

**SAFE HAVEN ASSETS AND INFLATION  
HEDGING IN THE SELECTED HIGH AND LOW  
INFLATION COUNTRIES**



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**UTMS**  
UNIVERSITI MALAYSIA SABAH

**LABUAN FACULTY OF INTERNATIONAL  
FINANCE  
UNIVERSITI MALAYSIA SABAH  
2023**

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HEDGING IN THE SELECTED HIGH AND LOW  
INFLATION COUNTRIES**

**NURUL FASYAH BINTI MOHD USSDEK**



**THIS IS SUBMITTED IN FULFILMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF  
MASTER OF FINANCE**

**LABUAN FACULTY OF INTERNATIONAL  
FINANCE  
UNIVERSITI MALAYSIA SABAH  
2023**

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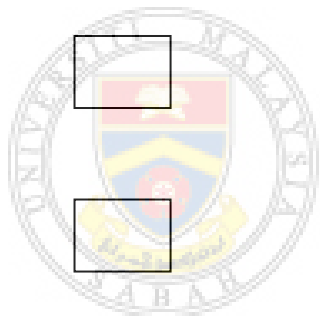
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(Dr. Suzillah Binti Sidek)  
Penyelia Utama

## DECLARATION

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

26 May 2023



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## **ACKNOWLEDGEMENT**

First and foremost, praise and thanks to Allah SWT for showering me with blessings throughout my research work, allowing me to successfully complete the research. I never predicted that I would embark on this master journey in my life.

Dr. Mohd Fahmi Bin Ghazali for giving me advice and guiding me throughout this research; Dr. Sharinah Binti Puasa for giving me the courage to further my education in master; and Dr. Suzillah Binti Sidek for always assisting me when I am in need. They have deeply inspired me with their dynamism, vision, sincerity, and motivation. They taught me the methodology for conducting the research and presenting the findings as clearly as possible. Working and studying under his/her supervision was a great privilege and honour. Thank you also to the Head of Faculty International Finance, Universiti Malaysia Sabah (UMSKAL), Labuan, for providing me with this opportunity to conduct research and for providing invaluable guidance throughout this process.

Finally, I am eternally grateful to my parents for their love, prayers, concern, and sacrifices in educating, supporting, and preparing me for the future. I would also like to thank my brothers, sister, and younger brother for their encouragement and prayers. My heartfelt gratitude goes to my friends, Kartika Sari Binti Kismanto, kak Zulaikha and kak Faezah who have supported me along the way to successfully completing this thesis.

Nurul Fasyah Binti Mohd Ussdek

26 May 2023

## ABSTRACT

Inflation become a major concern to investors. It also known as macroeconomic problem, which is reduce purchasing power and currency in an economy's countries. Since the Great Depression, investors frequently shift their portfolios into less risky and more liquid securities. Precious metals such as gold and silver rise to the top of the list of options to be consider as a hedge and a safe haven against inflation due to their miniature substitutability and close resemblance. Investing in nonferrous metal is considered to be a good way to diversify risk and hedge against inflation. Copper with a long-term industrial demand that should not be overlooked in terms of economic growth. The prices of copper are affected by supply and demand in terms of its industrial property. Besides that, this industrial metal is the most sensitive to inflation and the dollar due to its uses and economic growth. Maintaining a stable inflation rate has become one of the challenges in the macroeconomic management of the most countries. The selected countries are divided into low and high inflation. Among countries, each country has a very unique experience in terms of inflation. Also, these countries have a combination of the biggest producers and consumers of gold, silver, and copper. The analysis is carried out based on the seemingly unrelated regression (SUR) approach to estimate the ability of gold, silver, and copper metal as a hedge and safe haven against inflation in each country. This method has taken care the hidden interaction among error terms that provided information in different equations. Despite widespread acceptance of gold and silver as a hedge and safe haven assets, empirical research on these topics is limited, particularly in the context of the countries with different inflation rate. Furthermore, the importance of copper as an investment alternative should be considered by investors. The objective of this study is to identify the ability of these metals as a hedge and safe haven against high and low inflation countries. The empirical result of this study shows that gold, silver and copper in denominated local currency have a stronger hedge against high inflation. In terms of the safe haven feature, the quantile relations show that local currency, at best, tends to be strong safe haven against high inflation. In conclusion, these results demonstrate that these metals play a major role during

market slumps and inflationary episodes in each country. Therefore, holding a well-diversified portfolio could potentially provide reasonable return and protection from economic collapse.



