

**RETHINKING OF FINANCE STABILITY : GOLD, FIAT MONEY AND ANTI-  
CRYPTO MONEY POLICY PUZZLE IMPACT IN STABILITY OF  
INTERNAL VALUE**

**Suryaning Bawono, Jember University, Indonesia**  
**Silvi Asna Prestianawati, Brawijaya University, Indonesia**

**ABSTRACT**

We are attempting to review the stability of the internal exchange rates of paper money and gold and to examine the effects of the mysterious anti-crypto money policy. We used the ordinary least squares quantitative method to compare the resilience of the internal values of gold and USD against inflation and the charts to see the impact of anti-crypto money policy along with the resilience of gold and USD against the turbulence of internal exchange rate stability. When viewed from R-squared and Adjusted R-squared inflation can be said no significant effect on world crude oil prices with USD as a means of payment. So the world oil turbulence is influenced by another variable that is more significant than inflation. This paper has contribution to the government in monetary side to derive the digital money regulation in order to secure the digital transaction.

Keywords: internal value of money; transformation of money; crypto money

## Introduction

Money has been transformed since 9000 BC. From of money in the form of agricultural goods and farms transformed into coins. The Egyptians used gold, silver and copper as money since 2500 BC. Gold and silver coin money began to be used since 700 BC by the Turks and followed china using bronze as money since 600 BC (Abner,2016;Weatherford,1997;Hari, 1996;Jones,1994). In 117 BC to 700 AD over 20% of the world's population under Roman control and in those days, Roman money dominated the world's currency. Roman currency is based on the value of the metal used to make the metal coins. The metals used are copper, silver and gold (Hari,1996; Jones,1994; Münkler,2007).

China uses paper from mulberry bark as a raw material of paper money replacing metal since 1 M which was then adopted by the kingdoms in Europe since the 13th century. So it can be said the transformation of coins into paper money since 1 M (Weatherford, 1997; Persson & Sharp, 2015). Initially the banknotes were valued on the basis of the gold reserves owned by the issuing country of paper money. So it can be said that the paper money at that time was a representative of the gold to be paid by the government to the holder of the paper money (Weatherford, 1997) (Persson & Sharp, 2015).The shift in the value of banknotes originally representative of gold shifted as a product called currency by using legislation as a legitimate payment instrument for all its citizens, spearheaded by America in 1971 and since then, the US Government has not used gold as an underlying of value USD (Meltzer, 2003).

The needs of money mobility of electronic money in the form of information on the transfer of savings accounts introduced by Western Union in 1860 called electronic funds transfer (EFT) developed into credit cards In 1886 introduced by Edward Bellamy, which became the embryo of plastic money. In 1960, the Bank of America issued Visa as the first credit card. The use of cards as a means of payment continues to grow to date but has not replaced the currency as a product. Only, as a representative of the currency and currently in transactions between countries, plastic money serves only as a means of payment using a currency exchange rate of a particular currency when making payments at prices based on other currencies. (Smith, 2018; Jones, 2014). Crypto money or the first digital money was born in 2009 that is bitcoin. Bitcoin is believed to be made by an anonymous group disguised as a man who has the name Nakamotō satoshi. Digital today is developing with various types of crypto money. Digital money allows people to transact around the world without any significant transaction costs. This means no foreign exchange rate, no taxes and anonymous. So ideally crypto money is more efficient in terms of transaction costs. (Peterson, 2017; Narayanan, 2016).

Since thousands of years ago before 1971, gold made the world's main exchange of commodities in the form of physical gold and represented by paper money. But after 1971, gold is nothing more than a valuable item as a store of wealth or investment commodities with prices that tend to rise. However, gold is still generally accepted worldwide like the USD. Is the USD generally accepted in international trade better than gold. and since 2009, was born an alternative payment tool that is crypto money pioneered by data packets called bitcoin and various expectations of countries in the world will money crypto that leads to the assumption of money crypto as economic threat.

