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# Gold as an investment alternative

## Bachelor Thesis

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<p>This bachelor thesis aims to inform the reader regarding the characteristics of gold as an investment alternative. The core of the research will be directed towards assessing the value gold provides to an investment portfolio. In the beginning paragraphs, the reader is introduced to the way the yellow metal has been used as money in the past. This short introduction is essential in order to gain a better understanding of how gold performs as a commodity.</p> <p>Moreover, the fundamentals that determine gold's price will be examined. An informed investment decision can only be made when the determinants of a product's price are studied meticulously. The writer's intention is to introduce the potential investor and the financially curious reader alike to the intricacies of the gold market. The benefits of gold ownership as well as its drawbacks are mentioned and it is up to the reader to decide whether gold is indeed worth it. The essay below does not provide investment advice neither in favor nor against gold ownership. Instead, data and expertise have been presented in order to offer an objective view on the matter.</p> <p>Gold is assumed to perform exceptionally in periods of financial disaster and turmoil. The research conducted confirms indeed that gold investors can potentially protect their wealth satisfactorily under such circumstances. On the other hand, investments in gold might not be a desired option for more aggressive and speculative market participants. Gold's relationship with its two investment competitors, cash and stocks is examined. In today's economic environment of close to zero interest rates, gold seems to be an attractive way for wealth protection. On the other hand, gold's returns seem to be quite inferior to the stock market in periods of economic growth. Its volatility though is significantly lower providing a sufficient hedge in times of recession.</p> <p>The role of central banks is also examined in the essay. National governments have played a profound role in the gold market. The degree to which their buying and selling activities affect the market is researched in a separate chapter. Lastly, a projection is made regarding the short-term prospects of gold as uncertainty seems to be the only constant in financial affairs over the last few years.</p>	
Keywords	

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## 1 Introduction

The purpose of the research conducted is to evaluate the necessity of gold in the structure of a well-balanced investment portfolio. Prominent economists and renowned fund managers have debated over decades about the effect of gold on the returns realized by investors. The main consideration of the report would be to examine the factors that determine the price of gold, the means via which an investor can enter the market, and hopefully reach a conclusion as to if and when the metal could be considered a viable investment alternative.

Gold has fascinated humanity since antiquity. Serving both as a means of exchange and as an indication of wealth and status, the yellow metal has been a profound factor in economic affairs for millennia. Its unique status as a universal standard of wealth is remarkably retained until the present time and people around the globe still regard it as the ultimate store of value. The degree to which this approach to gold is emotional or justified by strictly economic criteria is debatable. The purpose of the research undertaken in this essay is to explore the intricacies of the gold market and reach a conclusion as to whether an investor should consider including it in their portfolio.

What distinguishes gold from other metals is its dual nature as a commodity and a means of exchange. An accurate forecast of its price is an immensely arduous task as a lot of factors have to be taken into account. On the one hand, gold is a commodity and therefore its performance on the market is determined by supply-and-demand dynamics that are present in any other product or service. On the other hand, gold is still accumulated by investors in times of financial turbulence in order to store wealth and not just for ornament purposes. That unique trait of gold creates new dynamics in the determination of its price, which are more of a macro-economic nature rather than of microeconomic elements such as supply and demand.

Considering the above, an investor should be well informed before making an investment decision as due diligence is always rewarded in financial markets. Despite the fact that the main focus of this research is to assess the traits of gold as an investment alternative, the first chapter of the essay will provide the reader an overview of how gold has come to be used as money. The chemical characteristics that have made gold uniquely suitable as a means of exchange and a historically significant gold standard regime will be shortly discussed.

## 2 Gold as money

### 2.1 Gold as a means of exchange

The aim of this chapter is to intrigue the reader as to why, of all the elements on earth, gold has been used as a means of exchange throughout human history. A proper understanding of the traits that made gold popular as money will be helpful in order to appreciate the role it plays in today's investment environment. Its chemical characteristics are what have made the yellow metal the most prevalent means of exchange since antiquity. Its durability and malleability are the two key features that made gold a practical and universally accepted form of money.

One of the most prominent political figures of the 20th century, Charles De Gaulle, described gold's abovementioned traits with the eloquent quote given below:

"Indeed, there can be no other criterion, no other standard, than gold. Yes, gold, which never changes, which can be shaped into ingots, bars, coins, which has no nationality and which is eternally and universally accepted as the unalterable fiduciary value par excellence". (Kosares, 2012).

One element has to satisfy three conditions in order to qualify as money: medium of exchange, store of value and unit of account. Under a regime, in which gold is used as money in economic transactions, the yellow metal has all three characteristics. In today's paper money financial system, its usefulness is restricted as being a store of value. Even the latter though is questioned by gold critics and whether gold does indeed serve value storage purposes is going to be discussed in detail in later chapters. The reason why gold has been used as money is mostly attributed to its unique physical characteristics. According to the distinguished professor of chemistry at University College London Andrea Sella, gold is from a chemical point of view the ideal substance to be used as money. Gases, halogens and liquids such as helium, fluorine and mercury are eliminated for obvious reasons. (Rickards, 2016)

In terms of practicality, silver and gold are the two most likely candidates. Silver has also been used as a means of exchange in various historic periods but gold outweighs it main

competitor when it comes to aesthetic superiority. Even though beauty is not a condition for money, it has played its role in making gold the dominant means of exchange.

Lastly, gold is less vulnerable than silver when exposed to high temperatures for an extended period of time. Qualitative observations for gold show insignificant corrosion relative to silver. (JANZ, CONTE and NEUENSCHWANDER, 1963)

As we have seen above, gold has been used as a means of exchange in the past. In today's financial environment it is merely a commodity and an investment alternative. During a significant historic period, its usefulness lay in-between the two realms as a quasi-currency under the regime known as the gold standard. The purpose of the following paragraphs is to introduce the reader to the rules that governed the monetary system under a gold standard regime. There have been numerous variations of such a system, some of which are going to be shortly discussed below. Even though this essay is mostly directed to the investor and thus the examination of gold as an investment alternative will be the core of the research, a brief introduction into how the yellow metal has been used in a macroeconomic perspective would provide necessary insight regarding the complexities of the matter.

## 2.2 The gold standard regime

Under a gold standard regime, the supply of money available in an economy is tied to the amount of gold reserves. The argumentation in favour of such an arrangement is financial stability and the prevention of politically biased monetary policy. Linking the growth of a currency to a commodity that is scarce and extremely valuable is assumed to achieve monetary stability and long-term growth. However, as will be seen below, political conflicts and military collusion can potentially lead to the demise of such a system. When the gold standard regime is discussed among economists and scholars the system they most likely refer to is the classical gold standard, which lasted from 1870 until 1914. Historically, this has been a period of British global hegemony and overall economic and political stability. The regime's demise is largely attributed to the outbreak of World War I in 1914 when the belligerents abandoned the gold's convertibility in order to fund the war without restriction. The US emerged as the dominant world power after the war, retaining gold convertibility until 1971 when President Richard Nixon demonetized gold. This political decision was critical as it introduced the world to today's paper

money regime, in which the dollar is considered the world's reserve currency. Whether the dollar standard, as has been named, is a system that can provide the stability needed in the financial system will be further discussed in a following chapter dedicated to the asset preservation virtues of gold.