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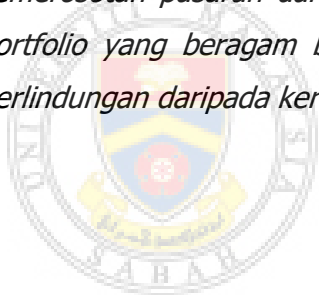


## **ABSTRAK**

### ***ASET SELAMAT DAN ASET LINDUNG INFLASI DI NEGARA-NEGARA YANG MENGALAMI INFLASI TINGGI DAN RENDAH***

*Inflasi kini menjadi masalah utama bagi pelabur. Ia juga dikenali sebagai masalah makroekonomi; yang mengurangkan kuasa beli dan menurunkan mata wang di setiap negara. Sejak berlakunya kemelesetan ekonomi, pelabur sering menukar portfolio mereka kepada sekuriti yang kurang berisiko kepada yang lebih cair atau likuid. Logam berharga seperti emas dan perak naik ke bahagian atas senarai pilihan untuk dianggap sebagai perlindungan dan pelaburan selamat terhadap inflasi kerana mempunyai ciri-ciri yang sama. Pelaburan dalam tembaga adalah salah satu cara untuk mengurangkan risiko dan boleh dijadikan sebagai lindung nilai terhadap inflasi. Tembaga adalah permintaan industri jangka panjang yang tidak boleh diabaikan dalam pertumbuhan ekonomi. Harga tembaga dipengaruhi oleh penawaran dan permintaan dalam industri. Di samping itu, tembaga ini paling sensitif kepada inflasi dan dolar kerana penggunaannya dalam pertumbuhan ekonomi. Pengesanan kadar inflasi yang stabil telah menjadi salah satu cabaran dalam pengurusan makroekonomi di setiap negara. Negara-negara yang dipilih telah dibahagikan kepada inflasi rendah dan tinggi. Negara-negara tersebut mempunyai ciri-ciri yang unik dalam inflasi dan juga merupakan gabungan pengeluar dan pengguna terbesar emas, perak, dan tembaga. Analisis ini menggunakan pendekatan Seemingly Unrelated Regression (SUR) untuk menganggarkan keupayaan emas, perak, dan tembaga sebagai lindung nilai dan perlindungan selamat terhadap inflasi di setiap negara. Kaedah ini telah menguruskan interaksi tersembunyi antara istilah ralat yang menyediakan maklumat dalam persamaan yang berbeza. Walaupun penerimaan yang meluas untuk emas dan perak sebagai aset perlindungan dan pelaburan selamat, kajian empirikal mengenai topik-topik ini adalah terhad, terutamanya dalam konteks negara-negara dengan kadar inflasi yang berbeza. Selain itu, kepentingan tembaga sebagai alternatif pelaburan perlu dipertimbangkan oleh pelabur. Kajian ini bertujuan untuk mengenal pasti keupayaan logam-logam ini sebagai perlindungan*

*dan para pelabuan selamat terhadap negara-negara dengan inflasi tinggi dan rendah. Hasil empiris kajian ini menunjukkan bahawa emas, perak dan tembaga dalam mata wang tempatan mempunyai penjagaan yang lebih kuat terhadap negara-negara dengan inflasi tinggi. Dalam hal ciri-ciri pelabuan selamat, hubungan kuantitatif menunjukkan bahawa mata wang tempatan, pada yang terbaik, cenderung untuk menjadi pelaburan selamat yang kuat terhadap inflasi yang tinggi. Kuasa ciri melindungi nilai (safe haven) berbeza mengikut keadaan pasaran dan frekuensi kembalinya. Mengenai hubungan logam-inflasi, kajian ini mendedahkan bahawa emas, perak dan tembaga, pada yang terbaik, adalah instrumen pelindung yang paling layak terhadap inflasi. Kajian ini mendapati bahawa denominasi mata wang yang berbeza, kadar inflasi yang berlainan dan struktur ciri-ciri negara berbeza adalah penting dalam menentukan kesan pelindung nilai (hedge) dan melindungi nilai (safe haven). Kesimpulannya, hasil ini menunjukkan bahawa logam-logam ini memainkan peranan utama semasa kemerosotan pasaran dan episod inflasi di setiap negara. Oleh itu, mengekalkan portfolio yang beragam boleh memberikan pengembalian yang munasabah dan perlindungan daripada keruntuhan ekonomi.*



