US DOLLAR STABILITY AND THE GLOBAL CURRENCY RESERVES

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Abstract

The participation of the United States in the First and the Second World War, as well as in the Vietnam War led to an increase in expenditures for the US national defense and the need to finance such expenditures from the primary emission. This further led to the rising inflation and the falling value of the dollar. Since today the US dollar holds a leading position in the world's foreign exchange reserves, its decline would have an effect on reduction of the foreign exchange reserves value.

Keywords: Dollar, Foreign Exchange Reserves, Inflation, War, Expenditures, National Defense

1. Introduction

As a currency the US dollar was developed in the 18th century. Throughout history, it changes forms from paper convertible bonds to the modern dollar as we know it. Being tied to gold it was regarded as one of the most stable currencies in the world considering the amount of gold reserves the United States had at the time. At the Bretton Woods Conference the US dollar was officially declared as the world currency and it has kept such primacy to this day (despite the fact that upon Richard Milhous Nixon’s decision in 1970 it was no longer tied to gold and that the possibility of convertible exchange for gold ceased to be valid.) The US dollar became the world's leading currency due to the foreign trade of the USA with other countries by which it took a large proportion in the foreign exchange reserves of such countries. Today it occupies two-thirds of the world's total foreign exchange reserves of central banks. Faced with a turbulent history the US dollar value has experienced various tests with the impact of inflation and the change of its value. The largest fluctuations happened during the participation of the US in the World Wars, as well as in some smaller intensity conflicts such as the Vietnam War. Faced with the needs of the war economy as well as the need to increase the output intended for the military purposes, the US government often chose to increase the money supply through additional printing which led to the 1970 situation when the ratio between money and gold was 4:1 unlike in 1949 when it was 1:1.22 in favor of gold. The recent world history shows the escalation of new wars and therefore it is possible to expect US participation in them. In this case, the increase of the military output would lead to the increase in money supplies which would consequently cause the inflation increase. This would further be reflected in the collapse of the dollar. Since the US dollar presents a high portion of the foreign exchange reserves of
other countries, any such decline in the value of the dollar would lead to problem of foreign exchange reserves loss value. This loss would be felt most by small countries with high foreign trade deficit because they would not be able to come up with a surplus in the foreign exchange which would provide them with the new quantities of foreign currency reserves.

2. History of the United States Dollar

The beginnings of the US dollar as the monetary unit are tied to the time of the American colonies secession from the British influence (on the present United States territory) and the gain of their independence in the period between 1775 and 1783. At the time the US Congress was determined to create its own currency by which it would finance the war and therefore the paper money known as the Continental dollar appeared. Total emission of such a dollar amounted to $200 million in the period of 1775-1779 by which 77% of war costs were financed (Stojanovic, 2013). Unlike current US dollar the Continental dollar was more like a bond and allowed its conversion to another currency (namely the Spanish dollar). Depreciation appeared due to the growing needs of war and excessive emissions of paper dollars and one could get 100 paper dollar bills for a minted silver dollar. This was the reason the Continental dollar ceased to appear in circulation in 1781. The new Congress regulation in 1786 determined that the dollar could be forged in gold, silver and copper and it also introduced a cent. Thus it determined the future of the US dollar as the national currency. By adopting the Coinage Act in 1792, dollar was officially declared as the national currency and its existence was defined in silver. The value of the golden dollar was in the weight of 24.75 grams (1.48 grams) and the value of the silver dollar was in weight of the 371.25 grams (22.27 grams) of silver from which resulted the bimetallic ratio of 1:15. Consequently, the gold and silver coins were given the status of the legal means of payment (Stojanovic, 2013).

