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**THE ROLE OF GOLD
IN THE INTERNATIONAL
MONETARY SYSTEM**

BY—

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THE ROLE OF GOLD IN THE INTERNATIONAL MONETARY SYSTEM

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CHAPTER - I

INTRODUCTION

CHAPTER I
INTRODUCTION

The objective of this study is to review the role of gold in the international monetary system. Gold ruled the international monetary system for many years. The declining importance of gold in the international monetary system occurred in stages at times perhaps imperceptibly and at other times with much commotion. At last gold has been removed from the Fund's Articles as basis for transactions and has been dethroned from the centre of the exchange rate system by the second amendment of articles of Agreement of the IMF (April 1, 1978). Gold has been eliminated as the common denominator of the par value system and as the unit of value of Special Drawing Right (SDR).

Gold, however, has been ruling the minds of human beings as well as the monetary authorities. The theme of gold is, in fact, one of those rare topics about which every one knows something and many seem to have first hand experience to express firm and confident opinions and proposals.

During the eighties there was a war between supporters and opponents of the monetary role of gold. But later on, the supporters of gold recognized that although they were right in the first place in their efforts to maintain the fixed rate system and gold convertibility, it was too

late to go back to the past, so that what had been accomplished during 1978-79 had been made final. On the other side, the opponent accepted the idea that the SDR system was not an answer. They had given up their efforts to achieve the demonetisation of gold and they accepted gold as one of the main component of the reserve.

At present the monetary authorities enjoy high degree of freedom. For instance, they may buy and sell gold on the market, they can value their stocks at any price they choose and they may borrow against gold, using the metal as collateral. They can change the composition of the reserves, they can do whatever they like provided they respect the below mentioned two limitations.

1) There is no fixed price for gold. As a consequence, it is very difficult to make-out right sales or purchases, because the day after the wisdom of their decision may be denied by the market. This explains the preference for swaps and other reversible operations.

2) The monetary authorities have to be aware that public opinion is very sensitive to the national gold stock. In every country gold is today considered as part of the national heritage and it has become dangerous for government and governors alike to tamper with the gold reserve of the nation.

This study is an attempt to highlight the role of gold in various stages of development of monetary system.

Chapter II reviews the history of money, and historical background of gold as money. Gold was accepted as money because of its specific properties and was used as money for many years. However, with the development of trade and commerce it was difficult to satisfy the monetary demand for gold with the given supply of gold. Fresh supply of gold did not increase because of the fixed price of gold for many years. Foreign exchange was used as reserve to supplement gold and percentage of gold in the reserves declined over a period of time.

Chapter III reviews the history of international monetary system, which refers to text book vision of the gold standard, its actual working, myth and realities and collapse of the gold standard.

Chapter IV discusses the IMF and gold, gold pool, two tier system, first and second amendment of articles of agreement of fund, under the heading Monetary System II. There the study attempted to locate the role of gold in each stage of development of the international monetary system.

Before the second amendment of Articles of Agreement of the IMF the price of gold was determined by the IMF authority. But after the collapse of the Britain Woods System price of gold is determined by the forces affecting demand for and supply of gold. Chapter V deals with these factors affecting demand for and supply of gold. Price of

gold, usage of gold and gold as an investment is also dealt with in Chapter V.

Chapter VI, the concluding chapter, summarises the dissertation.



C H A P T E R - II

HISTORY OF MONEY, HISTORICAL
BACKGROUND OF GOLD STANDARD

CHAPTER II

HISTORY OF MONEY AND HISTORICAL DEVELOPMENT OF GOLD STANDARDS

2.1 History of Money

In ancient days man traded through barter transactions. There were various defects in barter. For example, difficulty of settling of terms, difficulty of bringing two men together in need, etc. To overcome these difficulties man developed various ways of transactions. Various commodities have been used as a medium of exchange, that had characteristic of acceptability, store value, unit of account and medium of exchange. For example, cowrieshells feathers, large stones, tobacco and cattle, etc. Even after second world war cigarettes and ball point pens were widely accepted as a medium of exchange in Germany.

2.2 Definition of Money

According to dictionary definition money is "any thing having a customary or conventional use as a medium of exchange or a measure, or denominator of value". This definition, however, is neither precise nor illuminating.

Therefore, another way to define money whether national or international is that it is having certain qualities.

- 1) It must be accepted by everybody.
- 2) It must be convenient to carry and store, that is it must be valuable in relation to size and weight.
- 3) It must be of consistent quality and ideally should

be indestructible.

Therefore, from the development of money we can say that money is something which is valued because of its beauty or its usefulness to everybody. However, it is also something which cannot be produced in great quantity quickly.

2.3 Why was gold used as money?

During the development of money a most convenient form of money was found, it was precious metal specifically gold and silver. Other metals have also been used as money - iron, copper, bronze, etc. Precious metals were accepted as a medium of exchange and store of value for a long time. They were in continuous supply but heavy and permanently in demand for ornaments, and decoration and therefore had a high and stable price. They were useful in themselves, portable, difficult to destroy but at the same divisible into extremely small unit.

1 grain = 0.0648 gms.

24 grains = 1 Penny weight

5760 grains = 1 Pound troy ounce.

Because of all these features the precious metals were accepted all over the world. However, they had two grave disadvantages -

- i) they were liable to debasement
- ii) they had to be weighed each time it was exchanged.

2.4 Development of Coinage

So to overcome the above-mentioned difficulties the

metal was minted into coins. Earlier gold was shaped into bars. The earliest gold bar was marked with the name 'Menes', and weighed 14 gms. Archeologist Petrie had fixed the date of the king Menes as 4326 B.C., who united the people of upper and lower Nile into one nation [Egypt].

Nine centuries later a gold ring of similar weight was developed that is 14 gms. It was Egypt's first gold currency.

During the reign of King Croesus of Lydia from 561 to 546 B.C. gold coins were minted, first, which had already served the need of mankind for 3780 years. Croesus introduced pure gold and pure silver coins both marked with his royal device of the facing heads of lion and bull. Denominationally the proportion of gold to silver was 1:10. Thus, the first bimetallic system of coinage was devised. Coined gold money served industry trade and commerce since Croesus. Gold was the symbol of eternity and light for mediaeval christianity. It had little material value but it visually represented the religious value of objects with which it was linked that is gold crowns, attars reliquaries and gospels.

During the middle ages researches continued to find gold. By 1500 A.D. gold currency became abundant in Europe. Machine made coins were first used in England during the reign of Queen Elizabeth (1558-1603). However, there were certain difficulties in minting gold. The coins of one

country were not necessarily accepted in another country. But as each coin had a certain value of metal, coins were exchanged on that basis. Later on notes started to circulate with coins on the basis of 100 per cent backing of gold for that. However, that was for few years but later on coins disappeared. Today more than 90 per cent of money supply consists of bank deposits.

2.5 Historical background of gold standard

Gold standard, a system in which notes are 100 per cent back by gold, originally developed in U.K. in 1816. The U.K. adopted gold standard formally but unconsciously. It evolved from a loose bimetallism. Bimetallism is the monetary system in which two commodities - gold and silver act as legal tender to any amount at a fixed ratio to each other. Sir Isaac Newton, as a master of mint established a fixed price of gold at £3,17s, 10½d per troy ounce of gold. That price remained fixed for 200 years.

In 1792, the U.S.A. passed the coinage act. According to that act a gold dollar and silver dollar ratio was fixed as 15:1, while the world market ratio was 15.5:1 at that time. As the U.S.A. mint accepted gold at less than its market value, less gold came for coinage. As a result the U.S.A. was on silver standard. But the coinage act of 1834 and 1837 reversed that disparity by slight cutting the gold content in dollar and set a new mint ratio 16:1, which was higher than world market value. As a result

less silver came for minting and the U.S.A. adopted gold standard in 1879. Till 1870 U.K. was fully on gold. Several legal bimetallic countries were in effect on gold. Germany, Holland, Scandinavia had silver standard. Various wars and revolutions during 1848 to 1871 had shifted several important countries including Russia, Australia, Hungary, Italy and the U.S.A. on the irridemable paper. In early 1870's this movement gained momentum because of finding of gold in Alaska and Klondike-Yukon areas and its subsequent flow into Europe in order to finance the U.S.A. civil war. The invention of cynide process for refining gold was also responsible for that movement. With all these developments in refining, the supply of gold increased and most of the countries adopted gold standard. Until 1905, Europe had 10 currencies all with gold parity and fixed exchange rate.

Table 2.1 : Dates of the adoption of gold standard by selected countries

1. United Kingdom	1816
2. Germany	1871
3. Sweden, Norway and Denmark	1873
4. France, Belgium, Switzerland, Italy and Greece	1874
5. Holland	1875
6. U.S.A.	1879
7. Austria	1892
8. Chile	1895
9. Japan	1897
10. Russia	1898
11. Dominican Republic	1901
12. Panama	1904
13. Mexico	1906

Source : Kettle Brian (1982), p.47.



C H A P T E R - III

G O L D I N T H E I N T E R N A T I O N A L

M O N E T A R Y S Y S T E M I : G O L D

S T A N D A R D

CHAPTER III

GOLD IN INTERNATIONAL MONETARY SYSTEM I

3 Gold Standard

3.1 Text Book Version

3.1.1 Definition

The country is said to be on gold standard when,

- 1) its monetary authority is committed to a policy of buying and selling gold at a fixed price in unlimited amount,
- 2) the purchasing power of a unit of its currency is kept equal to the purchasing power of a given weight of gold,
- 3) the external value of its currency is fixed through the medium of gold.

The gold standard was regarded as a device for maintaining the stability of the exchange rates. For sixty years from 1870 to the 1930's with a brief intermission for the First World War, it was the accepted mechanism of world payments. Though in international payment most transactions were financed by buying and selling commercial bills denominated in foreign currencies or sterling. But ultimately any debt between countries which were not cancelled out by credits were settled in gold. The currency in circulation and the bank reserves consisted entirely of gold and subsidiary coins or of notes backed by gold. Gold was freely

coined by mint without any charge. There were no restrictions upon the import or export of gold. Though gold standard was the device for maintaining the stability of exchange rate it was not evolved for this purpose. On the contrary it grew naturally out of the historical development of money.

3.1.2 Different Stages of Evolution of Gold Standard

Different stages of evolution of gold standard are given distinguishing titles.

The country is said to be on full gold standard when it's currency can be switched into gold at a fixed price. Gold coin form the whole circulation or else circulate with notes which are 100% backed by gold.