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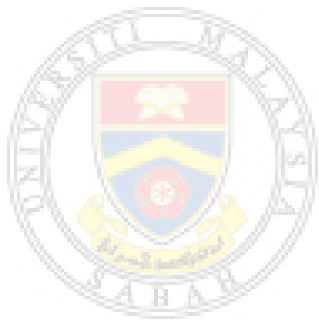


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## LIST OF ABBREVIATION

<b>APGARCH</b>	-	Asymmetric Power GARCH
<b>ARDL</b>	-	Autoregressive Distributed Lag
<b>BRICs</b>	-	Brazil, Russia, India and China
<b>CLRM</b>	-	Classical Linear Regression Model
<b>COMEX</b>	-	Commodity Exchange
<b>CORR</b>	-	Correlation
<b>COVID</b>	-	Coronavirus Disease
<b>CPI</b>	-	Consumer Price Index
<b>CV</b>	-	Coefficient of Variation
<b>EGARCH</b>	-	Exponential General Autoregression Conditional
<b>EU</b>	-	European Union
<b>FGLS</b>	-	Feasible Generalized Least Squares
<b>GARCH</b>	-	Generalized Autoregressive Conditional Heteroskedasticity
<b>GLS</b>	-	Generalized Least Squares
<b>GSCI</b>	-	Goldman Sachs Commodity Index
<b>IMF</b>	-	International Monetary Funds
<b>J-B</b>	-	Jarque Brea
<b>LME</b>	-	London Metal Exchange
<b>MS-VECM</b>	-	Markov Switching Vector Error Correction Model
<b>OECD</b>	-	Organisation for Economic Co-operation and Development
<b>OLS</b>	-	Ordinary Least Squares
<b>QE</b>	-	Quantitative Easing
<b>RRBs</b>	-	Real Return Bonds
<b>S&amp;P 500</b>	-	Standard & Poor's 500
<b>SD</b>	-	Standard Deviation
<b>SE</b>	-	Standard Error
<b>SUR</b>	-	Seemingly Unrelated Regression
<b>TIPs</b>	-	Treasury Inflation Protected Securities

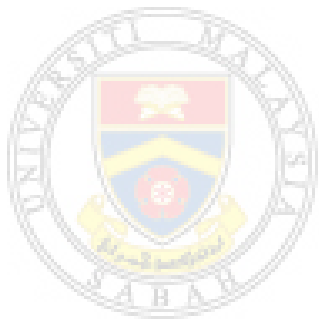
<b>UK</b>	-	United Kingdom
<b>US</b>	-	United States
<b>VAR</b>	-	Vector Autoregressive
<b>VECM</b>	-	Vector Error Correction Model
<b>WB</b>	-	World Bank
<b>WGC</b>	-	World Gold Council



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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

*"The beauty of gold is it loves bad news" – Harry' Rabbit Angstrom.*

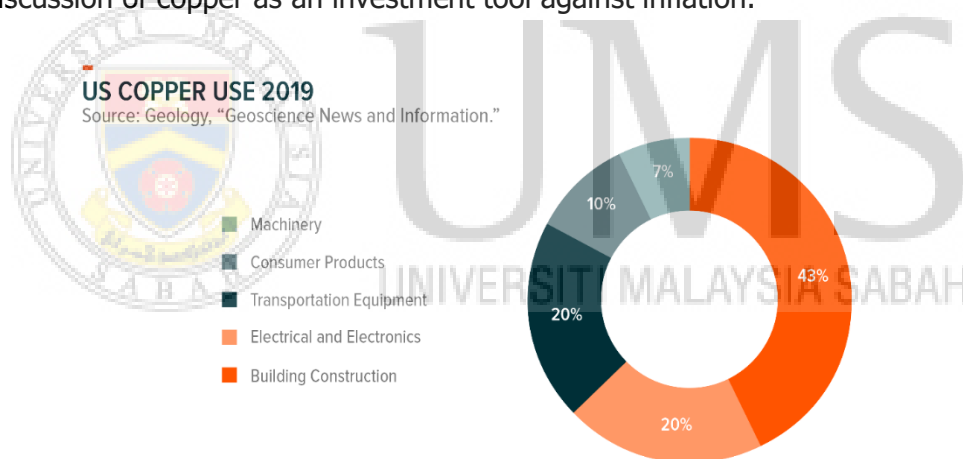
Investors frequently shift their portfolios into less risky and more liquid securities during recessions. Furthermore, a depreciation of the national currency and a fall in interest rates have an impact on investors' portfolios. Investors need gold and silver to protect their portfolios<sup>1</sup>. In times of high inflation, for example, these metals have a higher potential for inflation hedge than an equity portfolio (McCown & Zimmerman, 2007). According to Ghazali (2016), when returns from equities, bonds, and real estate do not adequately compensate for inflation risk, demand for gold and other alternative assets such as commodities is expected to rise. As a result, gold and silver have long been regarded as a safe haven against high inflation and a weak dollar (Economist, 2009).