At this point, it would be useful to represent data that examines the assumed role of the classical gold standard as a price stabilizer. The truth is that the findings are quite unfavourable and that the contemporaries of the gold standard regime most likely had a more negative view towards the regime than the nostalgic sentiment of modern gold-standard advocates. According to Harvard Professor Richard N. Cooper, the single most important objective of price stability was not attained under the classical gold standard regime. As it can be seen from the figure below, deflation was prevalent from 1880-1914. (Holmes, Faber and Katz, 2013).

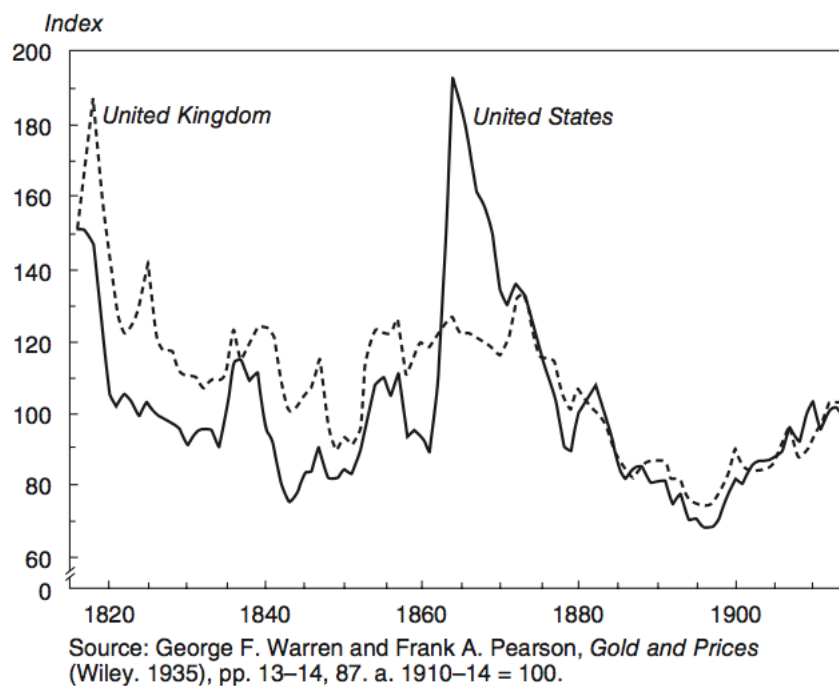


Figure 1: the classical gold standard (Holmes, Faber and Katz, 2013)

Despite the catastrophic consequences of politically biased monetary policy by central banks in the last few years, a return to a variation of the gold standard regime seems quite unlikely. After this short introduction to gold's role as money, the rest of the research is dedicated to the role of gold in the build-up of an investment portfolio. When an accurate forecast for the price of a product or service is attempted, a thorough examination of the supply and demand dynamics is indispensable. Gold is no exception to this rule.



### 3 Fundamentals

A comprehensive understanding of the supply-and-demand fundamentals is imperative in order to make an informed investment decision. In this section the researcher will attempt to interpret the data concerning the supply-and-demand relationship and thus reach a conclusion as to whether the fundamentals indicate a strong or weak price case for the yellow metal in the future. The demand side of the fundamentals table consists of jewellery, technological equipment and investment demand. Since the focus of the research is on gold as an investment alternative, more attention will be paid towards the accumulation for investment purposes.

#### 3.1 Investment demand

The three main sources of gold demand for investment purposes are coins, bars and exchange-traded funds (ETFs). The following table from the World Gold council illustrates key demand data from 2010 till 2017. (Gold, 2018)

Table 1: Gold demand (Gold, 2018)

	2010	2011	2012	2013	2014	2015	2016	2017	Year-on-year % change
<b>Jewellery</b>	2,055.0	2,097.3	2,138.7	2,701.9	2,498.8	2,411.6	2,053.6	2,135.5	▲ 4
<b>Technology</b>	460.5	428.6	381.3	355.9	348.7	332.0	323.4	332.8	▲ 3
Electronics	326.6	316.1	288.3	279.2	277.5	262.1	255.6	265.3	▲ 4
Other Industrial	88.3	76.3	64.6	53.7	51.2	51.0	49.8	50.6	▲ 2
Dentistry	45.6	36.2	28.4	23.0	19.9	18.9	18.0	16.8	▼ -6
<b>Investment</b>	1,633.1	1,732.5	1,613.8	810.9	867.8	949.6	1,595.5	1,231.9	▼ -23
Total bar and coin demand	1,203.6	1,500.4	1,307.7	1,722.9	1,052.1	1,074.7	1,048.7	1,029.2	▼ -2
Physical Bar demand	920.6	1,188.3	1,011.9	1,352.1	767.8	775.3	776.3	770.9	▼ -1
Official Coin	195.8	228.1	185.4	269.8	204.8	224.3	207.2	186.9	▼ -10
Medals/Imitation Coin	87.2	84.1	110.4	101.1	79.5	75.1	65.2	71.3	▲ 9
ETFs & similar products*	429.6	232.0	306.1	-912.0	-184.3	-125.1	546.8	202.8	▼ -63
<b>Central banks &amp; other inst.</b>	79.2	480.8	569.3	623.8	583.9	576.5	389.8	371.4	▼ -5
<b>Gold demand</b>	4,227.7	4,739.2	4,703.1	4,492.6	4,299.2	4,269.8	4,362.2	4,071.7	▼ -7
<b>LBMA Gold Price, US\$/oz</b>	1,224.5	1,571.5	1,669.0	1,411.2	1,266.4	1,160.1	1,250.8	1,257.2	▲ 1

It is evident from the table shown above that gold demand increased substantially in 2011. The ongoing debt crisis in Europe and concerns about the stability of the USD were the major forces behind this key trend change. On the other hand, demand dwindles when signs of recovery in the economy are present. That could possibly explain the decrease of quantity demanded in 2017.

Moreover, official sector purchases have been playing an ever-increasing role in the demand side of the equation. More on the crucial role of central banks in the gold market will be discussed in a following chapter.

## 3.2 Supply

The total supply of gold consists of mining, recycled scrap, producer hedging and central bank sales. The first two are the most traditional sources of the yellow metal, while the latter two have been added to the demand side quite recently.

### 3.2.1 Mining

Gold's value lies in its scarcity and as a result the process of extracting gold is time-consuming and financially exhausting for mining companies. In this chapter, we will attempt to explore the dynamics of the mining business and how these affect its market price. According to Pierre Lassonde, chairman of Franco Nevada, a lack of significant discoveries is about to bring an upward pressure on the yellow metal. A lack of major discoveries is assumed to exert further upward pressure on gold as the mining process is going to become even more challenging. (Holmes, Faber and Katz, 2013).

Mining companies add to the supply via direct and forward sales. The former refers to sales at current market prices while the latter to sales agreed in advanced at a pre-determined price for gold not yet produced. The process of selling in advance, called hedging, is advantageous for miners in bear periods when the price is expected to decline. In a scenario where the seller has agreed with a buyer for a sale at 1000USD/ounce in one year and when the time comes for the transaction to be completed the price has declined to 900USD/ounce the seller has effectively profited 100USD/ounce. On the contrary, if the price has reached 1100USD/ounce the seller has suffered a loss of 100USD/ounce. This business practice was prevalent during the gold bear market. However, increasing gold prices have motivated miners to buy back their forward sales, a process called dehedging. That recent development has turned miners from sellers to buyers, creating a new interesting dynamic in the supply-and-demand relationship.