When the sovereign had disappeared but the Bank of England was willing to buy and sell gold at fixed prices, Britain was said to be on a gold bullion standard, as the currency was then convertible not into gold coin but into gold bullion.

A third form is the 'Gold exchange standard' under which the legal obligation resting upon the central bank is to redeem currency not in gold itself but in some other currency which is itself convertible into gold.

A fourth form exists when the authorities are under no obligation to convert the currency into anything else but when they accept the obligation to keep the rates of

the currency stable in terms of gold. This form is very similar to gold parity standard.

3.1.3 Rules of the Game

The functioning of the gold standard as an international payment system presupposes the existence of a number of economic, political and psychological conditions called the rules of the game.

3.1.3.1(a) The monetary authority must be willing to conform to the rules of the game and to resist the pressures and temptations to pursue conflicting aims of the domestic monetary policy because it may force a country to adopt such policies which are actually dangerous to domestic economic stability.

3.1.3.2 This game also assumes the price level, income and employment to be flexible.

3.1.3.3 It assumes the absence of disturbing capital movement. That is, with a rise in profit and with a rise in prices, capital may be attracted from abroad but it is not allowed in the game.

3.1.3.4 Free trade is not a necessary condition of the game but restrictive trade policies are harmful to the adjustment mechanism of the game.

3.1.4 Mechanism of the Gold Standard

According to the classical model of the gold standard exchange rate is fixed. This means every currency has specific value in terms of gold and is therefore convertible

into another currency at a fixed rate. Exchange rates under gold standard do fluctuate but within narrow limits set by the gold import and export point, that is, by the cost of sending gold from one point of the system to another. The gold export point is the upper limit beyond which the domestic price of foreign currencies may not rise while the gold import point is the lower limit beyond which the domestic price of foreign currencies may not fall, that is, one country's export point is another's import point.

Suppose the mint par is $\$ 4.80 = \text{£}1$

and gold import point is $\$ 4.70 = \text{£}1$

and gold export point is $\$ 4.90 = \text{£}1$

So if the domestic price of sterling draft on foreign exchange market is higher than the mint price of gold, they will naturally pay the English creditor more cheaply by sending gold than by buying sterling draft. In case of gold import point it is more profitable for Americans to have gold shipped to them than be paid with drafts, since they can sell the gold to the mint and receive $\$ 4.80$ instead of $\$ 4.70$ which they would otherwise get by converting the drafts into dollars. Hence $\$ 4.70$ is the gold import point.

Thus, under international gold standard, external value of a national currency was determined by the

- 1) mint par of the standard monetary unit relative to that of foreign currencies, and
- 2) limit set by gold import and export point.

3.1.5 Specie-flow Mechanism

David Hume (1752), in his essay, "On the balance of trade" explained the most influential model of adjustment process, called the specie-flow mechanism. According to this classical model, gold standard provides a self-regulating, automatic mechanism for economic adjustment among trading nations and that leads to equilibrium in the country's balance of payments.

3.1.5.1 Technique of Specie flow Mechanism

According to this mechanism, as the currency is completely related to the reserve of gold, the gold inflow and outflow will affect the amount of currency in circulation and the chain reaction will start. So if the country is debtor, as its balance of payment is adverse, the gold will flow out of the country for making payments, which will lead to decrease in the gold reserve affecting the note issue as well as commercial banks demand deposits. This will lead to credit contraction by both the central bank authorities and the commercial banks. This policy is called the tight money policy. This will deflate the domestic price, money income, money costs and employment. Therefore, with a decrease in the purchasing power imports fall and there will be rise in exports because domestic prices will be cheaper comparatively. With the rise in exports there will be equilibrium in the balance of payment automatically. But until this long run adjustment takes place, the gold losing country

will have to sacrifice internal value of its currency, for the sake of the stability of the external value of that currency. The chain reaction will be reverse in case of favourable balance of payment, that is, the inflation of domestic price and income. So with increase in income the demand for imports will increase because of large domestic incomes and the higher domestic prices relative to foreign prices and thus the effect of gold inflow on domestic incomes and employment will be partly offset.

Therefore, in the short run, a gold receiving country has no choice but to suffer from the inflationary impact of gold inflow if it is to stay on gold standard. Gold losing country is expected to take deflation for granted. Yet there is a reason to believe that the gold standard mechanism generally works to the advantage of gold receiving countries. In Joan Robinson's words it has an inherent bias towards deflation.

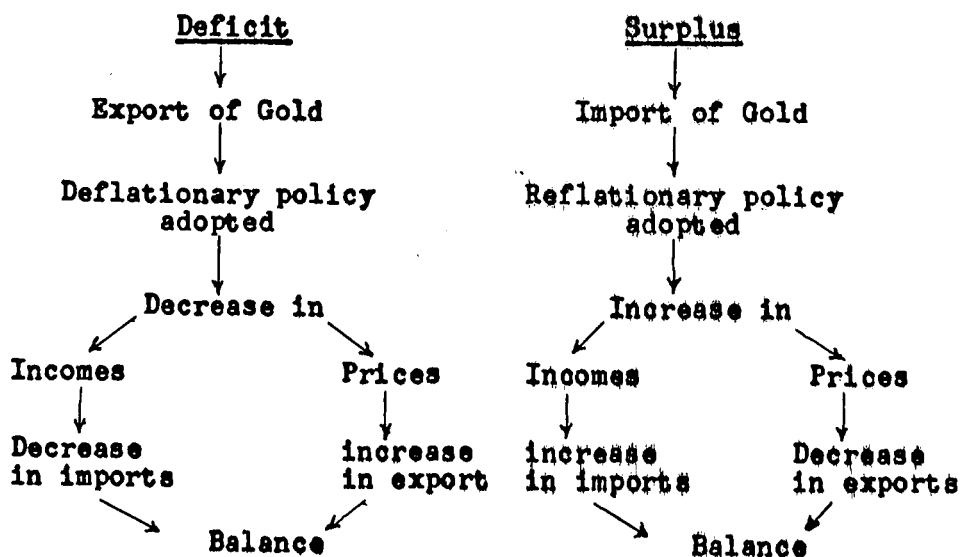
3.1.6 The Cuncliffe Committee's Report

The Cuncliffe Committee summarized the mechanism of gold standard mechanism in its report, as

"There was therefore an automatic machinery by which the volume of purchasing power in this country was continuously adjusted to world's prices of commodities in general. Domestic prices were automatically regulated so as to prevent excessive imports and the creation of

banking credit was so controlled that banking could be safely permitted a freedom from state interference which would not have been possible under a less rigid currency system. Under this arrangement this country was provided with a complete and effective gold standard. The essence of such a standard is that notes must always stand at absolute parity with gold coins of equivalent face value, and that both notes and gold coins stand at absolute parity with gold bullion. When these conditions are fulfilled the foreign exchange rate with all countries possessing an effective gold standard are maintained at or within the gold specie point."

Fig.3.1: Balance of Payment Adjustment under Gold Standard



3.2 Collapse of the Gold Standard

3.2.1 Collapse

Gold standard was not a device to keep the price level away from fluctuations, but to ensure that each nation's price level should fluctuate simultaneously. It could not prevent the periodical fluctuations of inflation and deflation, over investment and under-investment, high prices and low prices, but it only could ensure that all these swings should oscillate freely to their fullest extent

The Europe of 1914 had 10 currencies based on gold standard. The adoption of gold standard was increasing because of the prevailing situation at that time (the finding of gold in California Klondike-Yalton areas and its subsequent flows into Europe for financing the American civil war, and the introduction of cyanide process for refining gold). Because of all these developments there was substantial increase in the gold supply in the world.

But with the outbreak of the first world war in 1914, the gold standard was shattered. All gold payments were ceased and all enemy assets were seized from 1914 to 1918. But though gold convertibility was suspended, the bank of England was obliged to buy and sell gold at fixed price that is £317^s 10½d.

In every European belligerent country gold in circulation was withdrawn into the reserve of the central bank

and was used to pay for necessary imports from neutrals.

The suspension of gold standard might be said to be due to the reasons of military and political strength.

But otherwise an economic reason also would have force the suspension of gold standard, because the cost of war was increasing and was far greater than the revenue collected through taxation and public borrowing. Therefore, a large part of the cost was raised by 'outright inflation'. Thus by creating credit and by printing notes for government expenditure, the prices were raised with the aim that the public would diminish their consumption and the resources would be freed for the government. This aim could not have met if the gold standard had been maintained. That is why gold standard was suspended.

3.2.2 Restoration of Gold Standard

Then in 1919 the exchange rates were freed which followed a period of fluctuations and speculation. The exchange rate of victorious countries tended to slip downwards and those of the defeated slumped. Faced with this confusion, most of the governments decided to restore the prewar gold standard as quickly as possible and it was restored nearly in every country of the world. There were two main reasons for the restoration of gold standard after the first world war.

1) There was the natural wish to return to the normality that was gold standard, and

2) The terrific chaos produced in continental Europe because of the prewar wild inflation which hiked the prices. In Germany for reparation and for the debt payments notes were printed which increased their price level to million million times that of the prewar level in Germany. It was thought that gold standard might do away with the inflation. Therefore, that assurance of comparative stability largely forced it to return to the gold standard.

3.2.3 Callape of restored Gold Standard

However, the restored gold standard was also shattered in 1929 with great depression and abandoned in 1931 by the Britain and most of the countries of the world with the suspension of reparations and war debts. That incident seriously affected the Bank for International settlement BIS and it also collapsed.

In April 1933 the U.S.A. suspended convertibility of dollar into gold and depreciated it. Most of the nations of Central Europe also suspended convertibility and subjected exchange transactions to the most rigid control.

3.2.4 Reasons for the Suspension of the restored Gold Standard

There were different reasons for the suspension of gold standard (restored) in different countries. For example, in the U.K. the external pressure were upper most while in the U.S.A. the gold standard was regarded as hurdle to any efforts to increase domestic prices. But American gold

standard suspension had international repercussions. After the suspension in the U.S.A. dollar was devalued at a level (against gold) 60 per cent lower than before in 1934, which affected the countries that still maintained the link with gold (Gold Block), and also other currencies. Some times currencies were pegged for a while at a certain level and also were allowed to fluctuate as they wanted to. Some governments started competitive devaluation with restrictive trade and exchange policies, for example, Germany managed to maintain her exports by a system of multiple exchange rate for different countries, even for different types of goods. And the net result of all these activities and policies was that not only the world trade collapsed but the prerequisites for its revival also were not present.

