchers will evaluate the data from 1990 to 2020, which spans a period of thirty years and will employ the Least Square Method to do so (E-Views). The price of gold fluctuates up and down throughout time, much like the price of any other financial instruments or commodities. It is hard to refute that the gold price is stable and that it fluctuates only minimally in response to the volatility of the economic and financial conditions. In Malaysia, the public and investors have been more aware of the issue in recent years. After some time, they began to see the benefits of participating in the gold trading market. People will need to be aware of the current gold price to take advantage of opportunities to purchase gold at a reduced cost.

Keywords: Gold price (GP), Interest Rate (IR), Inflation Rate (INF), Exchange Rate (ER) and Crude Palm Oil Price (CPO)

ACKNOWLEDGEMENT

First and foremost, I would want to express my gratitude to Allah S.W.T for providing me with the inner strength to complete my final year project, which was extremely difficult during the COVID-19 pandemic. All praise and thanks to ALLAH S.W.T., the Almighty, for delivering upon me the blessing, strength, opportunity, and perseverance to complete this Final Year Project.

Besides, I'd like to express my heartfelt gratitude to Madam Aidarohani for their time, generous guidance, patience, and encouragement throughout the dissertation project, from which I learned a great deal about my project title.

Next, I am grateful for my parents' unwavering love and support, which keeps me inspired and confident. They helped me achieve my goals and success because they believed in me. My siblings, who keep me grounded, remind me of what matters in life, and are always supportive of my Final Year Project adventure, deserve my gratitude.

Finally, I want to express my gratitude to all of my friends who assisted me in collecting samples, analysing data, and providing advice, and they are all acknowledged for their contributions. Your encouragement and support meant more to me than words can say.

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LIST OF SYMBOLS

SYMBOLS	DEFINITIONS
GP	GOLD PRICE
INF	INFLATION RATE
IR	INTEREST RATE
ER	EXCHANGE RATE
CPO	CRUDE PALM OIL PRICE
RM	RINGGIT MALAYSIA

LIST OF ABBREVIATION ABBREVATIONS

ABBREVATIONS

MPOB	MALAYSIA PALM OIL BERHAD
MPOC	MALAYSIA PALM OIL COUNCIL

CHAPTER ONE

INTRODUCTION

1.1 INRODUCTION

According to the gold standard, any currency or paper money issued by a country has a value that is directly connected to the price of gold in that country. When governments agreed to use the gold standard, they agreed to exchange a fixed amount of paper money for a predetermined amount of gold. Countries that use the gold standard fix the price of gold and buy and sell the metal at that fixed rate. The value of the currency is determined by the fixed price that has been set in advance of time. The gold standard is a fixed monetary regime in which the value of the government's currency is fixed, and it is possible to change it into gold without restriction. The term can also refer to a free-competitive monetary system in which gold or bank receipts for gold serve as the primary medium of exchange or it can refer to an international trade standard in which some or all countries fix their exchange rates in accordance with the relative gold parity values between individual currencies.

The appeal of a gold standard is that it removes control over the issuance of money from the hands of flawed human beings. With the physical quantity of gold serving as a limit to the amount of money that may be issued, a community can follow a simple rule to prevent the ills of inflation. The cost of gold is essentially dictated by a blend of elements like market interest, economic situations, and money deterioration.

The essential monetary rule of market interest is a significant powerhouse of generally ware costs. At the point when gold interest is high and supplies of the valuable metal are low, gold price will raise. In the contrary situation of high stock and low interest, costs decline. Since gold is limited, supplies will forever be restricted. By certain investigators' action, the world arrived at top gold years prior, so creation levels will just keep on declining. Gold interest from financial backers, national banks, and the clinical and innovation areas, notwithstanding, stays solid.

Next factor is economic situations. Political and financial occasions shape economic situations, which thus impact gold price. As previous Federal Reserve Chairman Ben Bernanke said during the Great Recession, gold costs mirror a country's monetary wellbeing. During that time, gold costs took off, arriving at a record high of

$1,917.90 an ounce in August 2011. As of late, political and financial unrest in Europe has likewise fuelled the buying of place of refuge resources like gold and this is one of the elements why individuals decide to hold gold as their venture.

The other variable is cash devaluation. Cash devaluation happens when a country's money loses esteem corresponding to at least one unfamiliar monetary form. Expansion and financial strategy, like quantitative facilitating, are two reasons for money deterioration. Expansion is basically the diminishing in buying force of a money over the long haul. For instance, somewhere in the range of 2005 and 2015, the buying force of the dollar diminished by 20%. During this time, gold costs expanded by more than 169%. Since gold will in general keep up with or like it’s worth and cash is dependent upon critical misfortunes in buying influence, financial backers secure their portfolios with gold. At the point when a country's money is frail, financial backers go to gold, expanding request and costs. This is showing the connection between US dollar and gold value which is the worth of gold and dollars act contrarily. As the worth of the US dollar rises the worth of gold falls. Additionally, as the worth of the dollar falls, the worth of gold leaps higher. The strength of the US dollar relates to the component of loan fees

However, gold is viewed by modern investors as a risk-free investment. The price of gold does not rise quickly, but it does rise steadily. They won't make a lot of money, but there's also no risk of a market meltdown.

1.2 BACKGROUND OF THE STUDY

Gold is a sublime conventional strategy for reserve funds or speculation. Generally, families would introduce love birds gold gems as an indication of best of luck, just as crisis cash for stormy days since gold is a kind of valuable metal ordinarily utilized in exchanges with its worth, and has been viewed as an item that gives monetary and material place of refuge for individuals everywhere (Baur, 2010). It has been working as an option for paper cash and venture for a significant stretch of time. As indicated by Sindhu (2013), gold gives an establishment for financial backers to more readily deal with their own danger just as protecting their capital all the more proficiently, considerably more so during seasons of monetary emergency

Gold is a valuable metal that can be shaped. The precious nature of the metal has made it a highly prized store of value throughout history. When it comes to jewellery, gold is a popular metal to utilise. In addition, gold's industrial use is quite beneficial. It is employed in electronics as wiring because it is an excellent conductor, malleable, and very ductile. Mobile phones, televisions, GPS systems, calculators, and computers all include little amounts of gold in their internal workings. Glassmaking, medical therapies, and dentistry are a few other significant applications.

Besides, gold is considered a safe-haven investment in times of recession and sluggish global economies. Due to the high cost of gold, other precious metals such as silver, platinum, and palladium are attractive alternatives. Some of the physical qualities of gold can be obtained at a lesser cost with these other metals.

In additional, Ibrahim, M.H. (2012). found a statistically significant positive but minor relationship between gold and stock returns. The movement of the gold and stock markets at the same time does not appear to be intensified by a series of successive negative market returns, as is commonly observed during periods of financial upheaval among national stock markets Indeed, there is some evidence that the gold market is improving in value when the stock market decreases for a period of time.

According to Nurulhuda et al. (2014), a study on the factors that influence the price of gold has not yet been carried out in Malaysia. Due to an increase in the number of people and financial backers who have become interested in gold investments over the past few years, the factors that influence gold prices are not set in stone. The purpose of this review is to dissect macroeconomic variables such as raw petroleum costs, expansion rates, and trade rates that have an impact on the price of gold in Malaysia. After breaking down information from the years 2003 to 2012, this review employs the Multiple Linear Regression (MLR) Model to determine the critical connection between reliant and autonomous factors. In the aftermath of the review, it was discovered that there is a negative critical connection between expansion rates and trade rates on the price of gold. Furthermore, there is a significant positive relationship between the price of raw petroleum and the price of gold.

According to Baur & Mcdermott (2010), gold is shown to be a solid place of refuge and a method for diminishing misfortunes when confronting outrageous negative market shocks or emergency. Among a few items and valuable metals that are available on the lookout, Gold remaining parts as perhaps the most favoured wares as a speculation decision for investor according to Low, Yao and Faff, 2016.

Ghosh, Levin, Macmillan and Wright (2004) demonstrated that gold is a compelling since a long time ago run expansion support against US dollar conversion standard, implying that gold costs will increment if dollar somehow managed to deteriorate against different monetary forms. As proof, gold beat the securities exchange and different monetary forms when the United States President‟s political decision, when the market is in an unsound state (Creamer, 2016).

Nonetheless, in this new century, the value of gold is inextricably linked to the global economy, with gold prices fluctuating or changing by the day or even by the hour. This circumstance will have a detrimental effect on investors. Thus, it is critical for investors to have a solid strategy or direction when confronted with this issue to plan their invest in gold effectively.

Figure 1.1: Gold Price History

Source: GoldBroker

The figure above depicts the price of gold per ounce in Malaysia, and it demonstrates that the price of gold in Malaysia has drastically increase year after year from 2010 to 2020. When compared to the previous years, the price of gold is at its peak during the first half of 2020. This is anticipated to an increase in demand for exchange traded fund (ETF) holdings as a safe-haven investment according to the recent financial crisis. As a result of the epidemic, this is a process that has picked up momentum. On 25th of January 2020, the first instance of COVID-19 was discovered in Malaysia. Since that point forward, Malaysia has been tormented by an episode that proceeds until this day causing economies all over the planet are encountering an extraordinary monetary log jam in the midst of developing worries about the Coronavirus (COVID-19) flare-up and Malaysian organizations including enormous aggregates are no exemption. This provoking most of individuals to search out an elective wellspring of long haul financing, with gold being one of their top decisions since they accept that the cost of gold will ascend later on and that gold can be sold later for crisis use.