As banking developed in the USA, many privately owned banks were opened followed by the emergence of various types of banknotes that were issued. At one point in time there were even 9916 different types of banknotes issued by 1365 banks. Such a large number of banknotes led to the chaos on the market, as well as to various manipulations and forgeries. It all preceded the major banking crises in 1837 and 1839. Soon after that the National Bank Act tightened the rules on banking operations and the ways banknotes could be issued. This enabled the establishment of a single national banknote at the federal state level. The beginning of the Civil War marked the end of the convertibility of banknotes into metal. The so-called green banknotes were issued and declared to be legal tender that could not be converted to coins. The end of Civil War in 1865 marked the gradual withdrawal of these banknotes and the beginning of deflationary policy. The period which followed soon after was the period of stability and development of the American economy in which there is a significant increase in gold reserves. In 1879 the United States adopted the gold standard which officially declared the convertibility of dollars into gold.

The First World War led to the decision on the non-convertibility of dollar and it stays inconvertible until January 1919. Along with the development of economy and increase in export due to the needs of the growing war economy before and during World War II, the gold reserves of the Fed increased from 1.3 billion (1913) to 4.0 billion (1923) and thus presented almost 40% of the world's monetary gold (Einchengreen, 1996). On the basis of the increase in gold reserves the gold convertibility was introduced and dollar overtook the former global currency pound sterling. Therefore it became a new international currency and the most present one in the structure of monetary reserves. The market increasingly recognized dollar as a stable world currency and this was the reason the demand for it grew. The Great Depression that occurred in the period between 1932 and 1939 brought a wave of bankruptcies of banks and companies and the very uncertainty made the market to change from dollar to gold. Consequently, a large outflow of gold reserves appeared from the Fed and in March 1933 the US government again decided to lift the convertibility of dollar to gold and to prohibit the export of gold in order to save its gold reserves. The dollar has begun its floating rate instead of having a fixed ratio when changed into gold while the US intended to determine this floating rate and regulate the price of gold through its market transactions. By passing the Law on the gold reserves in 1934 the dollar
was officially devalued for almost 59% and the gold content of the dollar amounted to 0.888671 grams of gold (Stojanovic, 2013).

### 2.1. The Bretton Woods Agreement

Even though the need for the dollar grew it has not yet been an official world currency. The Second World War brought destruction on the territory of Europe and the collapse of the currencies European countries used but it also increased the need for products that were manufactured in the United States.

A conference was held on July 22, 1944 in Bretton Woods (New Hampshire, USA) with an aim to create a monetary system which would support the future stability of international currencies and international trade. Several ways of functioning of the future system were considered. On the insistence of Henry Dexter White, the representative of the US Ministry of Treasury, the model which introduced gold currency standard with convertibility of dollar into gold at a fixed ratio and without any restrictions was chosen. The fixed ratio of dollar against gold was established which amounted to $35 per ounce of gold and the task of other countries was to fix the prices of their currencies against the dollar as well as to intervene in the foreign exchange market in order to maintain this relationship. On the Bretton Woods conference two new institutions were created (the IMF and the World Bank). Their aim was to assist countries in case of excessive fluctuations of their currencies against the dollar and in cases of large foreign trade deficit. Through financial arrangements these institutions enabled short-term loans of money at much more favorable terms than they were in the market in order to stabilize the currency relations. For such a system to be able to function and for these new institutions to be able to come up with cash by which they could help maintain the balance of the courses it was determined that each member country of the IMF should pay 25% of its quota in dollars or gold while the rest it could pay in their own currency. Based on these funds the IMF had the ability to make available to a certain Central bank up to 125% of its quota. These loans were short-term and in the case of the IMF they would last from 3-5 years while the more lasting loans should be negotiated with the World Bank. This way, the dollar had an open door to occupy a key position in the world financial system when the formation of foreign exchange reserves was in question.