One of the most widely held beliefs about gold, according to Erb and Hervey (2013), is that it is an inflation hedge, which means that inflation is a key driver of gold returns, which means that gold returns are equal to the rate of inflation. Silver, on the other hand, is similar to gold in that it has a high value (Ciner, 2001), is a symbol of good fortune ( Xu et al., 2019), and is regarded as a close substitute for gold (Lucey & Tully, 2006). Silver and gold both pursue arbitrage and low-risk spread trading characteristics due to their miniature substitutability and close resemblance.

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<sup>1</sup> Gold and silver are regarded as inflation hedges.

Investing in nonferrous metals is considered to be a good way to diversify risk and hedge against inflation<sup>2</sup>. Copper is a nonferrous metal with long-term industrial demand that should not be overlooked in terms of economic growth. For instance, 63% of the copper utilized in the US was for cyclically related industrial uses, such as building construction and transportation equipment. On the other hand, China's quick development and expanding infrastructure projects have a big impact on copper consumption. China's investing in commodities, such as copper, can serve as a reliable inflation hedge since they are vital to the global supply chain<sup>3</sup>. Figure 1.1 and 1.2 shows the single largest use of copper is electronic products. On the positive side from a copper demand perspective, global demand for electronic goods is likely to continue to grow<sup>4</sup>. Furthermore, investors have invested in copper as a safe haven<sup>5</sup>. As a result, investing in a nonferrous metal can offset the loss of purchasing power caused by inflation while also reducing investment volatility. However, as far as the author is aware, there has been little discussion of copper as an investment tool against inflation.



**Figure 1.1 : The United States Copper Demand**

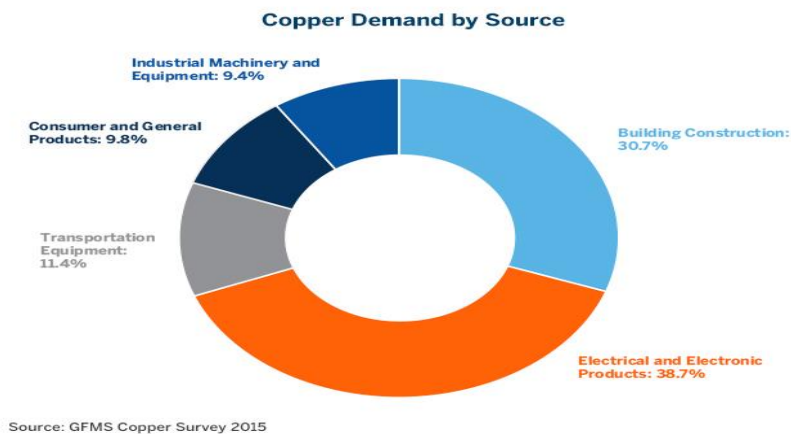
Source : Geology, "Geoscience News and Information".

<sup>2</sup> Wealth Simple: What are Commodities.

<sup>3</sup> Money USnews: What to Know About Copper Investing, 2021.

<sup>4</sup> Cmegroup: Copper, Leading Indicator for Growth, 2017.

<sup>5</sup> Copper has become a recognized assets class within investors' portfolios as a means to diversify risks such as stock market fluctuations or inflation (Guo, 2018).