There were various other causes also that contributed to the failure of restored gold standard, such as

3.2.4.1 Gold standard is a jealous god. But the monetary authorities of the world did not worship it as they had been before war. The economic chaos left behind by the war was so great that no country was prepared to take the risk without the means for escape. The world price level fluctuated disastrously between 1920-1921 and no country wished to follow every one of its future gyrations. There was a need for a price stability rather than for a exchange rate stability.

3.2.4.2 The technical task of maintaining exchange rate stability was far greater than before the war. The necessary

adjustment were very large and the prices in many cases were difficult to readjust because of the general strike of 1926.

3.2.4.3 Reparations and the insistence on the repayment of the war debt provided an element in the foreign exchange market which was not amenable to control by the weapons of the gold standard, because with the large indebtedness it was difficult to accomplish the working of gold standard to that extent.

3.2.4.4 As we have seen in the rules of the game, that tariffs were not the impediment to the working of the gold standard, there were tariffs before 1914. But to perform the functions smoothly a country which is losing gold should lower its prices to expand its exports to increase the demand for its currency. But in the post-war period the rules of the games were violated deliberately, restrictive commercial policies were adopted (i.e., high rate of tariffs to cut down imports or devaluation of currencies to increase the export).

3.2.4.5 Another reason was that the central banks of the gold standard based countries failed to observe the rules of the game. When gold was coming in they allowed it to pile up in their reserve without increasing the credit to raise prices, and when gold was being exported they let their reserves run down without restricting the credit creation to make the prices fall.

So it was not the gold standard which caused the depression but the fundamental disequilibria brought on the

depression and shattered the gold standard.

In the U.S.A. during this depression period substantial amount of gold coins and gold certificates went into hoards. Dollar convertibility was abandoned in 1933 and dollar was depreciated. The gold reserve act of 1934 established a new gold standard for the U.S.A. at \$ 35/fine ounce with gold used only for international settlements. Gold coining was completely stopped and private holding of gold coin by the U.S.A. residents was forbidden. Later on that prohibition was abolished in 1974.

According to Brian Kettle (1982, p.50)

"Then from 1933 to 1937 countries followed a policy of extreme nationalism, currencies were devalued, competitively, tariffs were raised and other restrictions on trade, i.e. exchange controls, multiple currency devices were introduced, currency devaluation intensified the depression in the gold block countries, i.e., France, Netherland, Belgium and Switzerland."

3.3 How did gold standard actually work from 1870 to 1914 : Myths and realities

For analysing the working of 19th century gold standard it is necessary to see the features of the working of gold standard.

3.3.1 Features

3.3.1.1 It was gold coinage standard, i.e., the gold coin

circulated domestically and the central bank was ready to convert notes into gold at demand from the gold reserve.

3.3.1.2 Pound sterling operated as an international currency on equal terms with gold and it was used as normal means of settling trading indebtedness and international balance between countries. Gold was used only as balancing items.

Sterling was kept as reserve because it was an interest yielding asset and it was convenient for those countries which were trading with the U.K.

Scammel's View

Scammel (1965) wrote about it as :

"Thus the picture of gold standard operation in the period before 1914 is one of a close interchangeability of gold and sterling which gave to the Bank of England, not only the role of regulator of British Monetary System but in great part, that of regulator of the gold standard and the international payment system." Scammel (1965), pp. 32-45.

3.3.1.3 According to Scammel gold standard of 1914 was in essence a gold exchange standard, but in that gold and only one currency based on gold, that is, sterling served as international money and the system was able to work smoothly till that currency was strong and backed by strong financial institution. But the gold exchange standard of post first

world war was inherently weak as the international currencies operating with gold were not very strong and were not backed by strong financial institution.

3.3.1.4 The gold standard of 1914 functioned as an international payment system in the period when there was unparalleled growth of commerce and industry and also there was a steady growth of an international financial fraternity, that is, development of an international banking and co-operation of the great central banks of the leading countries.

3.3.2 Myths and realities

Whatever we have seen in the theoretical framework was inadequate and misleading. If we compare the classical model with the practical operation of the nineteenth century standard it becomes apparent that, that model and reality differs. It was generally agreed by Taussing in 1927 and even by others that the book version was far too simple a picture of the way in which gold standard actually worked.

3.3.2.1 Donald N. Mc Closkey and J. Richard Zeecher (1976) tested the working of gold standard by applying the monetary theory of the balance of payments to the experience of the two most important countries based on it, that is America and Britain. They argued that arbitrage was equally pervasive in commodity and asset markets, precluding persistent international divergences in the adjustment process.

3.3.2.2 A.G. Ford (1960) had examined the realities of the

gold standard, by comparing the two countries, Great Britain, the central country and Argentina, the peripheral country, in his essay, "Notes on the working of the gold standard before 1914". By comparing the trade and capital flows in both the countries he proved that the gold standard worked smoothly in the central countries only and there was instability in the exchange rates in peripheral countries.

3.3.2.3 Robert Triffin (1968), in "The Myths and realities of the so called gold standard" asserted that the system operated for the benefit of central countries, that is, Europe but was burden to the countries of the periphery.

"All in all, therefore, the balance of payment of the countries of the so called 'periphery' would be assisted to them from the financial markets of industrial Europe, but these countries would pay for this dependence through the perverse fluctuations in the availability of such capital and in their terms of trade over the cycle. The exchange rate instability of most underdeveloped countries other than those of colonial or semi-colonial areas, tightly linked to their metropolitan country's currency and banking system, finds here one of its many explanations." (Triffin (1968), in "Gold Standard" (Ed.) by Berry Eichengreen (1985), p.27)

In the classical model gold movement was assumed to be the result of differences in their price level but in practice it was the result of the differences between the country's level of interest rates. There were other

forces like discretionary authority, etc., which were responsible for this gold movement such as,

From 1870 to 1880 rudimentary techniques were used, that is, expansion and contraction of monetary base with frequent changes of discount rates.

From 1880 to 1890 Bank of England used the gold devices. There were two quasi legal ways in which the bank could exert pressure on the exchanges firstly by paying more than £3.17S. 9d per ounce for bar gold which it was quite free to do; and secondly by varying the prices at which it would purchase certain foreign gold coins or by providing interest free advances to gold importers.

From 1890 to 1914 with the development of the power of Bank of England gold devices were abandoned and bank rate policy was effectively adopted with the national price changes for adjusting gold flows in and out. It was argued that for short term external imbalances changes in interest rates could be used for effective adjustment.

But some countries like France made less use of 'Bank rate' changes as compared to Bank of England. Instead they used restrictive policies on gold movements, charged premium on gold and used other arbitrary devices to protect their gold reserve.

In the classical period, the Bank of England and the main central bank did not observe the rules of the game but exercised the discretionary authority and used monetary weapons, that is, bank rate for effective adjustment without

disturbing domestic stability and even in those days domestic stability was taken care of by adopting such weapons and the instability was offset.

3.3.2.4 According to Scammel W.M. (1965) the nineteenth century gold standard was the 'quasi organisational' as it was operated by a team of central banks, cooperating under the leadership of Bank of England on behalf of the world business community, though it was regarded as an automatic system.

3.3.2.5 Bloomfield (1959, pp.35-7) noted that,

"The annual average of the discount rates of twelve central banks (England, Germany, France, Sweden, Finland, Norway, Denmark, Belgium, Switzerland, Netherlands, Russia and Austria-Hungary) reveal the interesting fact that in their larger movements, at least the discount rates of the virtually all the banks tended to rise and fall together To some degree and certainly for many of the banks, their broad similarity reflected competitive or 'defensive' discount rate changes But a more important explanation lies in the fact that discount rate in most of the individual countries tended to show a positive correlation though generally not a very marked one with domestic

business cycle fluctuations. Since, as is well-known, major cyclical fluctuations tended to be broadly synchronous in all countries, discount rate movements, thus generally tended to exhibit a broad parallelism over the course of the world cycle—although there were of course, many dissimilarities with respect to short term movements in various countries”.

3.3.2.6 Robert Triffin (1964) argued that in the 19th century there were no down wage adjustment to their full extent and it was of very minor amplitude.

The use of sterling balances in equal terms with gold also cushioned the British bank reserves. This was because overseas banks held the sterling balance as cash reserve and deficit between British and its Empire, and even to some extent with other countries merely settled through reshuffling of British bank deposits rather than by an overall expansion or contraction in their amount and to correlative gold inflows or outflows.

“In fact, however, international capital movements often did cushion and even stimulated vast and enduring deficits or surpluses on current account without calling for any correction whatsoever except in an extremely long run indeed” (Triffin (1964, p.127). Triffin (1964) also asserted that the balance of payment adjustment in the 19th century was smooth not because of the price changes but

because income changes were always acting in the same direction to reinforce the price changes. With the deficit in the balance of payment, income falls which leads to the fall in import improving the merchandise trade balance.

According to Triffin the classical model did not consider the role played by the long term capital movement in balance of payment correlation, which was more important than the price and cost movements.

"The developing countries of that time the U.S.A., Canada, Australia, etc., were able to maintain long standing deficit on current account financed by corresponding capital imports from Western Europe." (Triffin, 1964)

3.3.3 Factors responsible for the smooth working of the 19th century gold standard

In 1918 people wanted to go back to normality by adopting the prewar gold standard. Though at that time international liquidity increased much compared to prewar era (only 20% of the world imports), it was not possible to adopt gold standard because of changed conditions. Therefore, it is also necessary to take into account those factors which facilitated the smooth working of prewar gold standard with such a few level of liquidity.

3.3.3.1 The basic conditions for working of classical model realised in prewar era than later. International trade was also comparatively free. Only in the last years of the century the U.S.A. and Germany raised tariffs which affected the smooth functioning slightly.

3.3.3.2 Because of swift industrial growth, adjustment of gold standard was achieved without deflationary effects and was brought about by movements in relative national income by disparities in rates of growth rather than by positive inflations and negative deflations.

3.3.3.3 During that period sterling became the world currency in which payments were made either through off-setting entries in the books of international bankers or through investments in commercial bills of exchange. Thus due to this sterling balance, lack of liquidity was not felt. But whenever there was imbalance between countries, it was cushioned from international reserves by international credit system.

3.3.3.4 Lastly the policies of the central banks also prepared the smooth track for driving the train of gold standard. There was far greater element of discretion than was generally supposed. Bank of England exercised considerable discretion in the choice and timing of its actions for protecting its gold reserve. And it was very careful in maintaining the external stability with least disturbance in the domestic stability.

Thus because of all these factors prewar gold standard worked smoothly. However, after 1st world war the conditions were changed and therefore it was not possible to adapt again the gold standard and work smoothly.