In the post-war period of 1945-1949 the US balance of payments recorded a surplus in trade with Europe, primarily because the European economies lay in ruins and there was a demand for products which could not be found on the European soil. At the same time it led to the growth of credit debt of European countries which borrowed from the United States to buy the products but it also led to the movement of a portion of the capital from the US to Europe to raise the destroyed economy. This way, already in 1950 the economic life of European countries accelerated and their economy was growing and therefore creating a larger volume of production. It all increased the demand for dollars as the result of the creation of the foreign currency reserves of European countries. For the first time the US government was faced with a deficit in the balance of payments and the overflow of dollars in newly developed countries. Soon the US government brought various decisions in order to prevent the outflow of dollars which could be converted into gold. Such a decision was the one which prohibited the US citizens to keep gold abroad. The US government also created special funds in foreign currencies under the supervision of the Fed to enable buying of the dollar without the use of gold, etc. However, these measures did not lead to long-term results because already in 1968 they resulted in deficit in the US foreign trade balance which was financed by issuing dollars. Consequently, the amount of dollars in circulation in 1970 was $40 billion which was as much as $17 billion more than in 1949 when there had been only 23 billion dollars in circulation. The amount of gold that was available to the US government drastically reduced from $25 billion in 1949 to $11 billion in 1970. The ratio of the dollar against gold has become untenable because the United States could not convert the dollar into gold without seriously compromising its reserves and the US President Richard Nixon made a decision by which he abolished the convertibility of dollars into gold on September 15, 1970.

Despite this decision by which dollar could no longer be converted into gold it kept its presence in the world finances as the number one currency (Table 1). However, even though
the place of the dollar as the key global currency was inviolable, a certain number of countries decided to transform their foreign currency reserves they had in dollars in other some currencies such as the former German mark and the Japanese yen.

### Table 1. Currency structure of the total foreign exchange world reserves in the period from 1980 until 1989 expressed in percentages

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<tr>
<td>US dollar</td>
<td>68.6</td>
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<tr>
<td>German mark</td>
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<td>Japanese yen</td>
<td>4.4</td>
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Source: Stojanovic (2013)

3. The Participation of US Dollar in World Reserves

The Bretton Woods agreement launched dollar as the number one currency in the world. Thanking to its convertibility into gold, US dollar has become highly sought after and began slowly superseding other currencies from the foreign exchange reserves. Furthermore, large exchange or purchase of American goods by the war-torn European countries made the need for dollar greatly exceed its offer. The US dollar became more demanded than gold even though gold gave everyone confidence in foreign exchange reserves. Many countries had declined in their need for gold in favor of the US dollar since it brought the possibility of making profit based upon the interest rates they could obtain. The dollar was a legal tender number one with constantly growing demand until the end of the Bretton Woods agreement and US President Nixon’s signing of the non-convertibility of dollar into gold. Shortly after the abolition of convertibility, the developed countries of the world found themselves with large amounts of dollars in their reserves and the inability to turn them into gold or buy gold in the exchange for them on the open market.

Nevertheless, the dollar has still remained to be the currency by which the necessary level of foreign exchange reserves is maintained. Even today it holds the world leading position in foreign exchange reserves of all countries. Its participation has been constantly increasing since 2011, when it amounted to $3,500,000 billion, while in 2015 it was almost $4,000,000 billion or more than double than the share of all other currencies together. Based on the chart it could be seen that the euro is the second currency which has the largest share in the world’s foreign exchange reserves but its intake has been almost constant in the period 2011-2015 and far less than the share of dollar.

![Figure 1. Global Currency Reserves](source: IMF Database)

4. Inflation Rate in the United States
The phrase that inflation is a general rise in prices on the one hand and the loss of purchasing power of money on the other hand could be taken as the most basic definition of inflation. There are several theories about the cause of inflation such as the quantity theory of inflation, inflation theory of effective demand, the Keynesian theory of incoming inflation, cost inflation theory, the theory of structural inflation. However, all the theories agree that the effects of high inflation on the currency are negative and they lead towards the depreciation of the domestic currency. In such case, the purchasing power of money in the domestic market decline and there is a deviation of the nominal value of money from its real value. If such a situation is drastic, devaluation is used as the official decision of monetary authorities which leads to the reduction of the national currency in relation to its standard- gold and other currencies (see Figure 1).