Gold is a metal distributed around the globe. Despite its scarcity, it can be found in almost every continent on earth. The political environment though profoundly affects the degree to which a country can take advantage of its resources in gold. An investor should be aware of the developments in a particular market before allocating their funds. Until the 1990s, the market was mostly dominated by the US, Canada, Australia and South Africa. Since 2004 two trends are worth mentioning as far as the world's top producers are concerned. First, South Africa's production has been declining steadily and as a result abolishing its role as the biggest producer of gold in the world. Secondly, China and Russia have been emerging as major forces in the industry. Specifically, as illustrated from Tables 2 and 3, China now ranks as the biggest producer of gold in the world. (USA GOLD, 2018).

Table 2: Regional production in 2004

2004	Production	Reserves
1. South Africa	341	6,000
2. Australia	259	5,000
3. United States	258	2,700
4. China	215	1,200
5. Peru	173	3,500
6. Russia	169	3,000
7. Canada	129	1,300
8. Indonesia	93	1,800
Grand total	2,430	42,000

Table 3: Regional production in 2017

2017	Mine production	Reserves
1. China	440	2,200
2. Australia	300	9,800
3. Russia	255	5,500
4. United States	245	3,000
5. Canada	180	2,200
6. Peru	155	2,300
7. South Africa	145	6,000
8. Mexico	110	1,400
9. Uzbekistan	100	1,800
10. Brazil	85	2,400

### 3.2.2 Production cost

The process of gold mining is an extremely difficult task to undertake. The time required for a mining operator to turn its findings into a marketable product can be significant and therefore an investor should keep in mind the adversities associated with mining exploration. A general trend over the last decades is a reduction of exploration costs due to the lack of major discoveries. Each period though has its unique characteristics, as shown in the following chart. It can be noticed that in periods where the financial market is robust, the motive for gold production wanes and as a result exploration costs are reduced. On the other hand, in periods of turmoil, increased demand drives gold production as higher returns are expected. Figure 2 illustrates the total global spending in gold production since the mid 1990s. (Spglobal.com, 2018).

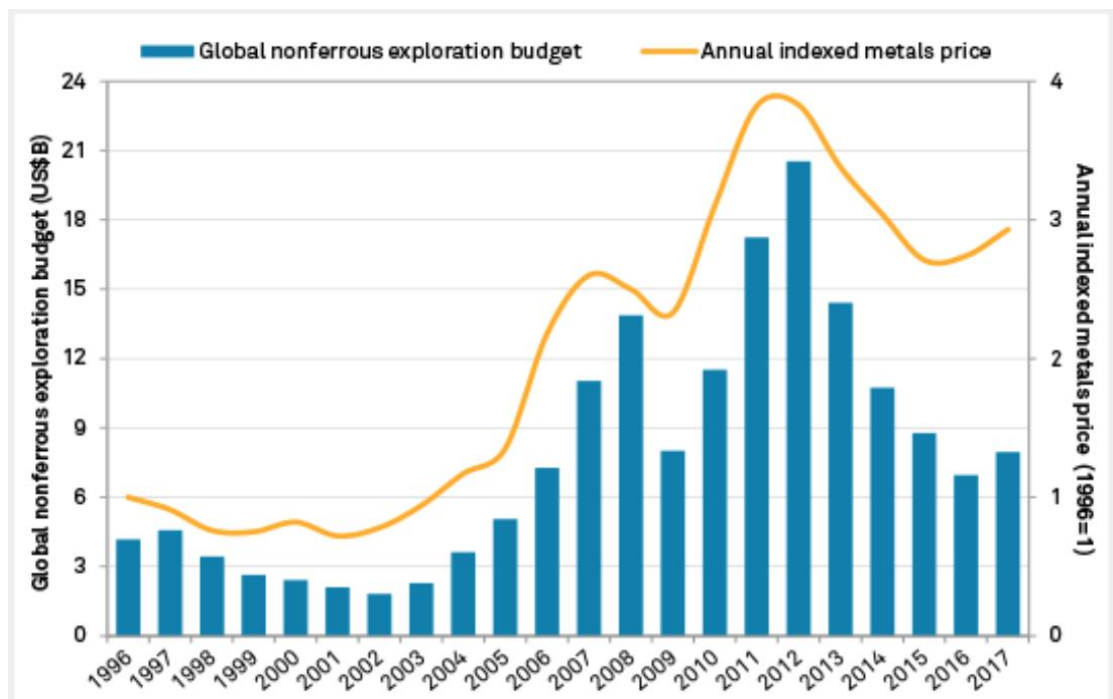


Figure 2: Exploration spending

As it is evident from the graph above, production increased significantly from 2007 till 2012, a period of severe debt crisis in Europe and recession in the US. On the contrary, exploration costs decreased from 2012-2016 when the world economy showed signs of recovery. 2017 was the first year that we notice an increase in exploration budgets since 2012. Whether that is an omen for a new period of financial instability in the coming years remains to be seen. Nevertheless, it is a trend that should be taken into account when making investment decisions.

As it is seen above, the exploration budgets have increased substantially in dollar terms. However, additional costs associated with the mining business, such as energy expenditure could outweigh the extra investments made. As it was mentioned in a previous chapter, there has not been a major discovery for many years. When a major discovery is indeed found, it is most likely in a remote area of the world where the challenges associated with its extraction are more severe. Lack of infrastructure and the need for advanced expertise are bound to drive the price through the roof. Moreover, an unstable political environment might cause further delay or termination of an exploration project. An investor willing to invest in the shares of a mining company should be aware of these developments in order to allocate their funds in the best way possible. More details on how investing in mining companies differ from investing in gold bullion will be discussed in a following chapter.

## **4 Why gold**

The debate regarding the merits of gold ownership has always been a current topic in the world of finance. In this section, the research will aim to provide essential insight to the potential investor as to if the inclusion of the yellow metal in their portfolio is an option worth considering and under what circumstances. Essentially, gold's main two rivals are cash and stocks. In this chapter, the reader will examine when gold performs better than its opponents, when not, and if the inclusion in someone's portfolio might be the best course of action.

### **4.1 Asset preservation**

The major argumentation in favour of gold ownership is its endurance in times of turmoil. The yellow metal is assumed to survive, or even thrive, amidst geopolitical uncertainty or financial disaster. To what extent this observation is accurate will be examined in the following chapters. In order to illustrate the abovementioned argument as explicitly as possible I would like to provide the reader a remarkable incident, as narrated by Michael Kosares in his book "ABCs of Gold investing" (Kosares, 2012). The writer discusses the value of gold in times of uncertainty.

In the first chapter of his book, he mentions an incident where he was paid a visit in his office in Denver by a South Vietnamese couple. It was the mid 1970s and the country was rampaged by civil war. Their country had suffered an unthinkable catastrophe and the south Vietnamese currency had become worthless as South Vietnam no longer existed. The possession of a respectable amount of gold offered them the opportunity for a new beginning. A disaster of such magnitude might seem unthinkable to a citizen of the developed world in the 21st century. However, a prudent investor should strive for the best and be prepared for the worst and maybe the accumulation of bullion gold could be the answer when such a calamity occurs.