1.3 PROBLEM STATEMENT

Gold is a major financial asset for countries and central banks. It is also used by the banks to hedge against loans made to their government and as an indicator of economic health. Under a free-market system, gold is a currency like the euro, yen or U.S. dollar or others. Like many other Asians, Malaysians are familiar buying gold as a store of wealth, as a currency hedge, or for gifts for cultural or religious ceremonies such as weddings, festivals, and other special occasions. Whenever there's an economic crisis, the value for gold will always trend upwards and sometimes continue to climb higher in stock portfolios and this is making gold as a save investment to people.

Unfortunately, there are likewise a few factors that can upset the soundness of the cost of gold in the market causing financial backers started to question gold as a place of refuge speculation decision to shield them from hazards. Baur and McDermott (2010) expressed that gold can be a speculation fence and security against misfortunes, however, just applies to created markets, for example, European and US markets. Ghazali, Lean and Bahari (2013), expressed that gold‟s trademark as a fence and place of refuge isn't as powerful for investors in developing business sector like Malaysia, during financial exchange droop. Baur and Lucey‟s (2010) examination on whether gold is a place of refuge utilizing United States, United Kingdom and Germany stocks and bonds returns showed that gold just capacities as a place of refuge for around 15 exchanging days, and that financial backers just purchase gold on outrageous negative returns.

Hence, in this study, I intend to investigate and evaluate whether Malaysia's interest rate, exchange rate, inflation rate, and crude palm oil price have a connection to the gold price in Malaysia.

1.4 RESEARCH QUESTIONS

This study was conducted to examine the role of economic variables in the determination of gold price. Therefore, interest rates, inflation rates, exchange rates and price of crude pal, oil has been chosen as the explanatory variables to explain the fluctuation of gold price. Thus, the research question for this study is the explanatory variables to explain the fluctuation of gold price. Thus, research questions for this study is

i) What is the relationship between economic variables and gold price in Malaysia?

Besides, there are four specific questions that have been built for the purpose of this study. The question are

Specific research question:

i) What is the relationship between Interest rates (IR) and gold price in Malaysia?

ii) What is the relationship between Inflation rates (INF) and gold price in Malaysia?

iii) What is the relationship between Exchange rates (ER) and gold price in Malaysia?

iv) What is the relationship between Crude palm oil (CPO) and gold price in Malaysia?

1.5 RESEARCH OBJECTIVES

The main objective of this study is to identify the significant of economic variables on gold price. Thus, this research tries to determine the relationship between economic variable and gold price in Malaysia. Whereas the specific objectives of this research study are to:

i) To determine the relationship of Interest rates (IR) towards gold price.

ii) To determine the relationship of Inflation rates (INF) towards gold price.

iii) To determine the relationship of Exchange rates (ER) towards gold price.

iv) To determine the relationship of Crude palm oil (CPO) towards gold price.

1.6 SIGNIFICANCE OF THE STUDY

Gold price is impacted by a few variables on the lookout. While past examination like Zhang and Wei (2010) centers the relationship of gold price with just one variable, for example, unrefined petroleum price and silver value, gold price ought to be relapsed, so the connections of gold price and different elements are noticed. This can assist with assessing which component is the most important to impact gold price just as their level of impact. Normal Least Square (OLS) strategy is utilized in this review to notice the relationship of gold cost and autonomous factors, for example, unrefined petroleum value, conversion scale and expansion rate. Basic direct relapse and numerous straight relapses is formed also to see their relationship and actually take a look at the consistency of results. Through various direct relapse, it will show plainly which factors have more effect on gold cost overall.

Macroeconomic stability is the most common variable that can affect the gold price in Malaysia. The variable that used in this study is Interest rate (IR), Exchange rate (ER), Inflation rate (INF) and Crude palm oil price (CPO).

The goal in this study is to identify and analyse the most variable that will fluctuate gold price in Malaysia for 30 years date from 1991 to 2020.

1.7 SCOPE OF THE STUDY

The goal of this research is to look into the relationship between economic variables and gold prices in Malaysia.. Malaysians should consider gold as a smart investment because it is a secure option for them. The value of gold will always trend upward during an economic crisis, and it may occasionally continue to climb higher in stock portfolios because of the crisis. Malaysia is the only country in which this study's sample is restricted. The duration of this study will be 30 years, from 1990 to 2020.

The topic under discussion will be whether economic variables will have an impact on the gold price in Malaysia. The interest rate (IR) which is real interest rate, the inflation rate (INF), the exchange rate (ER), and the price of crude palm oil are the independent variables in this study (CPO). Meanwhile, the dependent variable is the gold price in Malaysia.

Oil and gold are the world's most important commodities, and they have received a lot of attention recently, owing partially to a surge in their prices and an increase in their monetary applications. Unrefined petroleum is the most commonly traded commodity on the planet, and its price is the most volatile in the product market (Regnier, 2007). In the meantime, gold is regarded as the pioneer in the precious metals market, as increases in its value appear to cause equal increases in the costs of other precious metals (Sari et al. 2010). Specifically, the impact of oil price shocks on gold price returns. Despite this, the literature on the oil-gold value relationship is scant, as most existing research has focused on the relationships of these commodities to macroeconomic exhibitions. As gold cost is getting unstable in ongoing turns of events, it is crucial to figure out which element impact gold costs as gold will go about as a protect in arrangement of financial backers. By deciding the elements that influence gold value, it fills in as a rule for financial backers on whether they can keep on putting resources into gold to defend their resource.

1.8 LIMITATIONS OF THE STUDY

The main limitation of this research is that it is solely focused on Malaysia and does not include other countries even though other countries, such as India, have a strong need for gold. As a result, this analysis is based on data collected during a 30-years period which is from 1991 to 2020. Even though other countries have a significant demand for gold, the conclusions of the study cannot be applied to other Asian countries or to other countries in general. Another limitation of this study is that it was conducted over 30 years and data collected was only from Malaysia.

1.9 DEFINITION OF KEY TERMS

In this study, there are several terms that should be defined.

1.9.1 INFLATION RATE

Inflation is the rate at which prices rise over a given period. Inflation is typically defined as a broad measure, such as the overall increase in prices or the cost of living in a country.

Furthermore, inflation is seen as a vital component for possible economic conditions, it is also a primary goal of every nation according to Feldkircher, Siklos (2019), and Oikawa, K. Ueda (2019). It was said by Gulsen E, Kara H. (2019) that the shift in inflation rates is a problem to compute and track monetary policy analyses on time, and any ambiguity that results is an indication of policy decisions' incredibility. It is recommended by R.Bhattacharya(2014) and A. Ghosh and Naz F. Mohsin (2014) that many aspects such as interest rates and potential output should be included when assessing and monitoring the impact of inflation levels, such as the money supply and wage rate. A rise in the price level of an item or service, or a market basket of commodities and/or services, was defined by Prichett et al.

1.9.2 EXCHANGE RATE

Exchange rate is the price of one currency in terms of another currency. Its position can be either fixed or floating. Fixed exchange rates are set by individual countries' central banks, whereas floating exchange rates are determined by market demand and supply mechanisms.

According to Sabine Vogler, Peter Schneider, and Nina Zimmermann (2019), the exchange rate between two countries defines the price of one country's currency in relation to another. They can be expressed as an average rate over a specified period of time or as the rate at the end of the specified period of time.

1.9.3 INTEREST RATE

Lenders charge borrowers an interest rate, which is expressed as an annual percentage of the principal (the amount loaned) owed to them. The interest rate on a loan is often expressed as a percentage rate calculated on an annual basis, which is known as the annual percentage rate (APR).

According to Morton Glantz, Robert Kissell, (2014) interest rates are essential for risk management and international trade, as well as for pricing derivatives, futures, and options.

1.9.4 CRUDE PALM OIL

Palm oil is primarily used in cooking in Southeast Asia due to its abundance. Apart from cooking and food production, Palm Oil and its derivatives, referred to as fractions of oil, are used to manufacture pre-packaged foods and personal care products such as cosmetics, cleaning agents, and hair care products, as well as soaps and other personal care items. Palm wax is used to make candles because it is obtained from palm trees. It is used as a by-product to produce biofuel for automobiles, as well as shipping and aircraft fuel.

As a by-product of this process, glycerine is also produced. Indonesia and Malaysia are the world's two largest palm oil producers and exporters. Indonesia and Malaysia produce the lion's share of crude palm oil in the world, accounting for 85 percent of total production. Palm oil prices are influenced by adverse weather conditions that adversely affect palm production.

1.10 SUMMARY

This chapter discussed the following topics: introduction, the study's background, the problem statement, the research objectives, the research questions, the study's significance, the study's limitations, the scope of the investigation, and the definition of key terminology. The literature review of the subjects linked to this study will be covered in greater detail in the following chapter.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Modern-day demand for gold extends beyond the use of the metal as an investment and for the production of jewellery, since gold is also utilised in the production of certain electronic and medical products. Central banks keep paper currencies and gold on hand as a form of reserve. The price of gold normally rises as central banks diversify their monetary reserves away from the paper currencies that they have collected and towards gold. A large number of countries around the world have gold reserves that are primarily constituted of gold.