Those changes and development in money brings the changes in business and finance in emerging markets. Crypto money is a final stage of money transformation that is part of a group of synthetic money into a commodity that can function as money digitally. The pros and cons of the crypto money policy have resulted in the use of crypto money collected in pro countries such as Japan. As a result, Japan is currently become the crypto money market, especially

Bitcoin. Synthetic money strengthens the role of e-commerce and financial technology with inter-country transactions as a means of payment such as electronic money (electronic money) which is increasingly booming in developing countries such as Indonesia, Thailand and Malaysia and crypto money become a new investment commodity In Japan.

This study aims to reveal the stability of the internal value of money or the exchange rate of money for goods from any form of money transformation, so this research will help people to decide which money they should choose to do profitable investment. This result also help government to make alternative policy consideration for countries in the world especially developing countries in deciding the form of money they should invest.

## Literature Review

Mentioned below is the summarizing of the shift of money based on the history we put forward in the previous discussion by using flow chat as follows:

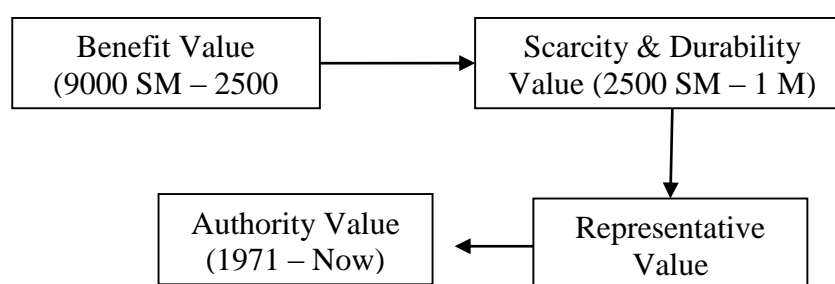


Figure 1. Flowchart 1 : The money

Source: (Weatherford,1997; Sharp,2015; Strachan,2004; Friedman & Schwartz, 1998; Meltzer, 2003)

There is a shift in the value of money that affects the stability of the exchange rate especially the internal exchange rate of money. However, there were phenomena before 1971, after 1971 and 2009 such as gold is still universally accepted, World Bank notes of any currency not backed by gold, crypto money becomes a global payment tool alternative. The stability of the value of money on goods or internal value of money has an impact on the efficiency of the real sector. People has tendency to look for a medium of exchange with continuous exchange rate stability. Money is transformed to meet the stability of money and ease the transfer of money itself with more cost efficient (Hevia & Nicolini, 2018; Nchora & Adamec,2016; Mosler & Silipo, 2017; Ningxi & Wang, 2006; Kim, 2017; Kim & Mehrotra, 2017).

Three alternatives mean of payment of the world of gold, fiat money and crypto money should not be dominated by fiat money alone. Like the very dominating USD in international trade. However, the fluctuation of the dollar in its internal exchange rate, hung the USD user countries in its International transactions on American financial conditions that are not guaranteed economic stability as examples of subprime mortgage events in 2008 in the USA. The global financial crisis diminishes stability and leads to more crisis (Tatiana et al., 2015). Continuing the flowchart 1, the form of money transformation tend to be digital with flowchart as follows:

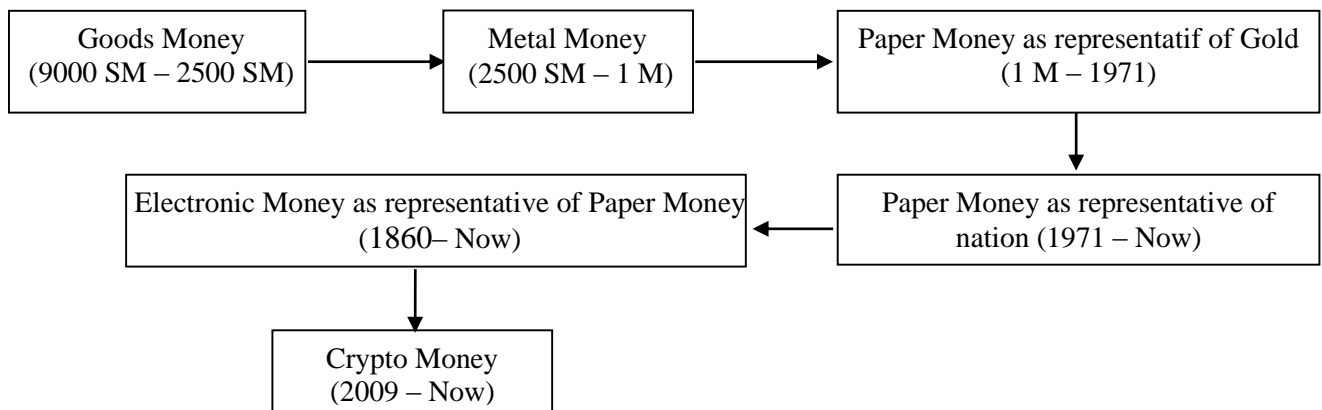


Figure 2. Flowchart 2: The money transformation

Source: Weatherford, 1997; Persson & Sharp, 2015; Strachan, 2004; Friedman & Schwartz, 1998; Meltzer, 2003; Smith, 2018; Jones, 2014; Peterson, 2017; Narayanan & Goldfeder, 2016; Andolfatto & Waller, 2016; Dwyer, 2015.

The increasingly digital change of money refers to the new threat of digital and anonymous criminals of money users who are potentially abused in crime. It becomes a logical reason for anti-crypto Money policy (Orrell & Chlupaty, 2016; Vigna & Casey, 2015; Smith, 2018).

### Research Method

Ordinary least square method is a method that minimizes errors due to model selection parameter modeling. Using the least squares method, the sum of squared differences between the actual output and the estimated value is minimized by the gradient descent. Gradient descent is the first-order optimization algorithm to find the minimum function (Bilginol, 2015). Ordinary Least Square in this paper, is used to determine the resilience of gold and USD against inflation by using crude oil prices as a neutral value. By looking at the relationship of inflation to oil prices by using USD and gold in maintaining the stability of the internal exchange rate. With the equation as follows :

$$\text{Oil Price in USD} = \beta_0 + \beta_1 \text{ Inflation} + e \dots\dots\dots (\text{Equation 1})$$

$$\text{Oil Price in Gold} = \beta_0 + \beta_1 \text{ Inflation} + e \dots\dots\dots (\text{Equation 2})$$

The resistance or resistance of the medium to inflation and the ability of the exchange in maintaining its internal exchange rate can be measured by comparing the graph and looking at the trends, waves and normal lines formed.

### Result and Discussion

This paper is focusing on the stability of money by looking at the stability of oil prices by using USD as a means of payment and comparing with oil prices by using gold as a means of payment.