One of the main arguments in favor of gold ownership is the deliberate debasement of the USD over the last decades. The justification lies at the fact that the possession of paper money provides little to no benefit to the investor as a continuous devaluation could lead to the collapse of the paper money regime that we currently live in. Paper money is assumed to act as both a means of exchange and as a store of value. Its former use is based on the belief that the paper money we all have at our disposal is going to be the means via which we buy the goods and services we deem necessary. A scenario in which that function of money is going to be obsolete seems quite remote. However, as far as the latter is concerned, its role as a store of wealth is highly questioned.

It would be of use to the reader to present data that either confirms or debunks the argument that the USD has been deliberately devalued over the previous decades. As illustrated by the chart below, a significant debasement of the USD has indeed occurred. (Fred.stlouisfed.org,2018).

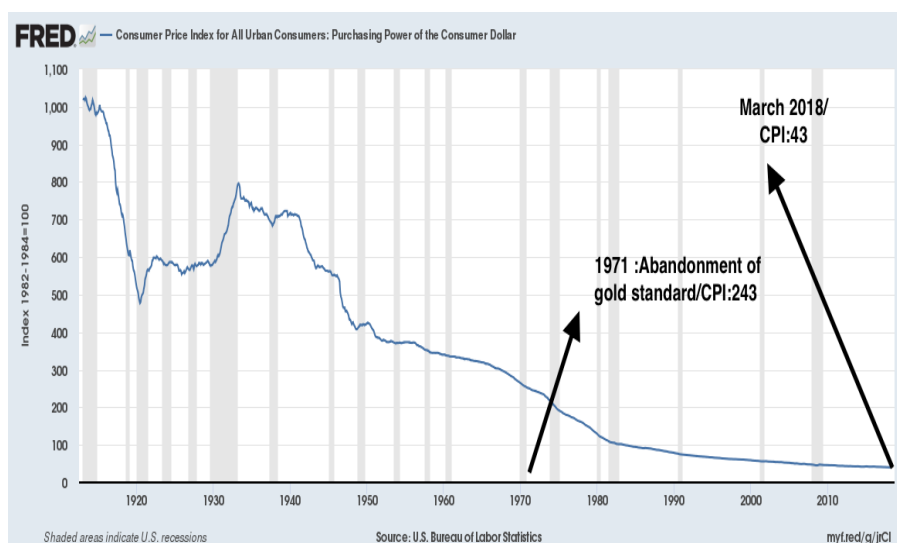


Figure 3: USD debasement

As it is indicated by the chart above, the Consumer Price Index(CPI) of the USD, a metric that measures the purchasing power of the USD, has decreased from 243 to 43. In other words, the USD has lost 80% of its purchasing power. In other words, 1 dollar in 1971 is now worth 0.20 cents. The devaluation of the USD is a fact that cannot be overlooked when assessing the usefulness of gold in the structure of a well-balanced portfolio. What needs to be examined subsequently is whether gold's price acceleration has exceeded the rate of USD debasement since it was demonetized in 1971 or not. If that is the case, then gold advocates have a solid argument that supports the hedge argument. If not, then gold's increase in dollar terms is simply a reflection of USD devaluation. Considering the above, it would be of use to the reader to present data that shows the price of gold from 1971 until today.

According to the chart below (Fred.stlouisfed.org, 2018) gold's price has increased by a staggering 3415%. If Gold's increase were a mere reflection of currency erosion then its current price would have been 1.8 times higher than its price in 1971, being 68.4. Given that its price currently stands at 1336USD/ounce it is fair to say that its role as a currency erosion hedge is mostly justified.

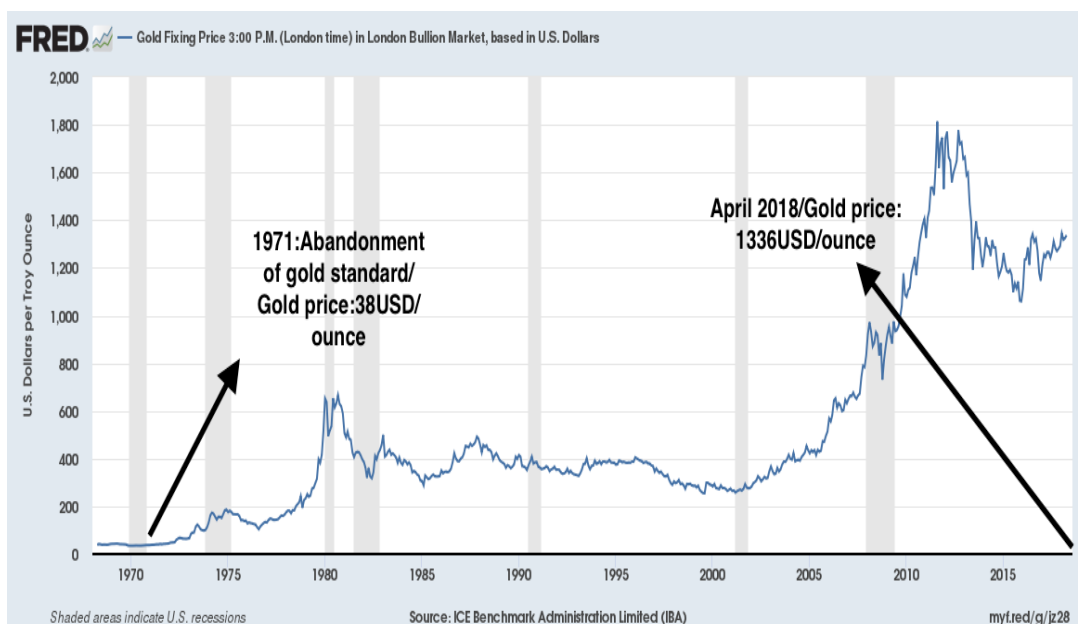


Figure 4: Gold's price since 1971

Investor moguls and policy makers can have different opinions on the matter. Alan Greenspan, in his interview in the "Gold Investor" is adamant about the value of gold as

an insurance investment. The former chairman of the Federal Reserve acknowledges in his article that the value of gold as insurance against disturbing trends in the global economy such as an exploding US government debt cannot be overlooked. (Gold: The ultimate Insurance policy, 2017).

Even though the academic expertise of Alan Greenspan is unquestionable, his above-mentioned view on gold might contradict his actions while serving as chairman of the Federal Reserve. The following chart shows the explosion of US federal debt over the last decades and the period when Alan Greenspan served is no exception. (Fred.stlouisfed.org, 2018). As it can be seen from the chart below, the same trends Alan Greenspan mentions as responsible for the unstable economic environment we live in, were also present during his own tenure. This essay does not either endorse or condemns the former chairman of the Fed's actions. Opinions of prominent figures on gold as an investment tool will be mentioned throughout the essay so that the reader has a wider spectrum on the matter.