CHAPTER - IV

GOLD IN THE INTERNATIONAL
MONETARY SYSTEM II

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4.1 International Monetary Fund :

4.1.1 Introduction

Failure of the gold standard followed by the world-wide depression, the currency chaose of the interwar period, restrictionist policies affecting adversely the international trade, problems created by second world war and a host of other events of great and small significance, made necessary the establishment of IMF.

4.1.2 Objectives

- 1) To establish international monetary cooperation among various member countries.
- 2) To ensure stability in foreign exchange rate.
- 3) To eliminate exchange control.
- 4) To establish a system of multilateral trade and payment system in place of old bilateral trade agreement.
- 5) To promote international trade.
- 6) To help member nations to achieve balanced economic growth (mainly backward nations).
- 7) To eliminate or to reduce the disequilibrium in the balance of payments, by selling or lending foreign currencies to the member nations.

- 8) To promote investment of capital in backward and underdeveloped countries.

4.2 Articles of Agreement of Fund Related to Gold

Resources of the IMF was the quota subscribed by members. The quota was carefully determined and assigned to each country depending on the trade and position of the country in the world.

The quota was asked to subscribe in terms of gold and own currency (Art. III, Sec. I). The obligatory minimum gold contribution was "the smaller of

- i) 25% of its quota or
- ii) 10% of its net official holdings of gold and the U.S. dollar",

at the time when the Fund's operation began (Art. III, Sec.3).

It was agreed that "the member countries par value will be agreed with the Fund and will be expressed in terms of gold or in terms of the U.S. dollar of weight and fineness in effect on July 1, 1944 (Art. IV, Sec. 1). "The Fund shall prescribe a margin above and below par-value for transactions in gold by members and no members shall buy gold at a price above par-value plus the prescribed margin, or sell gold at a price below par-value minus the prescribed margin." (Art. IV, Sec. 2)

A change in par value of a member's currency could only be approved of by the Fund, if the change was necessary

to correct fundamental disequilibrium. (Art. V, Sec.5(f)).

A member country could deal with the Fund only through its treasury central bank, stabilisation fund or other similar fiscal agencies (Art. V, Sec.1). The fund was a banker for central banks.

A member was entitled to buy the currency of another member from the Fund in exchange for its own currency. But that right was subjected to certain conditions.

The use of the Fund was restricted by the amount of members' currencies, held by the IMF. Whenever the currency of the member held by the IMF became scarce as a result of a large demand for it, the IMF was entitled to declare that currency scarce. In that case it would apportion its existing and accruing supply of scarce currency with due regard to the relative needs of the members (Art.VII, Sec. B).

A formal declaration regarding a scarce currency would operate as an authorisation to any member after consultation with the Fund, temporarily to impose limitations on the freedom of exchange operation in the scarce currency.

There was also a quantitative limitation on the use of the Fund's resources by a member, Set by its own quota (Art.V, Sec. 3(a)(ii)).

1) The proposed purchase should not cause the Fund's holdings of the purchasing members currency to increase by more than 25% of its quota during a period of twelve months ending on the date of the purchase.

ii) The Funds holdings of the purchasing members currency must not exceed 200% of the quota of that member.

Repurchase by member of it's own currency

At the end of each financial year (April 30) a member could, if certain conditions obtain, repurchase with gold or convertible currencies, part of Fund's holdings of it's own currencies. (Art. V, Sec. 7(a,b)).

According to Art. V, Sec. 7(b) the repurchase obligations were not required to be purchased in full, when,

i) members monetary reserves were below it's quota. At that time repurchase obligation must not be performed to the extent because it would result in a decrease of the members monetary reserve below an amount equal to it's quota.

ii) the Fund's holdings of the member's currency were below 75% of its quota.

iii) the Fund's holdings of the members was equal to at least 75% of the member's quota.

4.3 Role of Gold in IMF

From the above given provisions in the Articles of Agreement we can see the role played by gold in IMF. Gold was the international unit of account, as the par values of the member countries were expressed in terms of gold. The member countries were made to pay part of their subscription in gold and had under certain conditions, to sell gold to the Fund for their local currencies, and the members also had

agreed to sell their local currencies to the Fund for gold. The Fund could change, whenever possible, its local currency resources into gold in order to be able to purchase with gold, scarce currencies of surplus countries. All these provisions strengthened the liquidity of the Fund by increasing the shiftability of its resources because gold is a liquid asset which can at any time be turned into any desired currency since all members were obliged to sell their local currency for gold. The Fund was also any time ready to buy gold with local currency at a fixed price and preferred on principle gold to holdings of local currency, when its holdings of local currency would rise above the original contribution.

4.4 Arguments in favour of Gold Standard and IMF Parallelism

The Articles of Agreement of the Fund were an elaboration of joint statement of Keynes plan and White plan. When the White plan and Keynes Plan were first published, Prof. Williams (1943, pp. 49-50), suggested that both were essentially gold standard plans and especially the white plan tried to preserve as much as possible the previous role of gold. According to Prof. Williams (1943) there were many parallels between the operations of Fund and the working of the gold mechanism.

1) In the Agreement the par value of member currencies was expressed in terms of gold or gold dollar and established

the exchange rate very much in the same way as if all the members were on the gold or gold exchange standard.

2) Gold movements were not necessary but their function was preserved and performed by currency transfers in the Fund.

3) Those transfers in the Fund were affecting bank reserves in precisely the same manner as the movement of gold under the gold standard.

4) And, therefore, had the same monetary and price effects as under the gold standard.

Thus the countries purchasing the currencies required from Fund for local currencies were similar to the gold losing countries, and any surplus country was similar to that of gold receiving countries, because deficit countries according to repurchase provision had to purchase the local currencies for gold and surplus countries could receive gold under the provision that Fund should sell gold to members in exchange for the members currency.

So according to Williams (1943) it led to the same policy of deflation and inflation for deficit and surplus countries respectively as under the gold standard. Of course there was no compelling reason to assume that the credit expansion would actually take place with the gold inflow because the expansionist effect theory is based on certain conditions that surplus countries should not have too much gold and that the Fund does not attempt a general redistribution of gold.

However, it can be said that those plans were designed to erase that part of gold mechanism or least allowed it to operate under control and therefore not automatically.

To be on the gold standard requires monetary authorities to follow the rules of the game mentioned in the previous chapter. But after the Second World War distribution of gold was unequal and therefore many countries were not able to go back to gold standard even if they wanted to and some countries which were able to, did not desire to do so.

Therefore the similarities between the IMF and gold standard mechanism were superficial.

4.5 Keynes View : Parallelism between Gold Standard and IMF

Lord Keynes considered the Fund proposal as "the exact opposite" of the gold standard, because in IMF the use of gold was as a convenient common denominator by means of which the relative values of national currencies which were free to change and were expressed from time to time and not as a fixed standard of value.

He further pointed out (House of Lord, May 23, 1944) that gold already had been dethroned in England as a fixed standard of value, while in the Article of Agreement, dethronement was not only confirmed but also approved by expressly providing that it was the duty of the Fund to alter the gold value of any currency if necessary.

4.6 Formation of the Gold Pool

4.6.1 The Second World War was followed by worldwide inflation. The factors responsible for that were not only the monetary system but also various other factors, that is large share of resources going to the industrial investment rather than consumption, technical developments, etc. The lesson, learned from the post first world war period, that of how to control economy, was also responsible for inflation. At that time the rate of growth of various industrial countries accelerated by around 4% per year and annual increase in world trade had been running between 6% to 7% a year. Till December 27, 1958 there was steady progress towards free trade and freedom of currencies. Therefore before the first world war Europe was the dominant country while after the second world war the dominance of the U.S.A. and dollar was unchallenged.

But the prosperity of the U.S.A. was shattered on December 27, 1958 by the convertibility of all major currencies (including sterling) for non-residents. Dollar became surplus because the balance of payment deficit continued to increase and dollar went into foreign hands. The dollar was convertible into gold on demand. In 1949 the U.S.A. gold stock had reached to 708 million ounces, but by 1956 it had reduced to 508 million ounces and overall deficit of the U.S.A. was between \$ 3000 million to \$ 4000 million. So after the formation of common market and with the increasing

deficit of the U.S.A. there was transfer of reserves from America to Europe.

In 1960 there was the first run on gold and suddenly there was increase in demand for gold. The factors responsible for the speculative demand for gold were the Cuban missile crisis, the rumours of devaluation of dollar due to its continued external deficit, problems in Congo and Middle East and unsettlement about the U.S.A. policy subsequent to the November election.

On October 1960 the London Price reached to \$ 40 an ounce of gold. In order to reduce that price Bank of England with full support from the U.S.A. sold gold on the market. Because of the fear of devaluation foreign central banks started encashing their surplus dollars at the U.S.A. gold window.

Charles Coombs, formerly senior Vice-President of the Federal Reserve Bank of New York, who was responsible for the U.S.A. Treasury and Federal Reserve operations in gold and foreign exchange market summarized the situation as follows :

"Thus in late 1960's the dollar had become convertible into gold on demand not only by central Banks but also by private speculators all over the world. The U.S.A. government had become thoroughly trapped by its gold commitments under Bretton Woods and a heavy responsibility for devising a safe escape route now fell on the new team of

Treasury officials to be appointed by president-elect John Kennedy." (Kettle Brian (1982, p.53))

In February 1961 Kennedy stressed the immutability of dollar-gold price but it was not more than a holding operation.

Once again in 1961 pressure on gold price built up. And ultimately the U.S.A. delegations suggested in September meeting in Vienna to close the London gold market.

In October 1961 the U.S.A. authorities proposed to make an informal arrangements to share the burden of the cost of intervening in the London Market to control the gold price. The Central Banks of Belgium, France, Italy and Netherland, Switzerland, West Germany and the U.K. agreed to cooperate in consortium with the Federal Reserve Bank of New York for the purpose of stabilizing the gold price on the London Market. Bank of England was acting as an operating agent for consortium and all members were asked to contribute quota.

4.6.2 What is Gold Pool?

Thus the Gold Pool was an arrangement whereby Bank of England would sell gold on behalf of the Central Banks of members, in sufficient quantities to keep the price at \$ 35 an ounce. So whenever the price of gold would rise above \$ 35 an ounce, the Bank of England would sell on market at \$ 35 an ounce and whenever the price would fall below \$ 35 an ounce, the Bank of England would purchase gold at

£ 35 an ounce on the market.