Bloomberg stated that global central banks have been purchasing the most gold since the United States abandoned the gold standard in 1971, with 2019 estimates only slightly falling short of the previous year's record-breaking year

According to the World Gold Council, Turkey was the greatest buyer of gold in 2019, followed by Russia, Poland, and China, respectively. In all, governments purchased a total of 650 tonnes of gold in 2019, a slight decrease from the 656 tonnes purchased in 2018, but still near levels not seen in more than 50 years. The price of gold fluctuates as a result of a complex interplay of many diverse elements rather than a single driving force. Some of the most important factors influencing gold prices are interest rate, exchange rate, inflation rate and crude palm oil price.

2.2 LITERATURE REVIEW

2.2.1 GOLD PRICE

Gold's pricing has been the subject of numerous studies. No matter how many different variables are used in previous research, it's apparent that consumers tend to view gold as a safe investment. A study by Md Hashim *et al*, (2017) on the relationship between macroeconomic conditions in India, United states of America, China, Turkey and Saudi Arabis between 1996 until 2015 found a positive association was established between oil prices and gold prices, but a negative correlation between exchange rates, inflation, and interest rate movements and gold prices. According to their fundings, the only factor that did not have a substantial impact on the price of gold was the exchange rate.

In Malaysia, the public and investors have been more aware of the issue in recent years. They began to see the benefits of engaging in gold trading as time went on. Gold prices must be kept current in order for people to take advantage of situations where they can acquire gold at a low price and sell it at a high price in the future. As a result, it is necessary to identify the elements that influence the gold price in order for consumers to be able to forecast the best time to purchase, hold, or sell gold.

2.3 INTEREST RATE

According to economic theory, interest rates have an inverse relationship with gold. Thus, gold price drops as a result from an increase in interest rates. Since rates are further directly related to the strength of an economy, gold price shares a negative relation with a falling economy. Alluding to the World Gold Council (2013), gold value reacted to United States loan costs through venture channels, as worldwide speculation from one side of the planet to the other establishes more than 25% of gold interest. US and Europe‟s markets affect gold costs due to their openness just as the sheer size of the exchanges done in their business sectors. Furthermore, World Gold Council (2013) expressed that lower loan fees will animate the gold and adornments market; but this may not hold for developing business sectors, as they are deficient with regards to admittance to monetary administrations.

Shailesh Rastogi *et. al*, (2021), the findings of their study are of great importance, particularly to policymakers, because they state that fluctuations in the prices of gold and crude oil have no negative impact on interest rates in India. As a result, while fluctuations in the prices of gold and crude oil may have a general impact on the economy, they have no effect on interest rates. This means that domestic and foreign investments in the country will not be adversely affected by the price of gold and crude oil, which are mostly determined by interest rates in the country.

Abdullah (2013) inspected the relationship of interest rate and gold price through Gibson‟s Paradox. Gibson‟s Paradox is a perception where the price of products and items are decidedly corresponded with interest rate all over. Through their perceptions in examples of United States and England, it is presumed that highest quality level, interest rate and different items costs are emphatically corresponded. The relationship of interest rate and gold price is inversed in the United States

Boris (2015) analyzed the connection between gold price and United States long haul interest rate just as transient interest rate through relationship investigation. He observed that interest rate ascending in the United States can prompt a lower cost of gold.

Baber and Thomas (2013) examined relationship of gold price and interest rate from 2002 to 2012 through connection strategies. They observed that a interest rate increment will raise the gold price overall.

Zakaria *et al*. (2015) concentrated on the variables influencing the price of gold in Malaysia and directed to decide the components impacting gold price in Malaysia. Scientist utilized Stata programming to survey the imminent connections between gold price and interest rate. The outcomes uncovered that the paces of interest were essentially related with gold costs in Malaysia in various extent and heading.

Abdullah and Abu Bakar (2015) intended to find out a determining model of the cost of gold in association with the pace of revenue from 1971 until 2013 that would serve administrators' richest in their forward explanation of capital market assumptions. The result of the examination observed that the price of gold and genuine interest rate is oppositely related.

Summarizing findings from previous researcher for interest rate and gold price are expected to positive relationship.

2.4 INFLATION RATE

The term "inflation" refers to when prices rise, whereas the term "deflation" refers to when the value of the dollar falls. During inflation, paper monetary forms will generally lose their worth and buying power. Gold then again is a lot of stable on its worth, consequently financial backers and purchasers frequently go to resources that offer some benefit and ended up being cash, which is silver and gold. Gold has been respected to give a "place of refuge" against inflation too, as certain examinations have shown that gold price have inflation supporting properties according to Tufail and Batool, 2013.

According to research by Xiaoyong Huang *et. al* (2019) the results reveal that the effect of inflation expectations on gold price is insignificant when their value is at a lower level . This result suggests that the rise of inflation expectations in the period of high inflation will increase gold prices, whilst the decline in inflation expectations during the period of deflation does not lead to gold price to fall. These results indicate that investors only pay attention to the effect of inflation when it is at a higher level.

Choong *et al*. (2012) explored on the determinants of the gold price by utilizing straightforward and various direct relapse. It was led to concentrate on the determinants of the gold price by examining the four keys impacting factors influencing gold price which are inflation, silver value, USA dollar exchange weighted list and Brent unrefined petroleum cost. The information was gotten quarterly for the time of 1971 to initially quarter of 2011 obtained from International Financial Statistics (IFS) and Global Financial Data (GFD). The outcomes displayed there were positive connection between inflation, gold price and Brent raw petroleum cost with gold costs.

Tufail and Batool (2013) investigated the connection between gold price and inflation in Pakistan utilizing Vector Error Correction Model (VECM) and cointegration strategies, from year 1960-2010. Their results showed that gold price are emphatically and altogether connected with inflation to Pakistan.

Aleemi *et. al* (2016) on their study explored the relationship of gold price, exchange rate and interest rate on inflation rate in Pakistan also utilizing vector mistake revision model and cointegration tests. They observed that gold price is decidedly and

fundamentally related with inflation of Pakistan over the long haul, implying that ascent in gold price will cause an increment in inflationion pace of Pakistan.

A study by Seemuang and Suppanunta (2013) investigate the connection between the development of gold worth and dynamic macroeconomic factors which is Inflation rate, US genuine GDP, worth of Dollar, US cash supply level 2 and inflation rate in United States. The review's conclusion demonstrates that inflation has a fundamental effect on the gold price and that the US Real GDP is inextricably linked to the gold price. Cunado *et. al* (2019) demonstrated, mean-reverting behaviour exists in the gold price over a long period of time, and the cycle of the gold price is approximately seven years. Batten, Ciner & Lucey (2014) examined the relationship between inflation and price of gold. They showed that there is no cointegration connection among inflation and gold price while using information on 1980s for their study. Gold can be viewed as an option for paper money just as a valuable ware on the lookout, yet its job as an inflationary fence is questioned by the creators.

2.5 EXCHANGE RATE

The purchase of significant quantities of gold by investors occurs most frequently when their country is suffering high levels of inflation. Because of the inherent worth of gold and the limited supply available, the demand for gold grows during inflationary periods. Given the fact that gold cannot be diluted, it is able to preserve its worth significantly better than other kinds of currency. According to Iqbal (2017), gold is a safe investment in emerging markets such as India and Pakistan because it provides protection against exchange rate risk.

Laily *et al*. (2017) concluded that there is a negative association between the exchange rate and the gold price, despite the fact that there is no evidence of a statistically significant relationship between the two. Nonetheless, there are explores that show the inverse to be valid which is according to Chin‟s (2011), he's study on the relationship of gold cost and different ASEAN trade rates through Vector Error Correction Model (VECM) showed that there is a drawn-out connection between gold price and exchange rate of MYR/USD, SGD/USD and THB/USD. Gold price resulted had positive relationship with exchange rate.

Haque, Topal and Lilford‟s (2015) study on gold price and Australian dollar-US dollar relationship and observed that the two factors have a solid positive connection, with one percent inflation in gold cost prompting 0.5% increment in AUD/USD swapping scale. Vector Autoregression (VAR) test showed that there is bi-directional causality between the two factors.

Azar (2015) examined on the connection between United States gold price, oil price and stocks with the exchange rate US dollar. The researcher observed that the law of one value applies to gold, oil and stock price with US dollar exchange rate, expressing that there is an opposite connection between US dollar and the three factors. At the point when US dollar appreciates, the three resources should fall by similar sum as these resources are named in US dollars.

Omag‟s (2012) examination on the relationship of gold price and different monetary factors including exchange rate utilizing relapse model showed that gold price exhibited solid positive relationship with Istanbul Stock Exchange 100 Index and the exchange rate between Turkish Lira and the Dollar.

Overall, exchange rate should should display a positive relationship with exchange rate. As the worth of exchange rate (MYR/USD) builds, the cash of Malaysian Ringgit devalues. In this way financial backers and shoppers in the market will change to gold to forestall the deficiency of significant worth in their cash.

2.6 CRUDE PALM OIL PRICE.

Malaysian crude palm oil has been a significant export commodity, significantly contributing to Malaysia's financial turnaround. PALM OIL is a rural product traded in a normalised market – Bursa Malaysia-affiliated Berhad (BMdB). Additionally, because Malaysia is home to the world's largest and third largest publicly traded palm oil organisations, such as Sime Darby Berhad and Felda Global Ventures Holdings Berhad, and other massive organisations control up to 60% of Malaysia's palm oil estates.