If we look at the average annual inflation in the US, we can say that in the period between 1914 and 2014 it moved up to the 18% as its maximum value. In the same period the average value of annual inflation was 3.29% and inflation had a low and stable level. The movements during the periods between 1916-1918, then 1941-1943, as well as the period of 1968-1971 and 1973-1981 deviate from this trend of low inflation. All the mentioned periods belong to the time in which the United States participated in the armed conflicts of high intensity using its own resources.

4.1. War Conflicts and Inflation

"Social conflicts erupt in all modern societies and therefore they may be claimed to be an inevitable companion of social life and a specific form of relationships within a society. They may exist in a more or less disguised form and being more or less violent" (Miskovic, 2003). "The causes of social conflicts are numerous. They can be both objective and subjective. The objective conditions of social life and social reality create the circumstances in which there is a clash of interests between different social groups. In this category of opposites belong the class, racial, national and international conflicts” (Petkovic, 2006, p.236). War is a social phenomenon which presents the armed conflict of people organized by the states, nations and classes in order to achieve the goals that are close to such groups. The war primarily presents an armed conflict but it also includes other forms of struggle such as political, propagandic, psychological, economical, and so on. The war includes a special state of mind of the people and the economy. In the period preceding the armed conflict but especially in the period of armed conflict, the effect of expectations is an important element that affects the economic decisions.

On the announcement of war comes the discouragement in the demand for paper money (including dollar) while there is a higher demand for gold. The population expectations are that in wartime it is better to have a currency that is change able everywhere and which will be accepted by any economy in the world. In these conditions the population rather wants to have gold than any foreign or domestic currency.

Also in terms of the war, the countries struggle to keep their gold reserves because they are the only ones which do not lose their value due to inflationary outbursts. Therefore, their market demand grows and this leads to a positive balance in the reserves. At such times when the market is undermined and in anticipation of new major conflicts we must not neglect the factor of converting the property into safety or flight from the dollar as a world currency into gold as the only currency stability. In history there was a suchlike case when Joseph Howard, the editor of the Brooklyn Eagle, launched the news during the Civil War (in 1864) that the President Lincoln requested additional 300,000 troops. This news had caused quite a stir in the market of gold and increased its price by 8% overnight.

In the so-called war economy there is an increase in aggregate demand by the government that makes the purchase of goods and services for the future needs of the war. Such demand for goods and services related to the war needs grows and exceeds the need for the normal, everyday goods and services. This all results in production drop which further leads to the decrease in the ordinary, normal goods and services offer and transfer of the workers from the regular manufacturing sector to the war production sector. Furthermore, due to the possibility of war there is an expectation that in future economic flows will be shifted together
with the changes in demand or supply, rising costs and money supply. All these expectations lead to price increase and inflationary spirals which results in a high rate of inflation. Moreover, an increase in expenditures of the state which incur as a result of the war economy can be covered by higher taxes, spending of the reserves or by increase of money supply and loans. Increase in taxes is one of the unpopular measures since it represents an additional impact on the budget of taxpayers and it also demoralises them and causes aversion towards war and leads to the further reduction of combat readiness of a certain country. Spending of state resources in the form of gold leads to a long-term financial instability of a country and the risk that since gold has been replaced by commodities it could be exploited by other countries for war purposes and that a new amount of gold would not be found on the market. Increase in money supply of a certain state for the purpose of war assets acquisition is the most common step taken and it undisputedly leads to the so-called war inflation.

4.2. Inflation in the United States during the Period of 1914-1918

The average annual value of inflation in the United States in 1914 amounted to 1.0%, and this value was maintained in 1915 as well. However, in 1916 this value rose up to 7.90% to reach the value of 17.04% in 1917. The growth trend continued in 1918 and average annual value of inflation was 18%. Therefore, starting from the beginning of the First World War until its end the inflation in the US increased by 18 times with the sharp rise in inflation which started in 1916 and ended in 1918, since in 1919 it already fell for about 4% (see Figure 2).