4.6.3 Working of Gold Pool

"By late spring the pool had purchased an amount equal to £ 800 million but by the middle of July the gold price had moved sufficiently in the opposite direction to require the use of all that surplus and by the end of that month the sales consortium was in full operation. At the date of IMF annual meeting in September pool sold the gold equivalent of £ 50 million. In October 1962 when the Cuban crisis occurred, record demand for gold led to more sales from the pool; however between October and December the crisis eased and with the Russians selling substantial quantities of gold, all the sales were recovered and repaid to members." (Weston, Rae (1983, p.10)).

In 1963 and 1964 the pool distributed a total of £ 1200 million among its members. At the end of 1964 the French Government wanted to convert its surplus dollars into gold but that demand was within the reach of the Pool, because of the increasing Russian sale.

Table 4.1 : Gold production in Metric Tonnes

	<u>1958</u>	<u>1959</u>	<u>1960</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
Production	1,050	1,124	1,176	1,406	1,440	1,440	1,410
Soviet Sales	220	300	200	450	550	-	15
Total	<u>1,270</u>	<u>1,424</u>	<u>1,376</u>	<u>1,856</u>	<u>1,996</u>	<u>1,440</u>	<u>1,425</u>

Source: BIS, Annual Reports, IMF International Financial Statistics.

But after 1965 there was no gold sale by Russia and gold pool was faced with rising demand and no corresponding rise in supply of gold. This led to the rise in price of gold to \$ 35, 19 $\frac{1}{2}$ an ounce after 5 years on December 23, 1966. In November 1967 sterling was devalued. It affected the stability of dollar and created an enormous speculative demand for gold.

In June 1967 the French came out of the Gold Pool, although the announcement was made officially on 23 November. With this the U.S.A. contribution to the gold had risen from 50% to 59%. Remaining members declared their support for pool in the Frankfurt meeting on 25th and 26th November 1967.

The speculative demand for gold was accentuated by the Senator Jacob Javit's proposition on 28th February 1968. He proposed to abandon the gold pool and suspended convertibility of the dollar into gold. The Vietnam war gave fire to the situation because with that the U.S.A. treasury gold reached a level at which the U.S.A. authority was unable to maintain the gold dollar parity.

Because of increasing speculative demand for gold, on Monday, 11th March gold pool losses were \$ 118 million, on Tuesday \$ 103 million, Wednesday \$ 179 million and by lunch time Thursday \$ 220 million and on 14th March it reached \$ 400 million and this persuaded the Bank of England to close the London Gold Market the next day. As a result of all this on 14th March 1968 President Johnson discontinued

pool operations and it was agreed that London Gold Market should remain closed for two weeks to allow time for a solution to be found.

4.7 Two Tier System

4.7.1 This gave birth to the two tier system on 16th March, 1968. Governors of the gold pool established the two tier system in the meeting held at Washington. In this system the central banks were allowed to buy and sell gold among themselves at \$ 35 an ounce, for monetary settlement, while London Money Market left free for private speculators. Thus there were two prices of gold one official price, i.e., \$ 35 an ounce and another market price which would be decided by the forces of demand and supply. On 1st April 1968 the London Gold Market was reopened and price was settled at \$ 38 an ounce for rest of 1968, and it did not rise above \$ 43 an ounce. But in 1969 the gold price declined to \$ 35 an ounce because of renewed flow of gold from South Africa.

But from 1969 to 1971 the speculative demand for gold began to rise due to the increasing deficit of the U.S.A. and the rise in industrial demand for gold. Industrial demand for gold was rising swiftly because of the advances in technology. Defence and aerospace industries were finding new uses for gold and so was the medical profession. Because of inflation, gold was comparatively cheap before two tier system. Higher incomes throughout the world also increased the demand for gold. The popularity of gold jewellery was

also spreading. All these factors led to use of gold equal to \$ 12 billion during 1951 to 1965 which reduced the monetary supply of gold. During March 1970 to May 1971 the U.S. gold stock fell by \$ 1,379 million to only \$ 10,568 million which created a crisis of confidence in dollar.

4.7.2 Collapse of the two tier system

First National City Bank wrote in it's Annual Gold Review in the beginning of 1971 that the two tier gold system appeared to be inherently less stable than in its previous two years of operation. Three factors were responsible for affecting that stability.

4.7.2.1 In a period of inflation the market price of gold could not be expected to be held at 7% above the level in 1930's.

4.7.2.2 Gold was the attractive reserve asset of the government and the central banks of the world.

4.7.2.3 Special Drawing Rights (SDR) (we will see the details later on) or paper gold had been accepted only by member countries of IMF in 1970, which was mainly created to solve the balance of payment problem. But the U.S.A. did not satisfy that condition of S.D.R. with the increasing deficit.

In the second half of 1969 gold prices in free markets turned around drastically and in December 1969 prices in London fell back to the official price of \$ 35 an ounce. In January 1970 they dropped even lower but they moved fairly close around the official price throughout 1970 and the first

several months of 1971. Similar price movement was prevailing in other gold markets also.

4.7.3 The reasons for the decline in gold prices

4.7.3.1 Although the industrial demand for gold continued to expand rapidly, the rate of growth slowed in 1969.

4.7.3.2 Gold hoarding fell to its lowest point in more than a decade.

4.7.3.3 Fear of revaluation of gold was reduced as a consequence of the greater calm in exchange markets.

4.7.3.4 Birth of S.D.R. which had reduced the fear of shortage of world reserve.

4.7.3.5 Agreement between South Africa and Fund at the end of 1969 that South Africa would sell gold to the Fund, thus increasing the amount of gold held by monetary authorities.

4.8 Review of the Basic Problems of Bretton Wood's System

In 1963-64 a group of 32 academic economists and public officials identified three basic problems of the Bretton Woods system that is, liquidity, adjustment and confidence.

4.8.1 Liquidity Problem

After Second World War international trade was growing in the volume and value with a very fast rate. But the provisions given by Bretton Woods system was inadequate for enlarging world reserves.

During 1951-66 the rate of growth of world gold

production had been 3.4% per annum but the monetary gold stock was growing only 1.3% annually.

At the same time the industrial demand for gold was rising because of advances in technology. Defence and aerospace industries were finding new uses of gold, and also medical uses of gold was increasing.

During the period of inflation gold was comparatively cheap as the price was fixed equal to \$ 35 an ounce in 1934. This led to hoarding of gold.

But the supply of gold was insufficient to accommodate the demand for reserve and industrial demand for gold. Thus the world stock of liquidity was not increasing sufficiently and rapidly to support the expanding world trade and there was danger of imbalance of payment settlement, which could have affected the growth of world trade and the countries might have adopted the restrictionist regime like that of interwar period. Therefore, countries wanted access to reserve that they could use without conditions imposed by the Fund. In the absence of a good reserve asset, most countries used the U.S. dollar and Sterling as the reserve assets. As a result the U.S.A. balance of payment deficit increased.

4.8.2 Adjustment Problem

Industrial members found it increasingly difficult to correct the balance of payments disequilibria, either

deficit or surpluses through use of demand management, policies and they were unwilling or unable to make changes in their par values. Consequently no instrument was available for correcting external payments imbalances.

4.8.3 Confidence in Reserve Media

As the dollar was used as a reserve or key currency, it was accumulating in the hands of the central bank authorities outside the U.S.A. It began to exceed the value of the gold holdings of the U.S. Thus the fear of a confidence crisis in the dollar began to spread.

There were various other factors which were responsible for the increasing deficit in the balance of payment of the U.S.A., that is, trade balances, foreign aid for private investment abroad, defence expenditure of the Vietnam War, etc.

4.9 Revaluation of gold as a solution to the liquidity problems

It was proposed that the price of gold should be increased or in other words, the U.S.A. acting independently or in consultation with other nations devalue the dollar, as a solution to the liquidity problem.

4.9.1 Prof. Roy Marrod (1965) of Oxford was the most prominent advocates of that proposition. He suggested that the gold prices should be doubled at least, which would give rise to various effects,

4.9.1.1 the value of gold stock held by bank and governments would doubled.

4.9.1.2 It would increase substantially the value and quantity of current gold production, and

4.9.1.3 It would serve to reduce the tendency of private individuals to hold gold and might influence some of them to give up their hoarded gold in response to the increase in price,

Thus liquidity problems would be solved.

4.9.2 Jacques Rueff (1963) of France also stressed the desirability of abandoning the gold-dollar exchange system and reformulating an international gold standard along traditional lines with some necessary modifications to bring it up-to-date. But Rueff did not insist upon an increase in gold price as necessary conditions.

According to him

"There is no doubt that raising the price of gold in dollar (and therefore in all currencies whose rate is based on dollars) would increase the nominal value of gold reserves and thus facilitate the liquidation of the deceptive structure brought about by the gold exchange standard. It would be imprudent, however, to derive from simple calculations an estimate of how much to increase the gold price or even to state conclusively that an increase is unavoidable." (Rueff; (1963), 9.267)

4.9.3 But according to some views revaluation of gold as a solution to the liquidity problem could suffer from many shortcomings which might proved to be detrimental to the

stability of the world monetary order, for example,

4.9.3.1 Inflation : A sudden rise in the price of gold would create large amount of reserve. If the increased amount would immediately used instead of keeping it as buffer against trade fluctuations, that would lead to a fresh wave of inflation in the already inflation ridden countries.

4.9.3.2 Uneven distribution of gains : The benefit of gold revaluation would be distributed in an uneven manner. Gold producing and high gold reserve countries would be benefited most.

4.9.3.3 Increase in the production of worthless commodities : Revaluation of gold would stimulate production of an intrinsically rather worthless commodities.

"Nobody could ever have conceived of a more absurd use of human resources than to dig gold in distant corners of the earth for the sole purpose of transporting it and reburying it immediately afterwards in other deep holes, especially excavated to receive it and heavily guarded to protect it." (Triffin R. (1960), p.89)

It would be cheaper to print currency notes or to make entries in the books of an international credit agency, if one would be credited. However, against this argument it was pointed out that only a small fraction of one per cent of the world's resources was devoted to gold mining. Such a tiny diversion of effort would pay for itself many times more, by increasing international liquidity as a

result reducing the danger of exchange crisis. It would prevent the erection of trade barriers or would reduce the need for restrictive trade policies. (UNO-, Measures for International Economic Stability, New York, p.35 and Mac Daugall Donald, The World Dollar Problem, London, 1957, p. 404).