A nonlinear ARDL (NARDL) model was developed to investigate the nonlinear effects of gold prices, oil prices, and related volatility on stock prices in the top ten emerging market stock markets. The researchers Raza *et al.* (2016) found that the price of gold has a positive impact on stock prices in China, Brazil, South Africa, Russia, and India, that crude oil prices have a negative relationship with stock markets, and that fluctuations in the gold market and the crude oil market lower stock prices in the long run.

According to Laily et al. (2017), there is a strong correlation between the prices of crude oil and gold. They established that a USD1 increase in crude oil prices resulted in a USD 10,265 increase in gold prices.

However, studies by Tram Qian et al (2019) discovered negative connections and minor impacts of crude oil prices on gold pr

2.7 RESEARCH FRAMEWORK

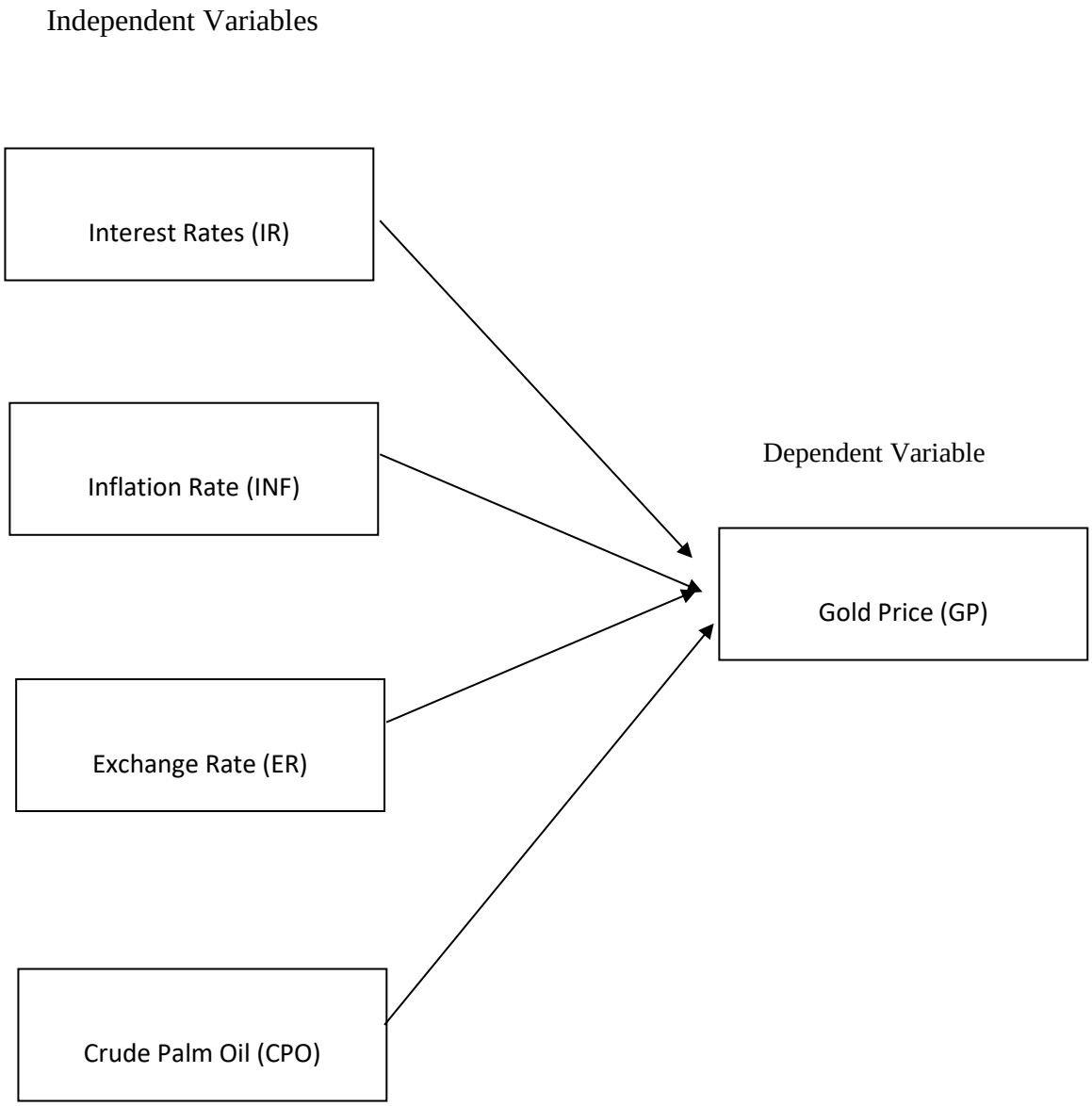

Figure 2.7: Theoretical Framework of Economic Variables and Gold Price

2.8 SUMMARY

Many studies have been undertaken in order to justify the influence of economic variables such as the exchange rate (ER), inflation, interest rate (IR), and crude palm oil price (CPO) on the gold price in various nations, taking all of this into consideration. Based on all of the literature reviews that have been conducted on each issue, we can see that certain studies have asserted that these two variables do not necessarily influence one another, which is contrary to the findings of other research. As a result, there will be a significant gap in the research on the factors affecting the economic factor that affects the gold price. As a result, the purpose of this study is to dispel the widespread belief that economic variables play a significant role in determining the gold price.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter will detail the research procedures used to conduct the study. It is where new information is discovered and created to address the unresolved question. Additionally, it describes in detail how the researcher resolves all issues and develops a strong and credible rationale that is pertinent to the research objective and objectives. Furthermore, this study will establish a correlation between the independent and dependent variables. This study will not only describe the procedures that will be followed, but also why those procedures will be followed in order to conduct sound research.

3.2 SAMPLING

The secondary data approach was used in this study. This is because secondary data is readily available from other sources and has been incorporated into previous studies.

3.2.1 TARGET POPULATION

This study examines the gold price in Malaysia. This study establishes a relationship between the dependent variable, gold price, and the independent variables, exchange rate, inflation rate, interest rate, and crude palm oil price.

3.2.2 SAMPLING SIZE

The data for the research study on the gold price in Malaysia spans 30 years. The data for this study is collected over a 30-year period, from 1990 to 2020.

3.3 DATA COLLECTION

The data for this research paper were gathered from a variety of secondary sources. Secondary data is information that has been gathered from other sources such as the World Bank, Statista, previous journal articles, and DataStream. Secondary data is justified because it serves as a baseline for the data acquired. While reviewing secondary data, a number of conditions must be met. The data must be accessible and meet certain standards of relevance. The accuracy and sufficiency of the data must be determined.

3.4 VARIABLES

3.4.1 DEPENDENT VARIABLE

The dependent variable in this study is the price of gold in Malaysia. From 1990 to 2020, data will be extracted.

3.4.2 INDEPENDENT VARIABLES

The interest rate, the inflation rate, the exchange rate, and the price of crude palm oil are all independent variables in this study. All variables were used to establish a connection and relationship between independent and dependent variables in order to arrive at the research's conclusion.

The two types of variables that can be used to describe a situation are dependent and independent variables. The gold price will be utilised as the dependent variable in this study, and it will be quantified by referring to the price in Ringgit Malaysia (RM) according to the country that is the focus of this study, which is Malaysia. Using the dependent variables, we may determine the influence of the independent variable on the test units in this study.

The independent variables for this study plan consist of four independent variables, which are primarily the exchange rate (ER), the interest rate (IR) which is real interest rate , the inflation rate (INF), and the price of crude palm oil (CPO). The exchange rate (ER) is a measure of a country's overall economic health. The economic variables used to forecast an exchange rate are the same ones used to estimate a country's overall economic health. The elements listed above are all significant determinants of a country's foreign exchange rates.

Furthermore, the rate of inflation (INF) is calculated using a proxy for the Consumer Price Index (CPI). Inflation has a significant impact on the price of gold, as previously stated. When additional fiat currency is created, the first impact of inflation is that it lowers the value of each other dollar in circulation. This is known as the inflationary effect. Gold, as well as other commodities that are valued in US dollars around the world, are mechanically more expensive.

Following that, the real interest rate (IR) is utilised as a tool in the conduct of economic policy. The central bank is often in charge of setting the interest rate in order to achieve a monetary policy objective, which is typically price stability or low and stable inflation, among other things. When it comes to interest rates, gold prices have an inverse relationship. When interest rates fall, consumers don't earn decent returns on their savings, which leads to an increase in gold demand and, consequently, an increase in the price of gold.

The last thing to consider is the price of crude palm oil. It is one of the most profitable land uses in the tropics, and it is used to produce palm oil. Palm oil makes a large contribution to economic growth and the alleviation of rural poverty in the major producing countries, as well as giving significant advantages to the major importing countries. As a result, the expansion of oil revenues stimulates investment in the gold market, resulting in an upward trend in both the oil price and the gold price levels. In such a scenario, an increase in the price of oil leads to an increase in the demand for gold

Table 3.4 : Variables and Proxy

Variables	Proxy	Units	Symbol
Dependent Variable			
Gold Price	Price	RM	GP
Independent Variables			
Interest Rate	IR	RM	IR
Inflation Rate	Consumer price Index	Index Number	INF
Exchange Rate	Domestic currency	RM	ER
Crude Palm Oil Price	CPO	RM	CPO

3.5 RESEARCH DESIGN

Research Design generates information that is useful in reducing uncertainty. This section will discuss the study's objective, its style, the scope of the researcher's intervention, the study's environment, the analysis component, and the study's timeline. The primary objective of this study is to establish a link between four macroeconomic variables and their effects on the Malaysian gold price, namely the exchange rate (EXC), inflation (INF), interest rate (IR), and crude palm oil price (CPO).