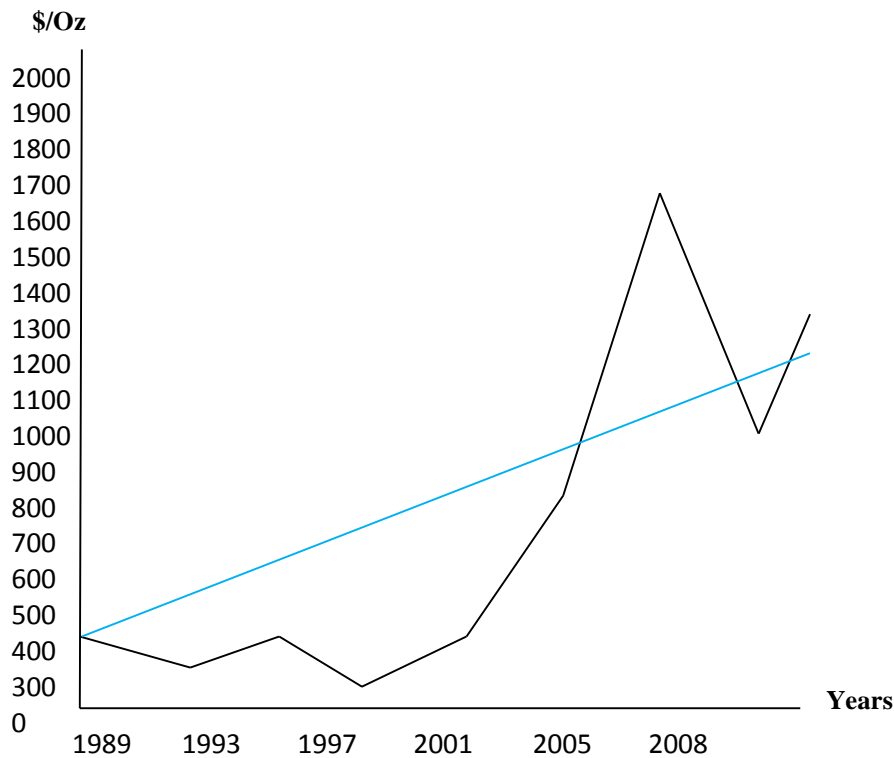


Figure 3. Graph 1: USD VS Gold (Paper Money VS Metal Money)  
Source: World Gold Council (data is processed)

Based on data from 1989 to 2017 in graph 1, the trend shows the blue line that the USD against gold tends to decrease in value is indicated by the upward trend line or in other words gold tends to strengthen its exchange rate compared to paper money (which is represented USD) from year to year.

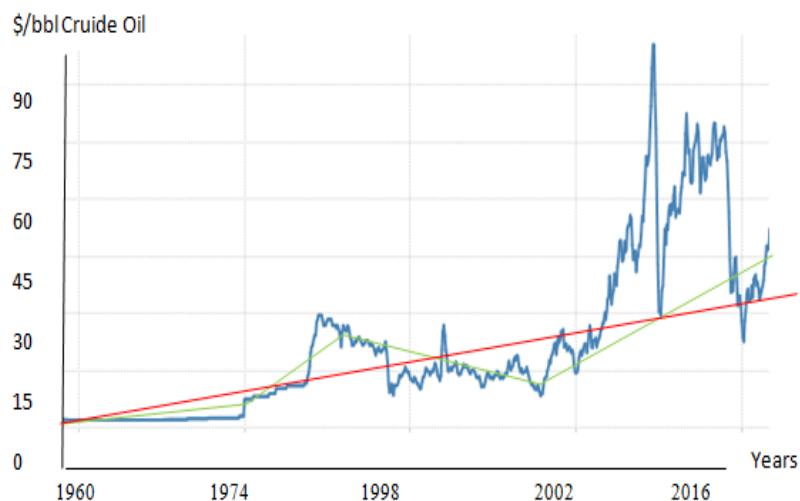


Figure 4. Graph 2 : USD VS Oil (Paper Money VS Goods)  
Source: World Gold Council (data is processed)

Based on the graph above data can be seen there is a trend upheaval shown by the green trend line and in the long run 1960 up to 2017 has a tendency that USD against oil exchange rate

continues to weaken is shown by the red trend line. With significant price fluctuations shown by the green trend line.

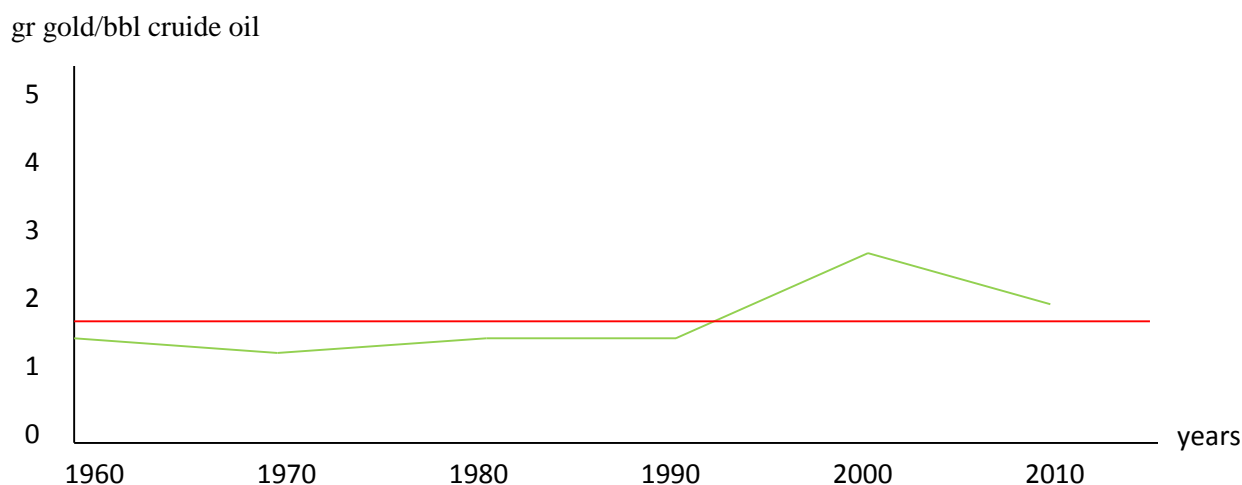


Figure 5. Graph 3: Gold Vs Crude Oil (Metal Money Vs Goods)  
Source: World Gold Council (data is processed)