4.9.3.4 No solution for the fundamental problem :

A more fundamental objection to a revaluation of gold was that it was highly doubtful whether the solution to the world's problem really lies in more international liquidity. The prevailing international problems were reflection. Under such circumstances an efficient adjustment mechanism for correcting payment imbalances was necessary. For a structural disequilibrium liquidity was a mere palliative and where there was a fundamental balance in the pattern of international relations liquidity adequate for short term need could always be provided by national or international credit operations not requiring the use of gold (Johnson, H.G., 'The case for increasing the price of gold in terms of All Currencies', the Canadian Journal of Economics & Political Science, May 1950, p.204). This aspect of the available situation was ignored by the advocates of a rise in gold price.

4.9.3.5 Speculation

It was also argued that upvaluation of gold would encourage speculative holding of gold. If the price of gold

was to be raised as the only solution to the liquidity problem, the same would have to be repeated periodically. Such a prospect would encourage speculative withholding of gold. A rise in the price of gold thus instead of alleviating the liquidity shortage would accentuate it through speculation.

It was suggested by many, including Roy Harrod that speculative withholding of Gold from the market would not come about if revaluation was presented as a once over job coupled with strong assurances by all concerned "that no revaluation would ever again be undertaken except in the event of some world economic upheaval or magnitude not less than that of the second world war." (Harrod, A.F. (1965, p.70). There was another proposal proposed by Kiyozo Miyata of Japan and Paul Wannacot of the U.S.A., which was mentioned by Fritz Machlup, (1964, p.72), for raising the price of gold in such a manner that it would discourage speculation. It was suggested that the price of gold should be raised by a small predetermined amount each year. This rate could be fixed, say at 1.5% a year or alternatively \$ 0.50 a year (a decreasing percentage). It was suggested that such a procedure could have a number of advantages,

- 1) Gold production would be stimulated and the closing down of the marginal mines delayed.
- 2) more important, provided that gold hoarders can be convinced that the gradual increases exclude any

hope for a sudden future price increase, part of the hoarded gold stocks should find their way to central banks.

- 3) an interest rate of 1.5 per cent seems hardly tempting to speculators or even to investors, institutional or private;
- 4) the price increase itself would raise the value of all stocks of gold automatically by 1.5 per cent a year, and
- 5) this yearly addition to international reserves would practically fill the gap between increase in world trade and liquidity.

From these arguments of consequences of a rise in price of gold it could be seen that the case for it was based on rather shaky foundations. None of these arguments had been satisfactorily dealt with. The argument that the profit from revaluation should be mopped up by an international agency and then distributed according to some agreed formula assumed too much. It was extremely difficult to get the governments of rich countries to agree to part with the profits that would accrue to them following a revaluation of gold.

The main criticism of gold as a source of international liquidity that the supply of gold depended on the factors which were unpredictable in their operation remained. The supply of gold at that time, for monetary purposes, depended on the productivity of the south African mines, the

hoarders, and speculators' hopes and fears, and the Russian sales in the Western markets. It was too much to leave the stability of international monetary system to the growth in the volume of gold which was assumed to be influenced by a rise in its price. A price would enthrone gold. It was basically inelastic medium of exchange and run counter to the whole particular movement to alleviate the alarms caused by gold and build a better system in which man can have mastery over their monetary affairs.

4.10 Return to the gold standard

European countries and particularly France were the advocates of a return to the gold standard. M.A. Helperin, the main advocate economist, favouring a return to gold standard. He wanted monetary order which could be brought about "only by a restoration of the gold standard. (Helperin M.A. (1963)), "The case for going back to Gold", in World Monetary Reform by Grubel, H.G. (1963) (Ed.); Op.cit., Section No.19).

Jacques Rueff of France was the another advocate of return to gold standard. He persuaded De+Gaulle of France to spearhead the attack on the prevailing gold exchange standard. (Rueff Jacques, "Gold Exchange Standard: A Danger to the West" in World Monetary Reform by Grubel, H.G. (1963) (ed.), selection No.18.)

However, the gold standard as a system of balance of payments adjustment had many defects. Under the prevail-

ing circumstances it was difficult to follow the rules of the game at the cost of domestic equilibrium. The goal of domestic full employment and growth policies were important than the international affairs. Therefore, it was clear that gold standard had little chance of coming back. The political and economic costs of a return to gold standard were too much.

4.11 Birth of Special Drawing Right

However the world had certainly made progress in the direction in which given the will, the supply of international liquidity was controlled without the medium of gold. According to the report of the Study Group of Ten it was clear that there was a genuine case for creation of additional reserve assets to ensure satisfactory rate of growth in world trade. To establish the scheme of SDR within the frame work of the Fund the Articles of Agreement of IMF were amended. The amendment entered into force in accordance with the terms of Articles of XVII of the Fund's Articles.

Thus after the five years of negotiations a new mechanism for reserves creation was found out. The Fund's staff had played an innovative role in designing new mechanism and in getting officials to agree to it and finally the first decision to allocate SDR was taken in 1969 to resolve the liquidity problem.

4.11.1 Salient Features of the Scheme of SDR

The scheme was the integrated development of the ideas of,

- 1) fixed proportion multiple currency reserved,
- 2) mutual drawing accounts with reciprocal obligations,
- 3) a currency or deposit liability issued by general arrangement to borrow.

SDRs, the form of paper gold, created to supplement gold itself and two reserve currencies that was dollar and sterling. SDRs were rights as pieces of papers which other countries would accept in payment of debt as paper gold.

SDRs were not the property of Fund in the first instance. But they were deliberately created by the Fund on behalf of the participants and in the first instances accrued wholly to the participants. These were only the entries in the book of accounts of the participant countries in special drawing account of the IMF. All members were not necessarily the participants. The Fund held the SDRs in the general account and paid interest in the form of SDRs to the excess holders of the SDRs, and received charges in the form of SDRs from borrowers.

SDRs were given to the participants in proportion to their quota in IMF, for settlement of international balance of payment, by central Monetary Authority of the world. SDRs were not used for any other purpose. The use of SDRs was confined to those countries which were suffering from balance of payment difficulties. SDRs were used only to obtain the foreign currencies for international payment and not for converting them into gold. There was

no compulsion to repay earlier borrowings from the IMF while drawing on SDRs. Repayment was necessary only in the case of the use beyond 70 per cent of average allocation over the preceding five years.

SDRs were to be issued for a basic period of five years in regulated amount each year. The decisions regarding the creation of SDRs required 85 per cent majority voting power of the participants.

Gold Value

The unit of value for expressing special drawing right was equal ^{to} 0.888671 grams of fine gold. The rights and obligations of participants and of SDRs were subjected to an absolute maintenance of gold value or to provisions similar to Article IV 8 of Fund's Article of Agreement. With the second amendment of Articles of Agreement of Fund, the problem of valuation of SDR is resolved by introduction of basket valuation for SDR. Initially it was based on 16 currencies but now is based on a basket of the currencies of the five members of the Fund having largest share in international trade and payment, detail is not given because it is not concerned with gold.

4.12 Collapse of Britten Woods System and the role of gold

The two tier system worked successfully for a few years only. The tight money conditions in the U.S.A. kept the official settlement balances favourable in 1968-69. But later on with greater monetary ease, speculative pressure

on the German Mark continued. It reached a peak in May 1971, ⁽¹⁾ and finally Bundes bank was forced to allow the mark to float. However, after that crisis, fear of dollar depreciation led to a rising speculative flow of money out of dollars into other major currencies. By August that flow had become torrent that is in a week \$ 4 billion moved into foreign official reserves and at last on fifteenth August, 1971 President Nixon suspended the dollar convertibility in the official market and imposed a temporary ten per cent surtax on all the U.S.A. imports to allow the dollar to depreciate against undervalued Japanese Yen and West Germany D. Mark, which was not possible. Federal reserve also suspended the swap network. The dollar had of course been inconvertible into gold defacto since about 1965; but in 1971 its convertibility became formal. On sixteenth December 1971 official price of gold raised to \$ 38 an ounce. The free market gold price rose sharply. As a result of the greater gaps between two prices speculation increased with the assumption that there would eventually be the revaluation of the official price of gold.

On 17th, 18th December 1971 Smithsonian agreement was made to substitute the central rate for par value for a number of currencies until all the major currencies including the U.S.A. dollar would resume effective par value. It was also agreed that exchange rate margins should be 2.25% above or below the central rates. It was asked to

devalue the U.S.A. dollar by 7.9% to make it equivalent of rising gold price from \$ 35 an ounce to \$ 38 an ounce.

By early 1973 the pressure of speculation was increasing because of various factors such as

- 1) President Nixon's economic policy was generating inflation in the economy.
- 2) Italy adopted the two tier system for its weakening lira.
- 3) Swiss Franc was allowed to float and West Germany and Japan announced that they had a huge trade surplus of \$ 10-8 billion.
- 4) On 12th February 1973 the U.S.A. announced the devaluation of dollar increasing the price of gold from \$ 38 to \$ 47.22 an ounce. It was also announced that Japan would allow the Yen to float while the U.K., Canada and Switzerland would continue to float their currencies.

As a result gold market price rose to \$ 90 in February. In March it reached to \$ 132 an ounce.

At last the two tier gold agreement was ended on 13 November 1973 by the central bankers of the seven countries' meeting in Basle. They allowed themselves to buy and sell gold on the open market. Arthur Burns, the Chairman of the U.S.A. Federal Reserve Board, in announcing the decision said that it officially recognised the diminishing role of gold as a currency standard.

The Committee of Twenty released its first outline

of reform at the September 1973 IMF Annual meeting in Nairobi, Kenya in which it commented as follows on the future role of gold.

"Appropriate arrangement will be made for gold in the reformed system in the light of the agreed objective that the SDR should become the principle reserve asset. Under one alternative monetary authorities including the Fund would be free to sell but not to buy gold in the market at the market price; they would not undertake transactions with each other at a price different from the official price, which would be retained and would not be subject to a uniform increase. Under another alternative the official price of gold would be abolished and monetary authorities, including the Fund, would be free to deal in gold with one another at a market related price and to sell gold in the market. Another alternative would modify the preceding one by authorizing monetary authorities also to buy gold in the market." (Weston Rae (1980), p. 21).

4.13 Changes in the Role of Gold in the International Monetary System

The decline of the importance of gold in the international monetary system occurred in stages, some time imperceptibly and some times with much commotion. It reflected difficulties experienced with the fixed exchange rate system as it worked under the Bretton Woods agreement. The stages are as follows.

4.13.1 Percentage of reserve currency in the total reserve as reserve asset was growing resulted in substantial decline in the share of gold in international reserves. (Fig.4.1, Table 4.2)

4.13.2 The growing concern about the interest instability of the gold exchange standard, was first articulated by Prof. Triffin in late 1950.