3.5.1 PURPOSE OF THE STUDY

The researchers conducted this research using a variety of methods, including causal studies, exploratory investigations, and descriptive studies, among others. A causal inquiry method was used in this study to investigate the relationship between the dependent and independent variables. The purpose of this study is to determine the relationship between the gold price and several independent variables, including the exchange rate (ER), inflation (INF), crude palm oil (CPO), and interest rate (IR).

3.5.2 TYPES OF INVESTIGATION

Correlational analysis, clarification analysis, and a casual analysis are all viable approaches for conducting this research. The causal investigation approach will be used to conduct the research for the purposes of this study. A causal relationship implies that the movement of one thought or variable may have an effect on the movement of another. As a result, the price of gold oil in Malaysia may be influenced by the movement of available elements.

3.5.3 RESEARCHER INTERFERENCE

The extent to which a researcher interferes with a subject is referred to as intervention by a research subject. The outcome of the study is influenced by several factors, all of which have been examined. Researchers may experience interference in their research in one of three ways: minimally, moderately, or severely. Because the topic was dependent on earlier findings by a previous researcher, the observation of prior findings was limited to no intervention in this study.

3.5.4 UNIT OF ANALYSIS

Researchers use the organization's unit of analysis to collect data, which is then analyzed. Analytical units include individuals, days, groups, organizations, and countries, to name just a few examples. The country has been selected as the element of analysis for this study. Due to the fact that the study was conducted using the gold price in Malaysia, this is the case. All of the information available was taken from Malaysian data sources.

3.5.5 STUDY SETTINGS

Study environments can be divided into two categories which is contrived and non-contrived study environments. For the purposes of this study, secondary data was used to draw conclusions. This study is undertaken as a result in a non-contrived setting where the research can be completed in normal working conditions, rather than in a laboratory setting.

3.5.6 TIME HORIZON

The duration of the study is classified as cross sectional or longitudinal. A cross-sectional study is one in which data are collected once, sometimes over several days, weeks, or months, in order to accomplish the research's objective, rather than over a longer period of time. Longitudinal research is all about studying over a longer period of time in order to accomplish a specific goal; on the other hand, this investigation will make use of longitudinal studies. According to the findings, the research lasted ten years, beginning in 2010 and concluding in 2020.

3.6 HYPOTHESIS STATEMENT

The primary objective of this study is to examine the relationship and impact of four macroeconomic variables on the Malaysian gold price, namely the exchange rate (ER), inflation (INF), interest rate (IR), and crude palm oil price (CPO). The four macroeconomic variables studied are the exchange rate, inflation, interest rate, and crude palm oil price (CPO). The effect of economic variables such as the exchange rate (ER), inflation (INF), interest rate (IR), and crude palm oil price (CPO) on the Malaysian gold price, which will be the dependent variable, will be stated in the hypothesis statement of this study. With the completion of this study, it will be possible to determine if macroeconomic variables have an impact on the Malaysian gold price or not.

a) Interest rate (IR)

H_A: Interest rate does not affect Malaysian gold price.

H_0: Interest rate does affect Malaysian gold price.

b) Exchange Rate (ER)

H_A: Exchange Rate does not affect Malaysian gold price.

H_0: Exchange Rate does affect Malaysian gold price.

c) Inflation (INF)

H_A: Inflation does not affect Malaysian gold price.

H_0: Inflation does affect Malaysian gold price.

d) Crude palm oil (CPO)

H_A: Crude palm oil does not affect Malaysian gold price.

H_0: Crude palm oil does affect Malaysian gold price.

3.7 RESEARCH METHODOLOGY

The World Bank, Data Stream, Statista, the Malaysian Palm Oil Board (MPOB), the Malaysian Palm Oil Council (MPOC), and a gold dealer provided secondary data for this study, as well as information from a previous publication. The relationship between the dependent variable, the gold price in Malaysia, and the independent variables, interest rate (IR), inflation (INF), exchange rate (ER), and crude palm oil price, will be investigated in accordance with the research objectives (CPO). In Malaysia, any of the four factors mentioned above can affect the price of CPO. Between 2010 and 2020, data were collected over a period of time.

3.7.1 DESCRIPTIVE ANALYSIS

The descriptive review technique provides an overview of the mathematical evidence used in this research, as well as details about the evidence. The comprehensive statistics section of the report includes a list of the various samples obtained during the data set's collection. arithmetic expressions such as mean, median, maximum, and minimum. Minimum, skewness, and even Kurtosis statistics are the most frequently used for measurements. To summarise, a descriptive statistic is a statistic that summarises another statistic. The results are compiled in one location.

3.7.2 CORRELATION ANALYSIS

This analysis is a test to measure whether the dependent variable and the independent variable are both linearly constrained. The aim of this test is to see if there is a linear relationship between the dependent and independent variables. The probability of this conclusion would be denied if the p-value of the figure is less than 0.05. It is concluded that there is a connection between these two variables.

H0: Do not have correlation

H1: Have correlation

3.7.3 REGRESSION ANALYSIS

$$Git = \beta 0 + \beta 1\ IRit + \beta 2\ INFit + \beta 3\ ERit + \beta 4\ CPOit + eit$$

Git = Gold price

β1 β2 β3 β4 = Coefficient of each independent variable

BIR = Interest Rate

BINF = Inflation Rate

BER = exchange Rate

BCPO = Crude Palm Oil price

e= Error term

i= In Malaysia

t= Year 1990 until 2020

3.7.4 T-TEST

The t-test is a statistical test used to compare two groups' means. It is sometimes used in hypothesis testing to determine whether a method or procedure has an effect on the population of interest, or whether two groups differ. The t-test is simple to apply because it accounts for differences in variable measurement units as well as standard deviations of estimated coefficients. Furthermore, when the stochastic error term is normally distributed and the variance of that distribution must be estimated, the t-test comes into play.

When deciding whether or not to reject a null hypothesis after calculating the t-value, the critical t-value is used. Depending on whether the test is one-sided or two-sided, the critical t-value, tc, is chosen from a t-table. This study will employ a one-sided t-test to identify the decision rule:

For one-sided hypothesis:

H0: $k \leq 0$

HA: $k > 0$

Reject null hypothesis, H0 if: $tk > tc$

Do not reject null hypothesis, H0 if otherwise.

The level of significance for this study is set at 5%. If the p-value is less than 5% ($p < 5\%$) , the difference between the two observations is statistically significant, and the null hypothesis is rejected.

3.7.5 F-TEST

The F-test is a formal hypothesis test used to deal with null hypotheses with multiple hypotheses or single hypotheses about a set of coefficients. For example, when the underlying economic theories become specific values, "joint" and "compound" null hypotheses are appropriate. To begin, we must convert the specific null hypothesis into a constraint that will be added to the equation. The constraint equation must then be estimated using OLS, and the fit constraint equation must be compared to the unconstraint equation.

H0: $B1 = B2 = \ldots = Bk = 0$

HA: H0 is not true

Reject null hypothesis, H0 if: fk > fc

Do not reject null hypothesis, H0 if otherwise.

3.7.6 COEFFICIENT OF DETERMINATION

Coefficient of Determination is also known as R-squared, and it refers to the ratio of the explained sum of squares to the total sum of squares. The higher the R-squared, the better the estimated regression equation fits the sample data. The metric is known as "goodness of fit." R-squared has the best fit when it equals 1. For example, if R-squares is equal to 0.5, the model's input can explain roughly half of the observed variation.

3.7.7 ADJUSTED R-SQUARED

The percentage of the variation in Y around its mean explained by the regression equation is measured by adjusted R-squared. A rise in R-squared indicates that the marginal benefit of adding variables outweighs the cost, and vice versa. The same as R-squared, the maximum possible for the adjusted is 1.00, while the minimum can be negative.

3.8 ASSUMPTION TEST.

3.8.1 NORMALITY TEST

The normality test determines whether or not data is normally distributed. When using the normalcy test, it is critical to assess the sample for kurtosis and skewness, according to Jarque Bera, a key figure in statistical applications. To determine whether the data is regularly distributed, the test result must be analysed at the 5% significant level.

H_0: Normally distributed data

H_A: Not normally distributed data

3.8.2 MULTICOLLINEARITY TEST

Multicollinearity refers to a linear relationship between two independent variables, whereas collinearity relates to the presence of more than two independent variables. When the independent variables in a regression model are correlated, this is known as multicollinearity. Independent variables should not be coupled, which is the issue. When fitting the model and analysing the findings, a high degree of correlation between variables can pose issues. The two types of multicollinearities are perfect and imperfect multicollinearity. When two (or more) independent variables are poorly linearly connected, perfect multicollinearity exists.

Ho : There is multicollinearity

HA: There is a no multicollinearity

3.8.3 HETEROSKEDASTICITY TEST

Heteroskedasticity is typical in data sets having a large variation between the most and least observed value of the dependent variable, according to Frost (2020). Pure and impure heteroskedasticity are the two forms of heteroskedasticity. Pure heteroskedasticity violates the assumption of homoskedasticity, which states that the error term's observations are chosen from a distribution with a constant variance and are caused by the error term of the correctly specified equation. Impure heteroskedasticity is caused by a specification error, such as a missing variable.