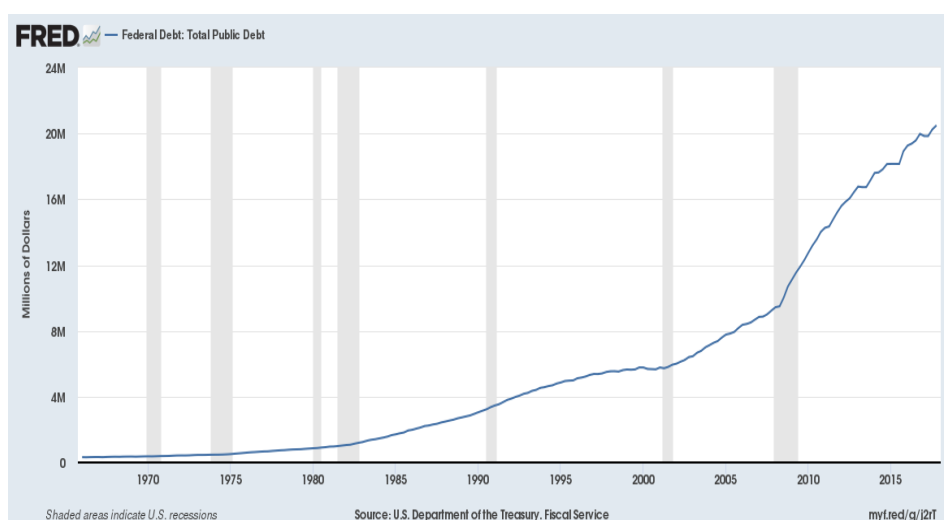


Figure 5: Federal US debt since 1970

On the other hand, one of the most successful investors of all time, Warren Buffett, has been questioning the usefulness of gold throughout his entire investment career. The reason for his disdain for gold derives from his philosophy that an asset is worth buying only if it has some intrinsic value of its own. According to Buffet, gold should not be an option for the investor as its industrial use is rather limited. His argumentation lies at the fact that investments should be made only in materials that have a direct and practical value for people.



In that respect, he dismisses gold as an essential element of one's portfolio. (Investopedia, 2018). As mentioned above, it is not the writer's intention to either approve or disprove the opinions of public figures presented. Instead, the views of important people in the investment world are mentioned to serve as food for thought for the prospective gold investor.

## 4.2 Diversification

Diversification is an investment practice widely used by portfolio managers and individual investors alike. Its main idea lies at the fact that an investor's funds should be allocated to products with different characteristics. In other words, the less dependent an investor is on the performance of an individual investment product, the higher their chances of structuring a rewarding portfolio.

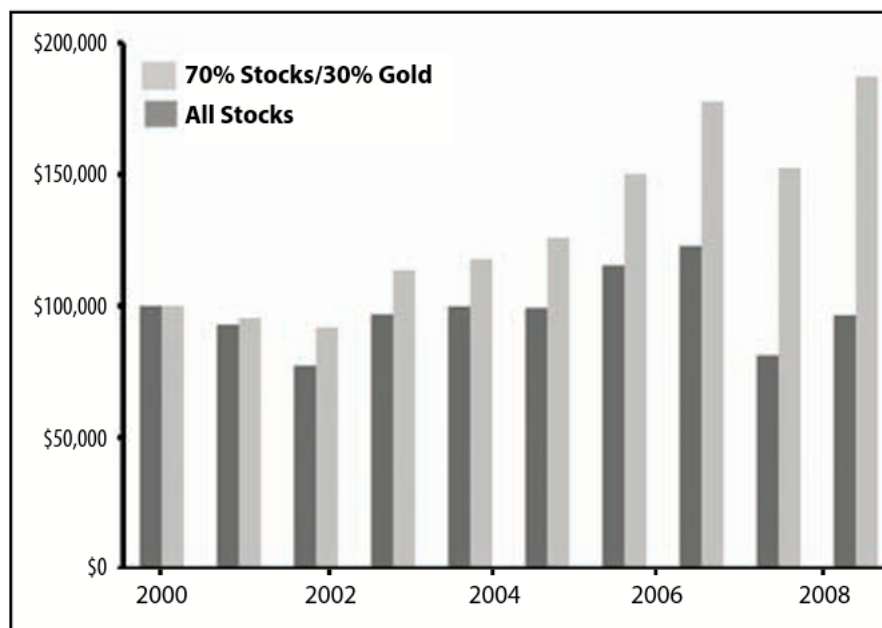
Gold is believed to perform exceptionally well in times of financial uncertainty. Stock and bond markets around the world have historically been volatile and returns can by no means be guaranteed. A prudent investor should keep that reality in mind and make the necessary adjustments in order to minimize their losses when such a calamity occurs. Whether gold is an option worth considering in such a scenario is going to be examined by data presented in the following paragraphs.

For the diversifier argument to hold, gold should have a negative correlation with traditional investments, such as stocks and bonds. That trend would justify a need for gold ownership in times of financial distress. For that purpose, it would be useful to compare the performance of bullion gold to the returns realized by the S&P 500. The latter is one of the most profound indicators of stocks performance as it includes the 500 largest listed companies in the US by market capitalization. Gold's correlation with the performance of that index would provide the investor with a fair view of how the yellow metal's returns are related to the stock markets' performance. According to Jeremy Siegel in his book "Stocks for the Long run" the average correlation between gold and the S&P 500 is close to zero. (Siegel, 2008). That observation might diminish gold's status as a protection against financial distress. A single indicator though, no matter how useful can be, cannot determine on its own the necessity for the inclusion of an investment product in one's portfolio.

Traditional investment products such as stocks and bonds are vulnerable to two major risks: bad performance of the product, and a depreciating currency in which they are traded. Gold is assumed to act as a hedge especially in the latter case as its performance is not affected by central bank policies. Gold diversification is considered optimal when the stock market has reached its peak. The argumentation contends that markets tend to have cycles and therefore it is prudent to diversify into gold when the traditional assets have reached their maximum value.

The decade of the 2000s is characteristic when assessing the importance of gold in a diversifier context. This decade was marked by a bull market in stocks until 2008, when the mortgage crisis broke out. The Dow Jones Industrial opened the century at 10,787 and closed in 2009 at 10,428, a change quite insignificant. On the other hand, Gold started the century at 273USD per ounce and closed at 1088 per ounce, four times increase in value. A portfolio invested exclusively in stocks would perform notably lower than the one diversified by 30% in gold. The above data can be seen from the graph shown below (Kosares, 2012)

Table 4: Diversification



### 4.3 Gold and inflation

Gold has always been associated with wealth protection against a depreciating currency. Inflation, the monetary phenomena which causes loss of value in a given currency is a reality prevalent in most countries and in various historic periods. Governments' privilege to print as much money as they wish in order to boost the economy inevitably leads to an ever-depreciating currency. Gold ownership advocates content that investment in bullion gold is the only efficient hedge against this economic environment. In the following paragraphs, the writer will aim to appreciate whether such a statement is supported by financial data or it is mere prejudice against the current paper money regime.