4.13.3 The Gold Pool was established by a number of major industrial countries to stabilize the price of gold as means of stabilizing the exchange rate system in 1961.

4.13.4 The establishment of the two tier system in 1968, that is, private transactions in gold were separated from official transactions. In view of the prospective establishment of the facility for SDRs, it was felt that monetary authorities would no longer find it necessary to buy gold from the market.

4.13.5 The U.S.A. authorities stopped the official convertibility of dollar held by monetary authorities into gold at the par value of the U.S.A. dollar. This effectively ended the gold exchange standard of the post war Bretton Woods monetary system.

These developments made necessary the discussion of possible reforms of the system in the early 1970s, in the Committee of twenty and in the meeting of interim committee. As a result of the discussion the role of gold was gradually reduced. There would no longer be an official prices of gold. The various obligations of member countries to use gold in transactions with the IMF were abolished.

A part of the Fund's gold holdings was sold for the benefit of developing member countries, and that another part would be sold to all the Funds members at the official price. It was also agreed that there would be no action to pay the price of gold.

4.13.6 Second Amendment of the Funds Articles

In the Funds original Articles the role of gold was very important. By the first Amendment (1969), establishing SDRs there were not much changes made in it. But the second Amendment of the Articles, came into effect on April 1, 1978, removed gold from the centre exchange rate system. It abolished the official price of gold and the specific regulation on transactions in gold among member countries. This had prohibited members from purchasing (or selling) gold at a price above (or below) its par value. Second amendment introduced a general obligation for members to collaborate with the Fund regarding international liquidity. It reduced the role of gold as obligatory means of payment between members and the Fund and chalk out the ways for utilizing the remaining gold holdings of Fund.

Important changes made by second Amendment regarding role of gold

4.13.6.1 Gold would not be the common denominator of the par value system and the unit of value of SDR. Therefore, now there are no par values, but it do allow for the re-introduction of a system of exchange arrangements based on stable but adjustable par values. However, these par values

would have to be expressed in terms of SDR or some other common denominator prescribed by the Fund. Gold or another currency cannot be such a common denominator.

4.13.6.2 The official price of gold was abolished through the elimination of the definition of the value of SDR in terms of gold and the value of the Funds holdings of members' currencies are not maintained. Its transactions are in terms of SDR. It affects the dealing in gold among members. There are no restrictions on the freedom of monetary authorities to enter into gold transactions among themselves or with the market, except for general undertaking world liquidity and the role of SDR. The problem of valuation of SDR is resolved by introduction of a basket valuation for SDR, which in turn then define the official price of gold in terms of currencies.

4.13.6.3 The fund was not allowed to reestablish a fixed price for gold.

4.13.6.4 The obligatory use of gold as a means of payment to and from the Fund was expelled. Any use of gold in the future would be voluntary on both sides and would be based on prices agreed for each transactions on the basis of price obtaining in the market. However, acceptance by the Fund of gold in payment requires approval by 85% of the voting power in the Fund's Board of Executive Directors.

4.13.6.5 Use of Fund's remaining gold was regulated

4.13.6.6 Amendment Articles included an undertaking by members to reserve assets so as to achieve better surveillance

of international liquidity and to promote the role of SDR as the principle reserve asset in international monetary system. In short the Fund is to be guided by :

- i) Promoting better international surveillance of international liquidity,
- ii) Making the SDR the principle reserve asset in the international monetary system.
- iii) Avoiding the management of the price, or the establishment of a fixed price in gold market.

Table 4.2 : Total Reserves by Components
(in billions of SDRs unless otherwise indicated)

Years	SDRs			Reserve position in the Fund ¹			Foreign Exchange			Gold		
	Amount	Period to period percentage	Per cent share in total reserves	Amount	Period to period percentage	Per cent share in total reserves	Amount	Period to period percentage	Per cent share in total reserves	Amount	Period to period percentage	Per cent share in total reserves
1951				1.71	-	3.51	13.47	-	27.62	33.58	-	68.87
1952				1.78	3.28	3.60	13.99	3.87	28.33	33.62	0.11	68.07
1953				1.89	6.41	3.68	15.35	9.71	29.91	34.09	1.39	66.41
1954				1.85	-2.47	3.48	16.45	7.18	31.03	34.72	1.87	65.49
1955				1.88	1.90	3.50	16.73	1.70	31.12	35.16	1.25	65.39
1956				2.28	21.18	4.07	17.77	6.21	31.79	35.86	1.99	64.14
1957				2.31	1.53	4.10	17.05	-4.05	30.21	37.08	3.41	65.69
1958				2.56	10.59	4.45	17.08	0.16	29.96	37.82	1.99	65.83
1959				3.25	27.08	5.69	16.11	-5.66	28.20	37.76	-0.5	66.11
1960				3.57	9.86	5.95	18.49	14.79	30.83	37.92	0.41	63.22
1961				4.16	16.48	6.70	19.13	3.46	30.84	38.75	2.20	62.46
1962				3.80	-8.74	6.04	19.90	3.99	31.66	39.16	1.05	62.30
1963				3.94	3.83	5.89	22.69	14.03	33.94	40.22	2.70	60.16
1964				4.16	5.46	6.01	24.22	6.74	35.05	40.72	1.24	58.93
1965				5.38	29.39	7.55	24.02	-0.83	33.75	41.78	2.60	58.70
1966				6.33	17.74	8.69	25.70	7.00	35.29	40.80	-2.34	56.02
1967				5.75	-9.20	7.71	29.41	14.44	39.43	39.42	-3.37	52.86
1968				6.49	12.88	8.34	32.59	10.80	41.87	38.76	-1.69	49.80
1969				6.73	3.66	8.54	33.07	1.48	41.99	38.95	0.50	49.47
1970	3.12	-	3.35	7.70	14.43	8.25	45.47	37.49	48.72	37.03	-4.94	39.68
1971	5.87	88.05	4.75	6.35	-17.48	5.13	75.55	66.16	61.04	36.00	-2.78	29.08

(Y)79

Table 4.2 : (Contd.)

Years	Amount	Period to period percentage	Per cent share in total reserves	Amount	Period to period percentage	Per cent share in total reserves	Amount	Period to period percentage	Per cent share in total reserves	Amount	Period to period percentage	Per cent share in total reserves
1972	8.69	47.86	5.89	6.33	-0.42	4.20	96.95	28.07	65.62	35.69	-0.85	24.20
1973	8.81	1.39	5.74	6.17	-2.47	4.02	102.79	6.25	66.95	35.78	0.25	29.30
1974	8.86	0.58	4.89	8.84	43.39	4.88	127.76	24.29	70.52	35.71	-0.20	19.71
1975	8.76	-1.06	4.47	12.62	42.73	6.44	138.88	8.70	70.86	35.66	-0.15	18.20
1976	8.66	-1.24	3.87	12.74	40.50	7.93	161.77	16.48	72.32	35.50	-0.44	15.87
1977	8.13	-6.04	3.06	18.09	1.99	6.80	203.77	25.96	76.59	36.02	1.48	13.54
1978	8.11	-0.28	2.86	14.84	17.97	5.24	224.17	10.01	79.08	36.29	0.74	12.80
1979	12.48	53.87	4.06	11.76	-20.75	3.83	249.86	11.46	81.34	33.06	-8.91	10.76
1980	11.81	-5.37	3.33	16.84	43.16	4.74	293.12	17.32	82.55	33.33	0.84	9.39
1981	16.41	38.98	4.43	21.32	26.66	5.76	299.01	2.01	80.80	33.30	-0.09	9.00
1982	17.75	8.12	4.86	25.46	19.38	6.97	288.61	-3.48	79.08	33.15	0.88	9.08
1983	14.4	-25.31	3.65	39.1	42.32	9.92	307.30	-1.12	77.96	33.36	-17.84	8.46
1984	16.5	3.01	3.76	41.6	-4.54	9.47	347.8	1.22	79.8	33.32	1.42	8.58
1985	18.2	10.64	4.16	38.7	-6.55	8.85	346.7	0.19	79.33	33.41	10.8	7.65
1986	18.6	5.76	4.40	38.0	.17	8.98	332.8	0.81	78.69	33.40	3.14	7.89

(B)79

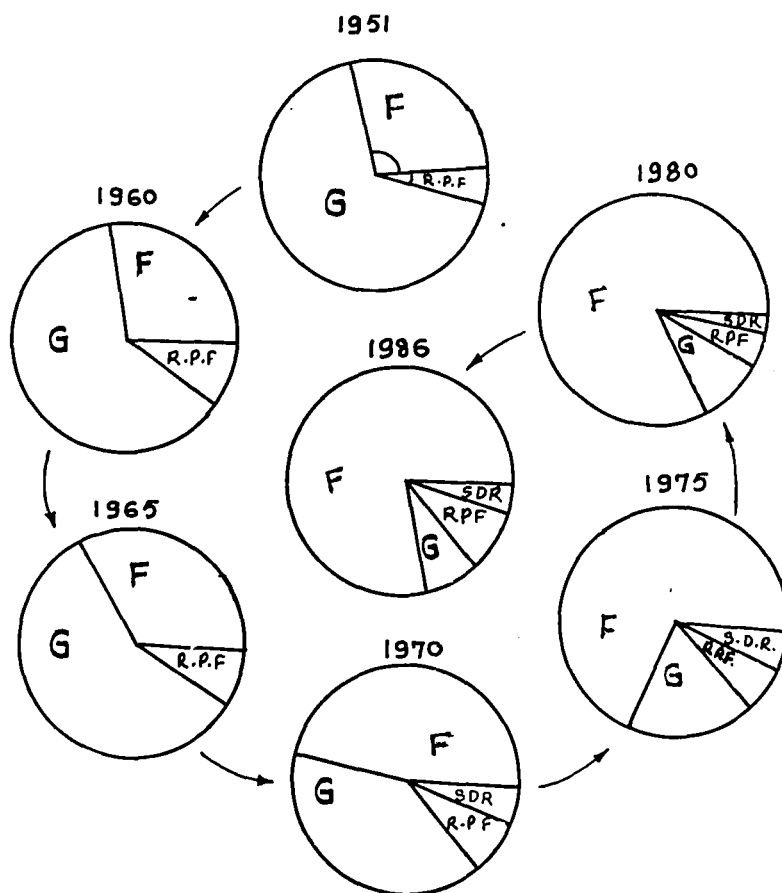
Source : International Financial Statistics, supplement on International reserve Supplement series No.6.

(Gold valued at SDR 35 per ounce.

Percentage changes and percentage shares based on amount in SDRs.)