Homoskedastic is the polar opposite of heteroskedastic. The term "homoskedasticity" refers to a condition in which the residual term's variance is constant or nearly constant. One of the assumptions of linear regression modelling is homoskedasticity. It is necessary to guarantee that the estimates are accurate, that the dependent variable's prediction bounds are valid, and that the parameter's confidence ranges, and p-values are valid. Said Hayes. A, 2020.

Ho : Homoskedasticity

HA : Heteroskedasticity

3.9 SUMMARY

The purpose of this chapter is to demonstrate why it is critical for researchers to consider research design when conducting studies. Additionally, the research design will be used in this study or research to ensure the validity of the results. The purpose of this study is to examine the relationship between the dependent variable, gold prices in Malaysia, and the independent variables, interest rates (IR), inflation (INF), exchange rates (ER), and Crude Palm Oil (CPO) prices, from 2010 to 2020. These two variables are observed and analysed in this study, and a correlation is established. The World Bank, Data Stream, Statista, the Malaysian Palm Oil Board (MPOB), the Malaysian Palm Oil Council (MPOC), and gold trader are among the sources of information, as is a previously published article. The test results will be used to generate data that will be used to respond to the posed hypothesis statement.

CHAPTER 4
DATA ANALYSIS

4.0 INTRODUCTION

This chapter will explain and resolve the hypotheses that were supported by the empirical results of all the experiments conducted on the collected data. These tests were conducted with the EViews software to ascertain the independent variable's effect on the dependent variable. The descriptive analysis, test of assumptions, correlation analysis, and regression analysis were all used in this study.

4.1 DESCRIPTIVE ANALYSIS

TABLE 4.1 : DESCRIPTIVE ANALYSIS

	Gold Price (RM /troy ounce)	Interest Rate (Index).	Inflation Rate (Index)	Exchange Rate (RM)	Crude Palm Oil Price (RM /tonne)
Mean	3244.088	3.535765	2.539081	3.420669	1849.629
Median	1857.457	3.748419	2.617801	3.524503	1610.000
Maximum	7390.902	11.78239	5.440782	4.300441	3219.000
Minimum	1131.999	-3.903382	-1.138702	2.504404	700.5000
Std. Dev.	2078.814	3.488910	1.465576	0.573241	729.5157

Table 4.1 :Descriptive Analysis

Notes: The dependent variable is the Gold Price. The independent variables are the Real Interest rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price (CPO).

The average or mean, median, maximum, minimum, and standard deviation for the Gold price, Real Interest rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price (CPO) are shown in Table 4.1 above.

The mean price of gold is RM3244.088, which represents the average price of gold in Malaysia from 1990 to 2020. Following that, the median gold price is RM1857.457, indicating that half of the observations are above that value. The maximum gold price is RM7390.902, indicating that it will be the highest in Malaysia in 2020. Additionally, the lowest gold price in Malaysia occurred in 2001, at RM1131.999. According to the standard deviation, the dispersion of gold prices from their mean is RM2078.814. This indicates that the gold price has a large standard deviation because the data points are spread out and there is a higher degree of deviation within the data set; thus, the more spread out the data, the larger the standard deviation.

The average interest rate is represented by the mean value of the interest rate, which is 3.535765. As a next step, the median interest rate is 3.748419, which indicates that half of all observations are above and half of all observations are below this value. The median interest rate indicates that half of all observations are above and half of all observations are below this value. Malaysia's maximum interest rates in 2009 were 11.78239 percent, and the lowest interest rates were -3.903382 percent in year 2008. The standard deviation reveals that the interest rate's dispersion from its mean is 3.488910 percentage points away from the mean. This demonstrates that the interest rate has a small standard deviation because the data points are close to the mean and the standard deviation is lower than it would otherwise be.

Following that, inflation (INF) has a mean value of 2.539081, indicating the average inflation rate. Following that, the median inflation rate is 2.617801, indicating that half of the observations are above this value and half are below it. In 2008, the maximum inflation rate was 5.440782, and in 2020, the minimum inflation rate is -1.138702. The

standard deviation demonstrates that the inflation rate's dispersion from its mean is 1.465576. This demonstrates that inflation has a low standard deviation because the data points are close to the mean and the data set has a lower standard deviation; thus, the less spread out the data, the lower the standard deviation.

The mean value for exchange rate (ER) is RM3.420669, indicating the average number of exchange rates. Following that, the median exchange rate is RM3.524203, indicating that half of the observations are above and half are below that value. The maximum amount of exchange rate shown in 2020 is RM4.300441, while the minimum amount shown in 1995 is RM2.504404. The standard deviation demonstrates that the exchange rate's dispersion from its mean is RM0.573241. This indicates that the exchange rate has a high standard deviation because the data points are spread out and there is a greater deviation within the data set; thus, the more spread out the data, the higher the standard deviation.

Finally, the mean price of crude palm oil is RM1849.629 per tonne, indicating the average price of crude palm oil. The dispersion of the inflation rate from its mean is RM729.5157 per tonne, as measured by the standard deviation. This demonstrates that inflation has a low standard deviation because the data points are close to the mean and there is a lower deviation within the data set; thus, the lower the standard deviation, the less spread out the data. Following that, the median price for crude palm oil is RM1610.00 per tonne, indicating that half of the observations are above this value and half are below this value. The maximum price for crude palm oil in 2011 is RM 3219.00, and the lowest price for crude palm oil in 1990 is RM700.500.

4.1 ORRELATION ANALYSIS

No. of observation: 31 Correlation T-statistic Probability	Gold per troy ounce (RM)	Real Interest Rate (Index)	Inflation (Index)	Exchange Rate (RM)	Crude Palm Oil per tonne (RM)
Gold	1.0000 ----- -----				
Real Interest Rate	-0.1878 -1.0230 0.3116	1.0000 ----- -----			
Inflation	-0.4028 -2.3697 0.0247**	-0.1699 -0.9289 0.3606	1.0000 ----- -----		
Exchange Rate	0.3211 1.8262 0.0781	-0.2189 -1.2083 0.2367	-0.4666 -2.8410 0.0081	1.0000 ----- -----	
Crude Palm Oil	0.8289 7.9810 0.0000**	-0.3927 -2.299 0.0289	-0.1585 -0.8619 0.3958	0.3972 2.3310 0.0269	1.0000 ----- -----

Table 4.2

CorrelationAnalysis

*Notes: The dependent variable is the Gold Price. The independent variables are the Real Interest rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price (CPO). **probability value that are significant*

Table 4.2 above shows the correlation analysis of the research that include the correlation, t-statistic, and probability. Correlation analysis is a statistical approach used in research to calculate the link between two variables and measure the strength of the linear relationship between them. Correlation analysis, in its most basic form, determines how much one variable changes as a result of a change in the other. A high correlation indicates a strong relationship between the two variables, whereas a low correlation indicates a poor relationship.

To analyses the correlation, a correlation between the variables ranging from -0.7 to -8.9 indicates a strong negative relationship, whereas a correlation between the variables ranging from +0.7 to +0.89 indicates a strong positive relationship. That is, as one variable increases, the other increases as well. There is no relationship between the variables because the correlation value is 0. That is, as one variable increase or decreases, the other remains constant. The level of significance has been set at 5%, or 0.05.

First, consider the interest rate and the price of gold. The results show a weak downhill linear relationship or a negative relationship with the gold price, as the correlation value is 0.1878, which is in the range of 0.10 – 0.39. The probability value of interest rate is greater than the 0.05 level of significance, which is 0.3116, indicating that the relationship between interest rate and gold price is insignificant. As a result, the null hypothesis is unable to be rejected. According to Abdullah et al. (2015), the research found that the price of gold and the real interest rate are inversely related.

Second, there's inflation and the gold price. The correlation value is 0.4 – 0.69, which is - 0.402776, indicating that inflation has a moderate downhill linear relationship or a moderate negative relationship with the gold price. The likelihood of an inflation rate is less than the 0.05 level of significance, which is 0.0247. As a result, the null hypothesis is rejected, indicating that inflation has a significant relationship with gold price. For example, when inflation rises, the value of currency falls, and as a result, people prefer to keep money in the form of gold. As a result, when inflation remains high for an extended period of time, gold becomes a tool for hedging against inflationary conditions. During

an inflationary period, this raises gold prices.

Then there's the exchange rate and gold price. The exchange rate has a weak positive relationship with the gold price, with a correlation value in the range of 0.10 – 0.39, or 0.3211. The exchange rate probability value is greater than the 0.05 level of significance, which is 0.0781. As a result, the null hypothesis fails to be rejected, indicating that inflation has an insignificant relationship with gold price. This result contradicts the findings of Omags (2012), who found that gold prices had a strong positive relationship with the exchange rate between the Turkish Lira and the US dollar.

Finally, there is the price of crude palm oil and gold. The crude palm oil price has also shown a positive relationship with the gold price, with a correlation value of 0.8289 in the range of 0.70 – 0.89. The crude palm oil probability value is less than the 0.05 level of significance, which is 0.000. As a result, the null hypothesis is rejected, indicating that the price of crude palm oil has a statistically significant relationship with the price of gold. During periods of high inflation, crude futures tend to be supported, whereas gold is traditionally used as an inflation hedge. Because of this positive correlation, higher oil prices have frequently coincided with higher gold prices, even though one does not have a direct impact on the other.