The year 1916 was an election year in the United States with Woodrow Wilson winning them while at the same time the whole US society was faced with the horrors of the war in Europe. The war that the United States was avoiding had some consequences on its society. Despite the neutral position which the US maintained for a long time it entered the war on the side of the Allies on April 6, 1917.

![Figure 2. Inflation in US during the period of 1914-1918](source: US Inflation Calculator)

4.3. Inflation in the United States during the period of 1940-1945

In the early years of World War II, more precisely in 1940 the value of the average inflation was 0.70%, to increase by 7.142 times and being even 5% in 1941. This growth also continued in 1942 and the value of the average inflation grew to 10.90% only to drop in 1943 to 6.10%. In 1944 it further dropped down to 1.70% and this trend continued in 1945 with inflation being 2.30%. However, the data from the period of 1943-1945 should be taken with a lot of reserve as described in the research done by Mills and Rockoff. This research shows that the official deflator underestimated the price level by 2.3% in 1943, by 4.9% in 1944 and by 4.8% in 1945 (Figure 3). By using different approaches they came to the conclusion that the percentages
which indicated the price level were too small to be true even though the year 1943 was the first one with the price control (Mills and Rockoff, 1987).

Kuznets' alternative GNP deflator which was published in 1952 further points out to the same conclusions. Namely, it deviates from the official one for 11.1% in 1943, 13.4% in 1944 and 11.4% in 1945. Calculated from data in Kuznets, "Long-Term Changes," Robert J.Barro, in has obtained econometric results suggesting that all the genuine inflation occurred during the war years, none of it during the immediate postwar years, and 1946 actually witnessed deflation (Barro, 1977).

Nevertheless, what can be seen from the chart is that the sharp inflation rise started in 1941 which coincides with the time when America entered the Second World War.

![Figure 3. Inflation in US during the period of 1940-1945](US Inflation Calculator)

4.4. Inflation in the United States in the Period 1967-1971

The value of the average inflation rate in 1966 amounted to 2.90%. At the beginning of 1967 it slightly increased by 0.20% to 3.10%. But as early as 1968 the average annual inflation rose by 1.10% to 4.20%. In 1969 the inflation continued to rise by 1.30% and it amounted to 5.50%, while in 1970 it almost maintained the same value of 5.60%. In 1971 the inflation fell by 4.40% and in 1972 it was 3.20% (Figure 4). The period between 1967 and 1971 is linked to the participation of the United States in the Vietnam War and the major military engagement of the US military in that region.
4.5. Expenditures for National Defense of USA in the Period 1940-2014

During 1940 the expenditures for national defense totaled $1,660 million and were at a relatively low level in comparison to the total volume of expenditure which was $9,468 million. Soon after the US involvement in World War II, these expenditures suddenly jumped and increased to $6,435 million compared to 1940 when the expenditure on national defense amounted to 17.53% of total expenditure and in 1941 they climbed up to 47.13% of the US total expenditure. This trend of rapid increase in expenditure increased over 1942 and the share of expenditures for national defense amounted up to 73.02% of the total expenditure. After the Second World War, the share of expenditures for national defense fell and set at the lower level (maximum 40%), while in the 50s there was again a new increase in expenditure with constant rise in its value. In 2008, the expenditures for national defense climbed up to 616,066 million dollars. However, after the rise of these expenditures to $705,554 million in 2011 they fell to 677,852 million dollars in 2012 (see Figure 5).

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**Figure 4. Inflation in US during the period of 1967-1971**
*Source: US Inflation Calculator*

**Figure 5. Outlays for national defense in the period 1940 - 2012**
*Source: White House, Office of Management and Budget*
4.6. Expenditures for National Defense of USA in the Period 1940-1945

The US expenditures for military purposes increased as the US participation in World War II progressed. They amounted up to 1,660 million dollars in 1940 which was 1.7% of GDP. The average inflation as previously mentioned was 0.7%. In 1941 the United States entered the war and the expenditures for military purposes climbed up to $4,775 million and amounted to 6435 million dollars or 5.5% of GDP. The inflation rate rose from 0.7% as it was in 1941 to 5%. These expenditures increased in 1942 to 25,658 million, or 17.4% of GDP and in 1943 year the growth continued to 66,699 million, or 36.1% of GDP. In 1944 the growth of expenditure was at $79,143 million or 37% of GDP, and in 1945 it was $82,965 million or 36.6% of GDP. The end of the war brought the declining of expenditures on $42,681 million or 18.7% of GDP (see Figure 6).