Since the abandonment of the gold standard in 1971, gold has been surging during the 1970s and 2000s and decreased during the 1980s and 1990s. The 1970s were a period of the oil crisis, which caused uncertainty over the prospects of the global economy. There, the asset preservation hedge of gold can be explicitly noticed. Moreover, the early 2000s was a period of economic growth and optimism, a sentiment which was reflected by extensive credit and a surge in real estate prices. Gold, amongst other commodities participated in the uptrend and gold portfolios earned significant returns. On the contrary, the moderation of inflation metrics during the 1980s and 1990s discouraged gold ownership as investment in traditional assets such as stocks and bonds seemed a low risk alternative. (Speck, 2014)

Even though inflation has been an incentive for gold ownership the phenomena does not seem a concern in today's macroeconomic environment. Instead, what has been noticed in a plethora of developed economies in the last few years is deflation, a steady decrease in consumer prices. Deflation occurs when the supply of goods and services is relatively larger than the demand leading eventually to decreasing prices and recession. In order to tackle this reality, governments are left with two policy alternatives. On the one hand, the invisible hand of the free market can be left to act on its own allowing businesses to shut down. The extra supply then would naturally contract until it eventually balances out with demand. That mandate was particularly popular until the 1930s but it became evident that such a course of action, or more properly put, inaction led to even more unemployment and financial disaster. The catastrophe caused by the Great Depression in the 1930s forced policy makers to rethink their views against the deflation phenomena and accepted that expansive monetary policy, at least in periods of decreasing consumer prices is a necessary evil in order to prevent further economic downturn.

As a result, the traumatic experience of the 1930s paved the way for a completely different approach when such financial disaster was again looming in 2008. National central banks, especially in the US, implemented an expansive monetary policy in order to prevent the likelihood of a deflation spiral. Economic disaster was averted, albeit at a high cost, as public debt skyrocketed. When it comes to gold, the yellow metal has been considered an investment hedge in periods of inflation. What is noteworthy is that in today's macroeconomic environment, which is nothing but inflationary, gold is performing satisfactorily. This trend is mostly attributed to the sentiment that current economic realities, such as an accelerating public debt will inevitably lead to restrictive policies aiming to reduce the deficits. This in turn will decrease the returns realized by traditional investment vehicles such as cash, stocks and bonds. Gold ownership advocates contend that the yellow metal is going to provide more attractive returns under such circumstances.

## **5 The role of central banks**

The role of national governments in the gold market is profound and their actions affect tremendously the supply-and-demand fundamentals. The most influential central banks of the world, such as the FED, the ECB and the Bank of China hold significant reserves. When they are sellers of the metal, they add to the supply side of the equation thus contributing to its price decline. On the other hand, when they are buyers of the metal, they add to the quantity demanded and therefore exert upward pressure on gold. Official sectors' actions are a crucial determinant of the gold price and as a result it is worth examining their actions over the past years.

It is supported that it is in the central banks' interest to suppress the gold price. The argumentation lies at the fact that it is in their benefit to promote traditional investment products such as stocks and bonds in order to sustain a sense of optimism in the financial markets. On the other hand, central banks are holders of vast amounts of gold and supposedly they would be benefited by an increasing price as that would make their reserves more valuable. That conflicting reality makes the topic of central bank intervention extremely compelling and any definitive conclusion reached unreliable.

## 5.1 Official sector sales

Central banks contribute to the supply side of the equation via outright sales and gold lending. As far as the former is concerned, central banks sell the metal to private investors at market price. The degree to which the former practice is driven by business or political criteria is up to debate. Advocates of the manipulation theory claim that central banks sell immense amounts of gold in order to suppress the price. Conspiracy theories are impossible to be either proved or disproved and therefore the writer neither endorses nor rejects the argumentation behind gold price intervention. An objective presentation of the facts is the research's concern and thus the investor is free to reach any conclusions they desire based on the study of this essay and any further reading they have made.

An important milestone in the history of central bank intervention in the gold market is the so called "Washington Agreement". The participants of the agreement signed in 1999 were the central banks of the most influential European countries. Its purpose was to reduce incidents of extravagant official sector sales that resulted to anomalies in the gold market. The agreement was signed in order to reestablish trust in the gold market and appease fears that the yellow metal had lost its traditional role in the economic system as a universally accepted store of value. How gold fared since the initiation of the "Washington agreement" is worth mentioning as that would imply the role central banks played in the previous status quo. The following chart shows gold's performance since its demonetization in 1971. The "Washington agreement" coincides with the gold's rally in the previous decade. (USA Gold 2018).



Figure 6: Gold's price since 1971

## 5.2 Gold leasing

Besides official sector sales, central banks are also involved in the gold leasing business. The parties involved in the process are the central banks, the bullion banks and the miners. The bullion Banks set the Daily Gold Fix and two of the most prominent are the Barclays Capital and Deutsche Bank. The central banks lend the amount of gold agreed to the bullion banks and receive a fee, called the lease rate. Afterwards, the Bullion Banks lend the gold borrowed to the miners so that they can proceed with their forward sales. In other words, miners borrow gold in order to fund the production of the metal. The exact amount of gold leased cannot be accurately estimated as the data published by governments should always be interpreted with a pinch of salt. The investor though should be aware of these developments as much as possible and conduct the due diligence necessary.

## 5.3 Change in policy

Central banks have traditionally been active participants in the supply side of the fundamentals equation via direct sales and gold leasing as described above. However, the official sectors' approach to gold is largely determined by the policy makers' expectations

for the economy. It is common amid financial turbulence that central banks become net buyers of gold in order to boost the value of their reserves. As shown by the chart below, net purchases have been increasing steadily since 2010. (World Gold Council, 2018)

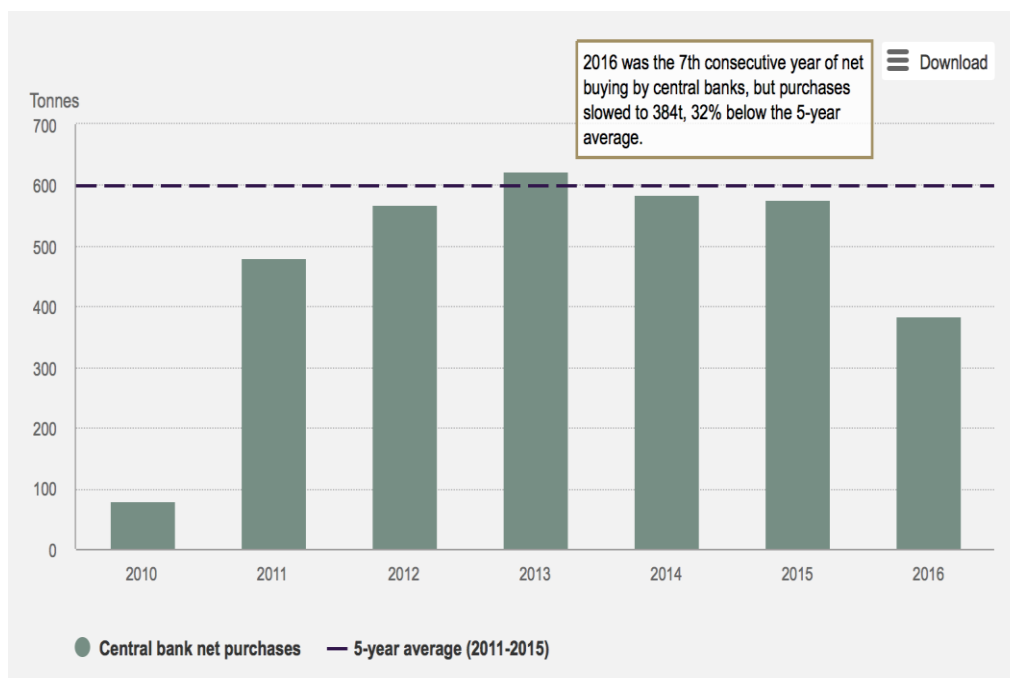


Table 5: Official sectors' purchases

According to James Steele, chief commodities analyst at HSBC, central bank purchases have been the determinant for the lasting bull sentiment in the gold market. In his interview with Bloomberg he mentions that 1300USD/ounce is where gold is about to be in the coming months. Its role as a diversifier and the persistent negative rates in the global economy are likely to increase its popularity among investors. (Bloomberg.com, 2018)