Based on the green trend line charts seen oil price turmoil against gold is more stable compared with the crude oil price upsurge against USD (see graph 2). And if oil prices using gold from 1960 to 2017 averaged a normal line where price fluctuations tend to approach the normal line of 1.9445 gr gold / bbl crude oil. This proves that when paper money becomes a representative of gold will have an exchange rate that tends to be stable and anti-inflation in which other currencies that do not have an underlying of gold will be eroded naturally by the currency that has under lying of gold.

Table 1: Bitcoin Price Data for USD, Gold, Crude Oil

Years	USD/Bitcoin	USD/gr Gold	gr Gold/bitcoin	USD/bbl Crude Oil	bbl Crude oil/bitcoin
2009	0.0001	32.443	0	64.02	0
2010	0.07	39.378	0.002	79.04	0.000885619
2011	15	45.441	0.330	93.67	0.160136243
2012	7	48.701	0.144	95.27	0.073478498
2013	100	41.354	2.418	94.83	1.05447186
2014	600	37.593	15.960	88.90	6.74892389
2015	220	38.133	5.769	51.86	4.242319153
2016	750	42.709	17.561	45.53	16.47302701
2017	3451	41.564	83.029	54.28	63.57940225

Source : World Bank,bitcoin.com

From the table 1 data can be seen that the exchange rate of bitcoin to USD, Gold and oil tends to strengthen despite the shock of 2015. But back to the original trend that is bullish (Strong). However, with the incidence of bitcoin that tends to be new and not yet formed in the bitcoin value graph, making bitcoin has not yet shown its natural exchange rate so that the crypto money represented by bitcoin in this paper is in addition to information as well as a reinforcement of the natural exchange rate in each shift in the value of money in the history of world money and the value of money based on the law or even the world authority can not stem the trend of crypto money in the short term that has the value of the foundation is scarcity

(scarcity). World anti-crypto money policy becomes a puzzle, whether it only creates a shock or changes the crypto money trend.

Table 2. Estimation Result of oil price with USD and oil price with gold as a means of payment

No	Variable	Adjusted R-squared	R-squared
1	Oil price with USD	-0.018140	0.000042
2	Oil price with gold	0.406963	0.417553

When viewed from R-squared and Adjusted R - squared inflation can be concluded that no significant effect on world crude oil prices with USD as a means of payment. So the world oil turbulence is influenced by another variable that is more significant than inflation. The price of world crude oil with gold or bbl crude oil versus gold also has no significant effect. But when viewed from the value of R-squarednya, world oil prices in grams of gold have a closer relationship with world oil prices in USD. This can be caused by the gold price which tends to increase over time so that it can become a buffer of internal exchange rate stability if gold becomes the underlying value of paper money or fiat money.

## Conclusion

This study only focuses on comparing the internal exchange rate of money from each form of money transformation (gold, fiat and crypto) to oil and comparing exchange rates from each form of money transformation so that the form of money transformation with the most stable and strongest internal exchange rate is identified.

Gold tends to be stronger in maintaining the stability its international exchange rate against world oil than USD as a representative of fiat money. In addition, the power of the world's authority in the form of anti-crypto money policy remains a mystery whether it can change the direction of the crypto money trend from bullish to bearish or just create shock. However, in the short term 2009 to 2017 there has been no change in the crypto money trend even though countries implementing anti-crypto money policies continue to grow in number by 2017.

The focus of research in the field of money transformation can be developed in digital-based global financial system research because the global financial system is also transformed to follow the transformation of money from telegram ETFs that continue to transform into CBC-based ETFs (Computer base computers) as a new research opportunity.

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