Finally, interest rates and exchange rates have an insignificant relationship with gold prices because the probability value is greater than the level of significance. Inflation and crude palm oil have a significant relationship based on a probability value less than 0.05. Furthermore, only exchange rate and crude palm oil has a positive relationship with gold price, the other variable has a negative relationship.

4.3 REGRESSION ANALYSIS

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	1804.465	1711.550	1.054287	0.3015
Interest Rate	35.25597	62.12837	0.567470	0.5753
Inflation	-472.2394	153.4473	-3.077534	0.0049
Exchange Rate	-597.9586	409.2395	-1.461145	0.1560
Crude Palm Oil Price (CPO)	2.465055	0.299966	8.217775	0.0000
R-squared	0.787116			
Adjusted R-squared	0.754365			
F-statistics	24.03308			
Prob (F-statistics)	0.00000			

Table 4.3

Regression Analysis

Notes: The dependent variable is the Gold Price. The independent variables are the Real Interest rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price (CPO).

REGRESSION MODEL

$y = \beta 0 + \beta 1(X1) + \beta 2(X2) + \beta 3(X3) + \beta 4(X4) + \varepsilon i$

$GPit = \beta 0 + \beta 1\ IRit - \beta 2\ INFit - \beta 3\ ERit + \beta 4\ CPOit + eit$

GPit = 1804.465 + 35.25597 IRit – 472.2394 INFit – 597.9586 ERit + 2.465055 CPOit + eit

Where:

GPit = Gold price

β1β2β3β4 = Coefficient of each independent variable BIR = Interest Rate

BINF = Inflation

BIR = Interest Rate

BINF = Inflation

BER = Exchange Rate

BCPO = Crude Palm Oil

e = Error term

i = Gold price in Malaysia

t = Year 1990 until 2020

4.4 T-TEST

H0: There is no significant relation between interest rate and gold price

HA: There is a significant relation between interest rate and gold price

H0: There is no significant relation between inflation rate and gold price

HA: There is a significant relation between inflation rate and gold price

H0: There is no significant relation between exchange rate and gold price

HA: There is a significant relation between exchange rate and gold price

H0: There is no significant relation between crude palm oil price and gold price

HA: There is a significant relation between crude palm oil price and gold price

Table 4.3.1 show the relationship between independent variable with dependent variable.

Unit Analysis	Prediction	Actual Result
Interest Rate	Negative significant	Positive and Insignificant, p-value is more than 0.05.
Inflation Rate	Positive significant	Positive and significant, p-value is less than 0.05.
Exchange Rate	Negative significant	Positive and Insignificant, p-value is more than 0.05
Crude Palm Oil	Positive significant	Positive and significant, p-value is less than 0.05

Notes: The dependent variable is the Gold Price. The independent variables are the Real Interest rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price (CPO).

The p-value for the T-test, as shown in Table 4.3 above, must be less than 5% in order for the null hypothesis, H0, to be rejected. When the null hypothesis is true, a significance level of 0.05 indicates the likelihood of rejecting it. The predictions in the table below are based on previous research by Warda et al (2014), Seemuang et al (2012), Sindhu et al (2013), and others.

The interest rate has a p-value greater than 0.05, which is 0.5753. This means that the study failed to reject H0. The results show that interest rates have a negligible impact on gold prices. The findings show that the real interest rate has no effect on the gold price.

Meanwhile, the inflation p-value is 0.0049, which is less than 0.05. This indicates that the study recommends rejecting H0. The results show that inflation has a significant positive effect on the price of gold. As a result, it is reasonable to expect that as inflation rises, so will the price of gold. As inflation rises by one percent, the gold price rises by 0.0049 percent. The p-value of the exchange rate, on the other hand, is greater than 0.05, which is 0.1560. As a result, it filed a motion to reject the null hypothesis.

Following that, the p-value of the exchange rate is greater than 0.05, which is 0.1560. This means that the study failed to reject H0. The results show that the exchange rate has a negligible effect on the price of gold. The findings show that the exchange rate has no effect on the gold price.

The price of crude palm oil is the final explanatory factor. It has a p-value less than 0.05, which equals 0.000. This indicates that the study recommends rejecting H0. The results show that inflation has a significant positive effect on the price of gold. As a result, it is reasonable to expect that as the price of crude palm oil rises, so will the price of gold. As a result, rising oil revenues boost gold market investment, causing the oil and gold price levels to rise in tandem. In this case, an increase in the price of oil leads to an increase in demand for gold.

According to these results, this study concludes that only two out of four chosen explanatory variables used in this research are significant. The variable are inflation and crude palm oil which is both independent have positively relationship with the gold price. Meanwhile, another two chosen explanatory variables which is interest rate and exchange rate are not significant. However, the beta coefficient for inflation is negative coefficient, even though the p-value has a positive coefficient. Same case to the interest rate variable, which has positive coefficient, but the p-value are insignificant.

4.3.1 TEST

H0: BIR = BINF = BER = BCPO=0

H0: BIR ≠ BINF ≠ BER ≠ BCPO≠ 0

According to table 4.3, the F-statistic value is 24.03308 and the p-value is 0.0000. To reject the null hypothesis, the p-value of the F-statistic must be less than the level of significance, which is 0.05. As a result of this study, the null hypothesis should be rejected because the value has a significance level less than 0.05. This means that the overall framework of this research has been found to be significant about the Malaysian gold price.

4.3.2 R-SQUARED & ADJUSTED R-SQUARED

According to table 4.3 above, the value of R-Squared is 0.787116, indicating that the Real Interest Rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price explain 78.71 percent of the gold price (GP) (CPO). The independent variables that are not included in the regression model explain another 21.29 percent of the gold price.

Next, from the table, adjusted R-Squared of regression analysis is 0.754365 which means 75.43 percent are being explained by the Real Interest rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price (CPO).

4.4 NORMALITY TEST

Jarque-Bera	2.151762
Probability	0.340997

Table 4.4 Normality test

H_o: Error term is normally distributed

H_A: Error term is not normally distributed

The normality test is used to determine the distribution of the error term. The data is normally distributed if the probability value of Jarque – Bera has a significance level greater than 5% and vice versa.

In table 4.4 above, the Jarque – Bera value is less than 5, which is 2.151762, and the probability is greater than 0.05, which is 0. When the probability value exceeds the 5% significance level, the null hypothesis is rejected. It comes to the conclusion that the data is normally distributed.

To summarize, the data in this study were normally distributed. It is due to the fact that it has a positive probability, and the distribution channel is flatter than normal.

4.5 MULTICOLLINEAR PROBLEM TEST

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	2929403.	85.54981	NA
INTEREST_RATE	3859.934	2.737126	1.327881
INFLATION	23546.08	5.862481	1.429337
EXCHANGE_RATE	167477.0	58.78449	1.555352
CRUDE_PALM_OIL	0.089980	10.34325	1.353368

Table 4.5 : Summary of Multicollinear Test

H0: There is multicollinearity

HA: There is no multicollinearity

Table 4.5 above shows a multicollinearity test. A simple test can be used to determine whether the regression model is multicollinear. The variance inflation factor (VIF) determines the strength of the association between variables.

The Variance of Inflation Factor (VIF) was used to test for multicollinearity in this research. A VIF greater than 10 in multicollinearity test suggest an issue with multicollinearity. Based on table 4..5 above, it shows that all of the VIFs collected were less than 10, indicating that the OLS regression model had no multicollinearity issues. Therefore, the null hypothesis rejected.

4.6 HETEROSKEDASTICITY TEST.

Null hypothesis: Homoskedasticity			
F-statistic	0.594954	Prob. F(4,26)	0.6694
Obs*R-squared	2.599535	Prob. Chi-Square(4)	0.6269
Scaled explained SS	1.099712	Prob. Chi-Square(4)	0.8943

Table 4.6: Result of Heteroskedasticity

H0: Homoskedasticity

HA: Heteroskedasticity

Table 4.6 below shows the results of heteroskedasticity test. This test is used to determine the error term, either heterogenous or homogenous. In this study, the White-test is used to test for the heteroskedasticity in regression analysis for the relationship of economic variable and gold price in Malaysia. The probability value is to be used the ‘’Obs* R-Squared’’ p-value, presented by Prob. Chi-square(4). The null hypothesis will be accepted if the value p-value is greater than 0.05.

In datasets with wide range of observed values between the biggest and lowest values, heteroskedasticity is more common. While there are many reasons for heteroskedasticity, one common explanation is that the error variance varies proportionally with the component. One of the model variables could be this factor.

The result of heteroskedasticity above shows that the Prob. Chi Square for Obs *R-Squared is 0.6269. This means that there is no heteroskedasticity problem in this regression since the value is higher than 0.05.

4.7 SUMMARY

This study examines the relationships between economic variables and gold prices in Malaysia from 1990 to 2020. Overall, the findings suggest that the gold price is influenced by a variety of factors. Economic variables such as the price of crude palm oil per tonne have a significant positive impact on the gold price because increased oil profits boost gold market investment, causing the oil and gold price levels to trend upward together. In this case, an increase in oil prices raises demand for, and thus the price of, gold. In contrast, the inflation rate, exchange rate, and interest rate have all had a significant negative impact on the gold price. This finding is supported by previous research: Abdullah and Abu Bakar (2015) discovered that the price of gold and the real interest rate are inversely related; Ciner and Lucey (2014) discovered no relationship between the inflation rate and the gold price; and Laily et al. (2017) discovered a negative relationship between the exchange rate and the gold price.