## 6 Investment alternatives

When it comes to gold ownership, investors have a plethora of ways to choose from. Bullion bars, coins and exchange traded funds(ETFs) are the most prevalent investment alternatives in the gold market. Each option has its advantages and drawbacks. An investor should consider first the reasons they wish to add gold in their portfolio. The due diligence done will aid the individual's effort to choose the investment product that will help them achieve their financial goals. (McGuire, 2013).

### 6.1 Bullion coins

Gold for investment purposes is manufactured in coins and bars. Besides the standard one-ounce bullion coin, mints also produce coins at denominations of a quarter of an ounce or half of an ounce. However, it is thought more rational from an economic point of view to buy a one-ounce bullion coin in order to track the spot gold price in the market. An investor owning a one-ounce bullion coin can have direct information regarding the performance of their investment by simply checking the daily gold price. Gold coins trade at an approximate premium of 6%. That premium consists of wholesale markup, retail markup and seigniorage. Because the manufacturing cost for any coin no matter size is the same, the premium paid for smaller denominations is higher. (Kosares, 2012).

### 6.2 Gold stocks

The purchase of gold stocks is another alternative for investors interested in the gold market. The extent to which gold stocks can act as equally effective diversifiers with bullion is going to be examined in the following paragraphs. An investor should be aware of the distinction between stocks and bullion in order to make the most informed decision possible. First, it is worth noticing that gold stocks are primarily stocks and then gold. That means that they are vulnerable to the same risks as the entire stock market. Therefore, they could be extremely attractive to the speculative investor but maybe not for the individual that regards gold as a major hedge against financial uncertainty.



### 6.3 Historic gold coins

Investors concerned about a possible government gold seizure might want to include historic gold coins to their portfolio. According to the Treasury Department, all coins minted before 1933 are considered historic and hence are exempted from the possibility of such a government initiative. Some of the most popular historic coins are the British Sovereign, the Swiss 20 Franc, the Netherlands 10 Guilder, the German 20 Mark and the French 20 Mark. Such coins are sold at premiums over contemporary bullion coins. The premium fee is usually fixed and is subject to change mainly in times of economic distress or extraordinary demand. (Darst, 2013).

A government seizure of gold holdings might seem remote and historic gold coins can be viewed as an investment hedge of last resort. However, this is a concern that renowned fund managers share and take necessary precautions in order to face such a situation if it ever occurs.

## 7 Past and future trends

The first aspect an investor has to bear in mind when considering an investment is the time horizon of their investment. Over the last 45 years gold has outperformed stocks and bonds while over the last 30 years it has underperformed. During the last 15 years, a period in which the financial system almost collapsed in 2008, gold again outperformed stocks. (Lioudis, 2018)

Over the past 30 years, gold has increased by 335% and over the last 15 years by 315%. On the other hand, the Dow Jones Industrial, a significant indicator of stock performance, has increased by 1255% during the latter period and by 58% over the former. That trend indicates that volatility is profoundly higher in the stock market and hence investment in gold might be appropriate for more conservative investors. Since 1971, gold has increased from 35USD/ounce to 1333USD/ounce, a 3500% increase, while the DJIA has appreciated in value by 1800%. (Lioudis, 2018)

On the other hand, prominent investors and financial professionals have dismissed gold's investment potential. One notable example is the Berkshire Hathaway CEO, Warren Buffett, whose main argumentation against gold is that it does not provide dividend to the investor and thus is not an investment worth considering. At Berkshire's annual meeting 2018, Buffett contrasted an investment of 10000 USD in the S&P 500 and with an equal amount of investment in gold in 1942. The result showed that the former investment would be worth today 51 million USD while the latter would only be worth 400000USD. Buffett's rationale against gold lies at the fact that it is an investment that does not produce wealth. Instead, he claims that investment in businesses' innovation and creativity is more attractive as illustrated by the returns realized. The decision to invest in the American stock market in 1942, in a period of military conflict, would have been a pretty courageous one. Buffett contended that under those circumstances an investor should only consider one thing. What the prospects for the American economy were and those who would believe that a strong recovery is about to emerge would be rewarded in the long-term. Again, neither an investment in gold nor in stocks is a panacea for the build-up of a successful portfolio. The risk tolerance of an investor and their time-horizon are two essential factors to consider before making an investment decision. (Oyedele, 2018).

## 7.1 The 1970s Gold Boom

The most important development affecting the role of gold in modern finance is the abandonment of the gold standard in 1971. In this paragraph, the writer will aim to explore the first reaction of the market to this change and how gold's performance then can compare to its rally nowadays. Until Richard Nixon's initiative to abandon gold's pegging with the USD gold functioned as money. All paper money was exchangeable for gold and as a result owning gold had the same effect as owning USD. Gold performed exceptionally during the 1970s and marked an exceptional return of 2300% until 1980. The following chart illustrates the data mentioned above: (McGuire, 2013).

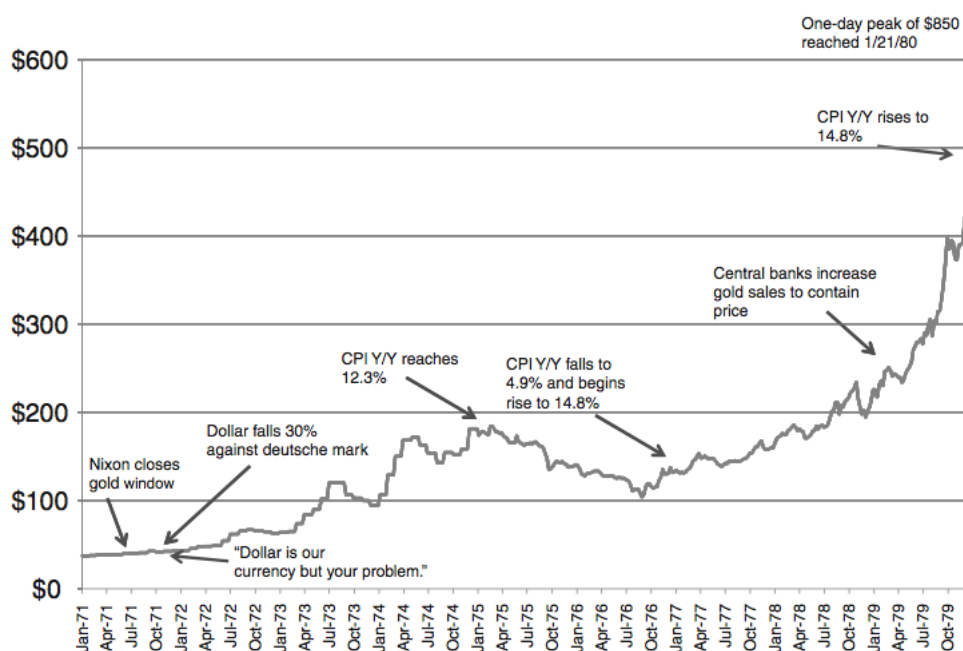


Figure 7: the 1970s Gold Boom

The gold bull market ended due to a significant increase in real interest rates that made investments in traditional investment products such as bonds more attractive. Since the burst of the financial crisis in 2008, the Fed has attempted to mitigate its effects and boost economic growth via interest rates manipulation. According to Figure 8, interest rates fell significantly from 2008-2010 in order to boost a declining economy. Since then, a trend of increasing rates is noticed as the global economy rebounded and a possibility of an overheated economy emerged. On the other hand, since 2016 a steady increase