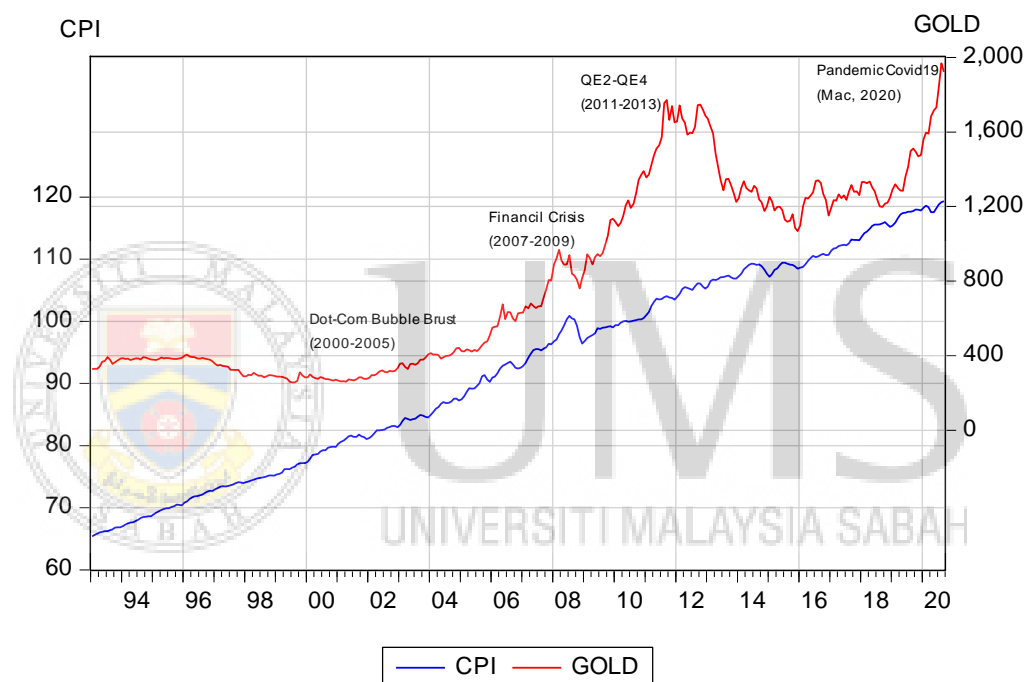


**Figure 1.2 : The China Copper Demand.**  
 Source : GFMS Copper Survey 2015

Furthermore, these metals were chosen as candidates because previous research (Baur & McDermott, 2010; Bredin, Conlon, & Poti, 2015; Dee, Li, & Zheng, 2013; Ghazali & Abdullah, 2022; Li & Lucey, 2017; Shahbaz, Tahir, Ali, & Rehman, 2014) and financial media indicate that they can serve as financial safe haven. Due to the lack of a theoretical model, the definition of safe haven assets can be contentious. During periods of severe market turbulence, a safe haven is defined as an investment instrument with a zero or negative correlation with other assets. This definition makes sense because a safe haven can assist investors in developing a portfolio that reduces negative market risk during a crisis (Baur & Lucey, 2010). The gains from negative market risk, inflation, and currency depreciation are offset by the rise in metal prices (Iqbal, 2017). Global financial markets have recently faced enormous risks, in contrast to previous financial crises. The current crisis' underlying forces are more complicated. The COVID-19<sup>6</sup> outbreak in early 2020 was regarded as a "one-time" pandemic (Gates, 2020). As a result of the crisis, equity markets around the world have increased risks and changed market linkages (Zhang, Hu, & Ji, 2020). In the face of significant losses, practitioners and researchers are looking for hedging opportunities and safe havens once more.

<sup>6</sup> The COVID-19 pandemic resulted in the infection of 5,657,529 people and 356,254 deaths in 216 countries and territories as of May 29, 2020 (WHO, 2020).

The historical fluctuations in the prices of gold, silver, and copper can be used to assess their effectiveness as a hedge and safe haven against inflation. Figures 1.3 until 1.5 depict the evolution of gold, silver, copper, and the consumer price index (CPI). Figures 1.3 and 1.4 show how volatile gold and silver prices have been in the United States. Gold and silver markets soared after the dot-com and internet bubbles burst in 2001. Since the outbreak of the financial crisis in 2007, they have gradually risen significantly. Gold and silver prices peaked in August 2011 due to the second and fourth quantitative easing programmes (QE2-QE4)<sup>7</sup>. The pandemic COVID -19 caused gold and silver prices to rise at the start of 2020. In the historical price series, gold and silver show a clear correlation.



**Figure 1.3 : Gold Prices and CPI from January 1993 until December 2020 (Monthly Data).**

<sup>7</sup> A form of unconventional monetary policy in which a central bank purchases longer-term security from the open market in order to increase the money supply and encourage lending and investment.