The results of this test can help to explain the relationship between the gold price and the Malaysian inflation rate, exchange rate, crude palm oil prices, and interest rates. The data in the study are normally distributed, according to the normality test. because it has a positive probability and a flat distribution channel in comparison to normal Then there's the issue of multicollinearity. As a result, the null hypothesis is rejected, and there is no heteroskedasticity in this regression because the value is greater than 0.05.

CHAPTER 5
CONCLUSION AND RECOMMENDATION

5.0 INTRODUCTION

This chapter will summarise the analysis based on the data obtained from the research study, as well as make a few recommendations based on the findings. Making recommendations serves as a road map for future research in order to improve results and ensure more precise and accurate findings.

5.1 CONCLUSION ON FINDINGS

Based on the previous chapter, this study was carried out using the E-Views software to determine the outcome and achieve the primary goal of this study. According to the findings of this study, only inflation and crude palm oil have a positive relationship with the Malaysian gold price. The values displayed are 0.0049 and 0.000, both of which are less than the significance level of 0.05. According to Choong et al. (2012), the results of their study revealed a positive relationship between inflation and gold prices, whereas Tram Qian et al (2019) discovered negative connections and minor impacts of crude oil prices on gold prices.

While the other two variables, interest rate and exchange rate, are insignificant because each variable exceeds the significance level of 0.05. According to Abdullah and Abu Bakar (2015), the examination found that the price of gold and the genuine interest rate are inversely related, and Azar (2015) found an inverse relationship between the US dollar and the exchange rate.

Aside from that, the regression analysis revealed that the value of R-Squared is 0.787116, indicating that the Real Interest Rate (IR), Exchange Rate (ER), Inflation (INF), and Crude Palm Oil Price explain 78.71 percent of the amount of the gold price (GP) (CPO). The independent variables that are not included in the regression model explain another 21.29 percent of the gold price.

In conclusion, the findings indicate that the gold price is influenced by a number of factors. The price of crude palm oil per tonne is an economic variable that has a positive and significant impact on the gold price. The inflation rate, exchange rate, and interest rate, on the other hand, have all had a significant negative impact on the gold price. The findings of this test can aid in understanding the relationship between the gold price and Malaysia's inflation rate, exchange rate, crude palm oil prices, and interest rates.

5.2 RECOMMENDATIONS

5.2.1 ADDING MORE MACROECONOMIC VARIABLES

There are a lot of variables can be used to find out the relationship with gold price. Example, Brent Crude oil prices that can broadly affect the gold price. Next, jewellery demand, gold lease rate, gross domestic product and so on. More variables should be included in order to have a better and bigger view on what are the factors influencing gold prices in Malaysia

5.2.2 DO STUDY ON OTHER COUNTRIES

Malaysia is not a country that has a high demand on gold. There a lot of other country has a high demand of gold according to their culture, tradition and so on such as Pakistan, India, China and others. India and China accounted for 57 percent of worldwide gold jewellery consumption in the fourth quarter of 2019. China's jewellery demand accounts for more than a third of all global demand. Next study should focus to other countries other than Malaysia.

5.2.3 DO A ROBUST TEST

Assumptions are central to robustness tests. Assumptions must be made in order to make sense of the results of any empirical analysis that researchers may conduct. Even if the assumptions are obviously correct, it is impossible to avoid them. The purpose of robustness tests is to determine whether the assumptions are correct, and researchers have developed a test that can determine whether the assumption is correct or whether the results of this study would change if the assumption was incorrect. Examples of robustness tests include the White test, the Hausman test, and the Breusch-Pagan test. or simply rerunning the model with an additional control variable. These are frequently presented as things that researchers will want to do in addition to the main analysis to ensure that the results are "robust."

5.3 LIMITATIONS

This study may have a limitation. This study's findings are limited to Malaysia. In addition, publicly available gold price data was used, and the periods 1990 to 2020 were examined in a study. As a result, future research can yield results for various countries with high demand for gold.

Aside from that, the most significant limitation of this research may be the lack of time, as the contradictory findings and data collections in this study necessitate extra care in order to be properly analysed. This study must ensure that the appropriate data is collected in a timely manner, as researchers must complete the literature review, apply the methodology, and analyse the results. For example, this study took longer to collect data on the gold price and crude palm oil price because the data is not as easily accessible as the data on the independent variables (IV), which are directly provided by the World Bank.

Furthermore, because the researchers are conducting research for the second time, the scope of discussion is limited in this study. Many researchers have likely had many years of experience producing academic research. However, the researchers for this study are still in their early stages of research and have gaps in certain areas. As a result, writing the appropriate literature review and other components of the research will be difficult.

5.4 SUMMARY

In summary, this chapter provides all of the explanations for the findings obtained from the analysis of this study. Furthermore, recommendations are made to provide readers with ideas on how to conduct future studies more efficiently. The chapter also recognises some limitations that occurred during the study, which will help readers understand what to avoid and what to do when conducting research.

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APPENDIX

1. Descriptive Analysis

	GOLD	INTEREST_...	INFLATION	EXCHANGE...	CRUDE_PA...
Mean	3244.088	3.535765	2.539081	3.420669	1849.629
Median	1857.457	3.748419	2.617801	3.524503	1610.000
Maximum	7390.902	11.78239	5.440782	4.300441	3219.000
Minimum	1131.999	-3.903382	-1.138702	2.504404	700.5000
Std. Dev.	2078.814	3.488910	1.465576	0.573241	729.5175
Skewness	0.562050	-0.069649	-0.076677	-0.270966	0.064302
Kurtosis	1.758980	3.030887	2.980525	1.736689	1.681862
Jarque-Bera	3.621488	0.026296	0.030867	2.440791	2.265619
Probability	0.163532	0.986938	0.984685	0.295113	0.322127
Sum	100566.7	109.6087	78.71152	106.0407	57338.50
Sum Sq. Dev.	1.30E+08	365.1749	64.43735	9.858149	15965874
Observations	31	31	31	31	31

2. Covariance Analysis

Correlation t-Statistic Probability	GOLD	INTEREST_...	INFLATION	EXCHANGE...	CRUDE_PA...
GOLD	1.000000				

INTEREST_RATE	-0.187845	1.000000			
	-1.029912	-----			
	0.3116	-----			
INFLATION	-0.402776	-0.169984	1.000000		
	-2.369734	-0.928909	-----		
	0.0247	0.3606	-----		
EXCHANGE_RATE	0.321147	-0.218935	-0.466618	1.000000	
	1.826164	-1.208317	-2.841075	-----	
	0.0781	0.2367	0.0081	-----	
CRUDE_PALM_OIL	0.828945	-0.392699	-0.158054	0.397243	1.000000
	7.980985	-2.299475	-0.861983	2.331030	-----
	0.0000	0.0289	0.3958	0.0269	-----

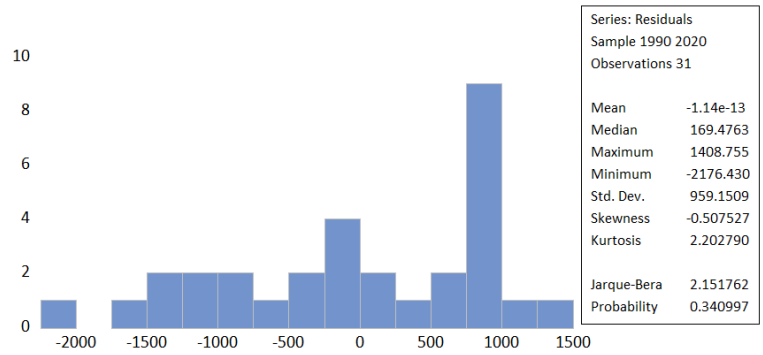
3. Regression Analysis

Dependent Variable: GOLD
Method: Least Squares
Date: 01/13/22 Time: 01:59
Sample: 1990 2020
Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1804.465	1711.550	1.054287	0.3015
INTEREST_RATE	35.25597	62.12837	0.567470	0.5753
INFLATION	-472.2394	153.4473	-3.077534	0.0049
EXCHANGE_RATE	-597.9583	409.2395	-1.461145	0.1560
CRUDE_PALM_OIL	2.465055	0.299966	8.217775	0.0000

R-squared	0.787116	Mean dependent var	3244.088
Adjusted R-squared	0.754365	S.D. dependent var	2078.814
S.E. of regression	1030.293	Akaike info criterion	16.85976
Sum squared resid	27599112	Schwarz criterion	17.09105
Log likelihood	-256.3264	Hannan-Quinn criter.	16.93516
F-statistic	24.03308	Durbin-Watson stat	0.890561
Prob(F-statistic)	0.000000		

4. Normality Test



5. Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
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EXCHANGE_RATE	167477.0	58.78449	1.555352
CRUDE_PALM_OIL	0.089980	10.34325	1.353368

6. Heteroskedasticity Test

Null hypothesis: Homoskedasticity

F-statistic	0.594954	Prob. F(4,26)	0.6694
Obs*R-squared	2.599535	Prob. Chi-Square(4)	0.6269
Scaled explained SS	1.099712	Prob. Chi-Square(4)	0.8943