in interest rates is present, indicating a consensus among policy makers that the economy is on a sustainable path of recovery. This development could act as a brake for a further gold price increase. Figure 9 indicates the performance of gold in 2018. The data confirms that a rise in real interest rates might reduce the popularity of gold as an investment.

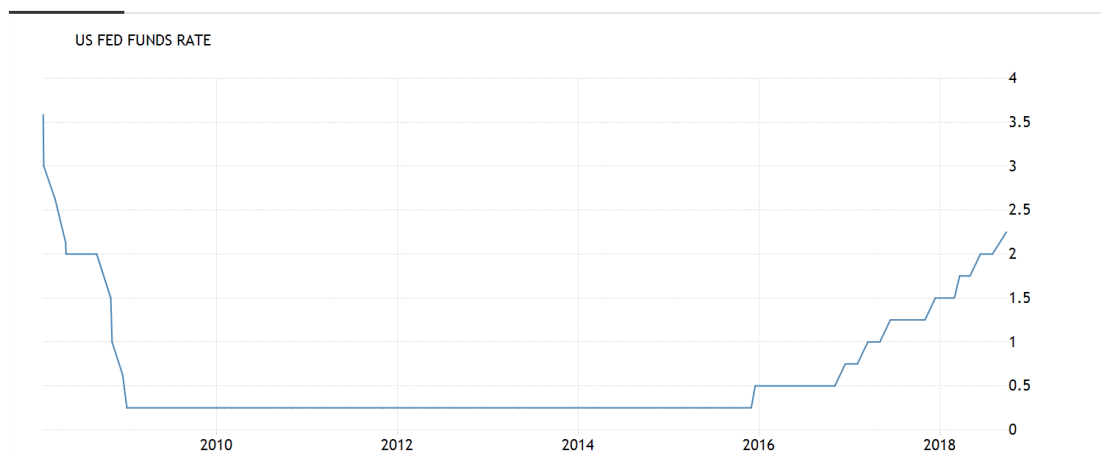


Figure 8: US FED funds rate (McGuire, 2013)



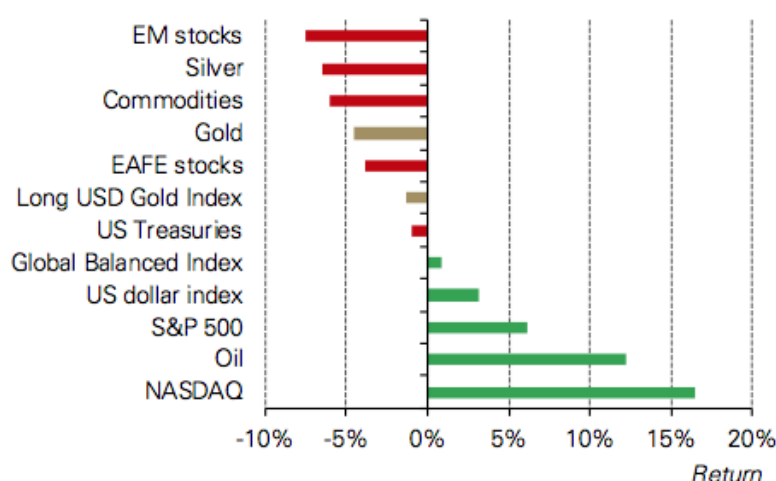
Figure 9: Gold price in 2018 (McGuire, 2013)

The above chart illustrates the performance of gold in 2018. The data confirms that a rise in real interest rates might reduce the popularity of gold as an investment. Whether that tendency will continue in the remaining of the year is subject to due diligence on behalf of the investor.

## 7.2 Short term prospects

The ongoing year has provided investors with mixed emotions regarding the price of gold. Table 6 shows the main drivers of the global economy in the second quarter of 2018.

Table 6: Gold vs stocks



A strengthening US dollar has had a negative effect on returns realized by gold ownership. Growth rates around the world are also likely to affect profoundly investment sentiment regarding gold. The booming economies of Asia, especially China and India can be proven instrumental in a further surge in gold demand. Moreover, the US economy has had modest gains since 2016 while political tensions in the Eurozone could undermine the economy's robustness in the coming months. (World Gold Council, 2018).

A key factor to consider when assessing the prospects of gold is the performance of the US dollar. The dollar has marked significant gains over the last months as there is a perception that the trade renegotiations with US partners will create a more promising environment for US businesses. Whether that conception is going to be confirmed in the foreseeable future or it is simply wishful thinking remains to be seen.

## 8 Conclusion

The value proposition of the research conducted over the course of this essay is to evaluate the place gold has in today's investing universe. Personal preferences such as return goals and time horizon are indispensable factors to consider when appreciating the yellow metal's position in an investment portfolio. Investing in gold is quite a niche market, as illustrated by the limited bibliography on the topic. A major concern among investors nowadays is the lack of significant return on cash as a low interest rate environment is extremely likely to continue to prevail. Considering that, ownership of gold might be a suitable hedge for individuals with a significant amount of cash at their disposal. Bullion's low volatility suggests that the gold's performance will continue to provide decent returns to investors. Supply and demand dynamics are also going to be favourable in the future and exert a further upward pressure on the price of gold. As a result, the risk factor seems relatively low and an investment in gold could be suitable for more conservative investors. Moreover, issuance of debt has been regarded a preferable means of funding compared to public listing as indicated by the research conducted by the financial platform Dealogi (Cohen, 2018). According to Norma Cohen, the Financial Times former demography correspondent equity worth \$4.88tn was withdrawn from the US market between 2000-2017, while equity issued via Initial Public Offerings was \$697bn. The effect this development is going to have on share prices remains to be seen. What is safe to claim though is that conventional wisdom about the superiority of stock returns is challenged as investors tend to be more favourable towards low risk investments such as corporate debt.

On the other hand, more speculative investors seeking higher returns in short-time frames would likely be more positive in the stock market, which historically is more volatile and rewarding during periods of economic growth. The purpose of the research was to present a potential investor the realities concerning the gold market and hopefully contribute to a more informed decision making. By no means, the essay does not consider gold investing as panacea as the financial history provides us with a plethora of unexpected incidents. The only constant in financial markets is uncertainty and as legendary investor Benjamin Graham mentions in his book *The Intelligent Investor* "When God created the world, he forgot to include certainty" (Graham, 2005)

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