Such particular increase supports the hypothesis that by increase in expenditures for national defense the war gets financed partly by issuing of money which in the case of WWII led to a rise in inflation or decline of dollar as currency.


The first US participation in the Vietnam conflict dates back to the 1950s. However, in 1965 there came to the deployment of troops on the territory of Vietnam. The amount of expenditures on the US national defense was increasing for years and 1965 years it amounted to 50,620 million dollars, or 7.1% of GDP. The inflation rate at the time was 1.6% per annum. In 1968 the participation of US troops in Vietnam was at its peak and the Communist forces launched the major offensive named the Tet. The expenditures for national defense increased to 81,926 million dollars or 9.1% of GDP and inflation climbed up to 4.2% per annum. Shortly after the signing of the peace agreement and the big anti-war movements, the direct US participation in the Vietnam War was ended on August 15, 1973 (see Figure 7). This year, the expenditures for national defense amounted to 76,681 million dollars, or 5.7% of GDP and the inflation rate, despite the reduction, continued to grow to 6.2% per annum.
If we look at the growth of expenditures for national defense and inflation movements in the US, we can conclude the following for all three cases mentioned:

- That the output for national defense increased as the US participation in armed conflicts was approaching. This is quite understandable since due to the development of military needs the production of the items which settle such needs increased.

- Along with the involvement in war conflicts of the United States, there came to the rise in inflation and the loss of value of the dollar. This ultimately led to an increase in money supply in dollars, and the termination of dollar connection with the golden rule.

This all indicates that the war expenses in the United States were secured only in small part by the increase in taxes and foreign exchange reserves, but that they were largely secured by printing of the additional quantities of dollars. This is further indicated by the aforementioned growth in money supply of dollars in comparison to the amount of gold reserves of the US with almost 1:1.22 in 1949 when the gold reserves totaled $25 billion while the amount of dollars was 23 billion. Such ratio was 4:1 in 1970, when the total amount of dollars amounted to 40 billion dollars and gold reserves were $11 billion.

5. Conclusion

The history of dollar shows that its value is closely linked to fluctuations which US participation in wars brings along. During the First and Second World War the value of inflation sharply increased to up to 18 times. However, owing to the Breton Woods agreement, large gold reserves of the United States and the possibility of dollar to gold conversion, dollar today constitutes the majority of the foreign exchange reserves of countries in the world.

By US participation in the wars appeared the need of its economy to increase the production of goods for the war needs. The expenditures which such war needs generated could not be covered by increase in government revenue and it often resulted in funding these needs by the new money issuing. This method of financing caused sudden jumps in US inflation within a short period which brought dollar down.

The share of dollars in global foreign exchange reserves is now extremely high. Almost two-thirds of the world’s foreign exchange reserves are in dollars. Due to the unstable peace situation in the world, as well as the number of military operations the US army is involved in, there is a possibility of the need to increase the expenditures on national defense. This kind of needs could easily be financed through the issuance of new amounts of dollars which would further increase its quantity in circulation and influence the inflation increase. The fall of value of dollar as the currency number one in the world’s foreign exchange reserves would have an
influence on the decrease in the value of foreign exchange reserves of many countries. This would have particular consequences for small countries which base their foreign currency reserves exclusively on the dollar.

For the same possibility the Central banks should insure a certain part of their foreign reserves against such risk by buying gold as a lasting value or converting the foreign exchange reserves into some other currency which is more stable. This way, the dependence of the financial stability of the countries on dollars would be avoided and the risk of losses due to possible sudden dollar fluctuations would be reduced.

References