FIG 4.1

TOTAL RESERVES BY COMPONENTS



F FOREIGN EXCHANGE

G GOLD

SDR - SPECIAL DRAWING RIGHTS

R.P.F. RESERVE POSITION IN THE FUND



CHAPTER - V

GOLD : DEMAND, SUPPLY, USES,

PRICE AND AS AN INVESTMENT

CHAPTER V

GOLD : DEMAND, SUPPLY, USES, PRICE AND AS AN INVESTMENT

5.1 Before 1976, gold price was subjected to extensive intervention by central banks. As a result there was severe price fluctuation in the gold price. After 1971 the political and economic conditions made the price intervention almost impossible to achieve. Later on in 1976 the IMF abolished the official price that was \$ 35 an ounce, which was fixed at the two tier system in 1968. The official price had then become purely traditional. Today gold price is determined by the interaction of supply and demand. So let us see the factors affecting gold demand and supply.

Table 5.1 : The components of the supply and demand for gold

Supply	Demand
- Current production	- Current consumption
- Reprocessed scrap	- in jewellery
- Reductions of processors inventories	- in industry
- Reductions of other private stocks	- Addition to processors inventories
- Reduction of monetary stocks	- Addition to private stocks
	- Addition to monetary stocks

Source : Kettle Brian (1982), p. 104.

Table No.5.2 : World Supply and Demand for Gold 1978, 82
(Converted in tonnes)

	1978	1979	1980	1981 (est.)	1982 (projected)
<u>Supply</u>					
Mining Production (ex-U.S.S.R.)	964	964	933	933	995
Official sales	279	558	217	124	124
U.S.S.R. sales	404	217	93	217	249
Total	1,648	1,741	809	1,026	1,120
<u>Demand</u>					
Fabricated Products	1,306	1,026	342	591	778
Jewellery	995	747	124	373	560
Other Industrial demand	311	280	217	217	217
Official coins	280	280	187	249	342
Hoarding investment in bullion	62	435	280	217	
Total	1,642	1,741	809	1,026	1,120

Note : a. Net of Secondary gold recovery.

Source : J. Aron and Co. (1981/2).

Gold Demand and Supply balanced under the price \$ 400 an ounce.

5.2 Demand for Gold

Thus demand for gold is two-fold :

- 1) Consumption of gold
 - i) Jewellery and art,
 - ii) Dentistry
 - iii) Industry
- 2) Stock piling of gold
 - a) i) Short term speculation
 - ii) Long term speculation
 - iii) Hoarding for safe-keeping
 - iv) Hoarding for traditional reasons
 - b) Official for monetary reserves.

5.2.1 Consumption of gold :

Consumption of gold is the fabrication demand for gold, which is defined as the transformation of gold in bar form to semi-manufactured or final product for industrial or commercial use. Fabrication of gold consists of gold for jewellery manufacture, for electronic and other industrial applications, for dentistry, for official gold coins and for medals, medallions and fake coins (Table 5.2)

5.2.1.1 Income and substitution elasticity of demand for gold

Demand for gold can be analysed in terms of income and the substitution effect. Generally with increase in income and affluence the demand for particularly jewellery increases (other factors held constant). However, the income effect is less marked upon the industrial demand for

gold because it is guided by change in technology and innovations. Lipschitz and Otani in IMF paper (March 1977) have estimated an income elasticity of demand for gold at .6 (that is 1% increase in income leads to .6% increase in demand for gold). These results are not constant because they are completely altered by the rising importance of the organisation of petrol exporting countries (OPEC).

Demand for gold jewellery is also a prestige issue. If the price of silver falls, consumers are unlikely to substitute silver jewellery for gold jewellery. However, if the price of gold itself changes, a different picture emerges. With a fall in the gold prices, there may be reduction in the demand for gold as it becomes a less prestigious product. However, if the fall in price is sufficient, it would become competitive again in its own right. This is because of its physical properties, that is, beauty, resistant to tarnish, etc. Therefore, the quantity of gold demanded would rise again. Lipschitz and Otani estimated the price elasticity of demand for gold at .7 (1% rise (fall) in the price of gold results in .7% fall (rise) in the demand for gold). However, these results also are altered by the existence of OPEC. J. Aron commodities corporation have suggested that the prestige of gold is such that a rise in the price of gold results in an increase in the demand for gold. This has been termed as perverse demand elasticity.

There is also a relation between supply of newly

mined gold and the price of gold, Lipschitz and Otani estimated the price elasticity of supply of gold to be 0.1 / 1% increase (decrease) in the price of gold results in a 0.1% increase (decrease) in the supply of gold.

5.2.2 Demand for Carat Jewellery and Arts

Gold is specially demanded in jewellery fabrication because it is a malleable and ductile metal, beautiful, resistant to tarnish and having intrinsic value. However, the level of consumption, traditional social customs and fashion trends have strong influence on the market for gold jewellery. This industry provides the greatest demand for gold. In Britain 80 per cent of gold traded is in carat gold. In the U.S.A., Handy and Harman, the major suppliers of carat gold alloys to the jewellery industry reported that the largest slice of gold goes to 10 carat alloy for the millions of school award pins, fraternity pins and emblems made each year.

Pure gold is too soft for art and jewellery purpose. Therefore, it is alloyed with other metals. The purity of gold alloy is expressed in terms of 'carat'. The word, 'carat' is derived from the Italian 'carato', the Arabic 'quirat' or the Greek 'keration'. These words mean 'the fruit of the carob tree', having horn like pods containing seeds, which were once used to balance the scales in orient bazaars. The carat number indicates the relative purity of an alloy. Pure gold is described as having 24 carats. Gold is alloyed with other metals silver or copper. Gold and silver forms greenish

alloy and the lustrous colour of gold is reduced, while platinum and gold forms white gold. Gold copper alloy makes gold both red and hard while the triple alloy of gold, copper and silver yields a very malleable alloy which is close to pure gold in colour. A purple alloy is formed with 20 per cent aluminium and 80 per cent of gold, although the result is a rather brittle alloy.

Table 5.3 : The present legal standards for gold in Britain

22 carat	-	916.6 parts gold in 1000 (22 out of 24)
18 carat	-	750 parts in 1000 (18 out of 24)
14 carat	-	585 parts in 1000 (14 out of 24)
9 carat	-	375 parts in 1000 (9 out of 24)

In the U.S.A. Federal Trade Commission allows a tolerance of a half carat, but in other countries no tolerance is allowed. A pure gold surface on carat alloys is achieved by the use of a mixture of potassium nitrate, common salt and alum.

Since 1945 there has been an increase in the demand for gold with the rise in the standard of living of the people. According to Graham Huges (1969) individuals prefer their own jewellery to have an intimate personal touch. However, this type of demand for gold jewellery prevails in developed economies, where the purchases are primarily for the purpose of wearing. In underdeveloped countries gold jewellery is more

often regarded as an investment.

In 1972-73 with the rise in the price of gold, demand for carat jewellery declined and further declined in 1974 with the rise in price of gold. In 1974 the demand for gold jewellery dropped to 7.5 million ounces. In 1975-76 there was a characteristic rise in the demand for jewellery with the situation levelling off in 1977 and 1978. Consolidated Gold Field Limited had given an estimated demand for new jewellery in 1980 of 119.5 tonnes. Italy is the leading fabricator of gold jewellery producing over half of it for export to middle East, the U.S.A. and Europe. One of the world's greatest jewellery factory complex is at Valeza Po outside Milan and Arezzo is also important.

5.2.3 The Industrial Use of Gold

Because of various properties of gold it has a demand in various industries. Gold is a good conductor of electricity, it has contact resistant, can be solderable easily, highly reflexive, corrosion resistant, ductile, stable and wear resistant. Therefore, it is used in electronic and electrical industries, in photography, in architecture, in dentistry and in space applications. As the colour of gold is attractive and stable it is used extensively in decoration.

5.2.3.1 Gold in Electronic and Electric Industries

Use of gold in electronic industry is very important because of the various properties of gold and its alloy. When

the two surfaces of gold are brought into contact with one another, electrical connection is readily established between them. The electric resistance over the contact area is low and stable. Gold can be very easily bonded to other metals, as it is free from obstructive furnish films on its surface. But pure gold contacts are vulnerable to damage by dust-trapped particles of foreign matter and therefore gold-alloys are used to reduce that risk. Because of the above-mentioned property it is easily soldered even after long exposure to corrosive atmosphere and can even be bonded to other metals without the use of solders, by the simple application of pressure or of heat plus pressure. Gold is a very efficient reflector of heat rays and since it does not tarnish, it retains its reflectivity even after long exposure in the atmosphere.

These properties of gold make it a very important metal in the electrical and communication industries. It is also used in the components of computers, calculators, telephone system radio and T.V. equipments, the control system of missiles and space craft. It is used extensively for the electrically conducting elements in electronic circuitry. Some times thin gold coating is used in appropriate patterns of lines upon a non-conducting ceramic base. In some instances where excessive heat is generated in an electronic device, the dissipation of this heat is necessary and is assisted by thick layers of gold in appropriate positions. Semi conductor elements in special microwave transistors and diodes may be

protected, in this way.

Gold is used in 'doping' of semi-conductor especially those which are used in high-speed computing devices. The use of such doped semi-conductor has contributed significantly to the development of modern computing equipments.

Gold brazing alloys (in non-industrial uses, more often preferred to as gold solders) are able to provide a very high resistance to corrosion and to oxidation and are of particular utility for electronic parts required to operate in vacuum as well as the aircraft industry.

In the early 1970s there was a drive to economise on the amount of gold used in electronic application by reducing both the plated areas and the thickness of the gold plate and by increasing the use of alternative alloy. By the mid-1970s virtually all the economies obtainable by those means had been accomplished and from that time the use of gold had reflected quite directly the growth of the electronic industry.

The demand for 'gold for fabrication of electronic equipment is confined to largely to developed countries with the U.S.A., Japan and West Germany consistently being the largest consumers.

5.2.3.2 Gold in Dentistry and Medical Uses

Gold has a high degree of chemical stability; Plaque collects less on its surface when polished than on other materials. It is extremely ductile and yet is able to harden sufficiently when used in cavity. It is comparatively tarnish

resistent in oral fluids. Because of these properties gold is advantageous in dentistry. Four main categories of gold are used in dentistry : 1) Pure gold as an inlay or casting; 2) gold alloy for bonding to porcelain; 3) gold solders; 4) wrought gold.

Pure gold is used as direct filling material because of its ductility, but this material is porous and cannot be used in the areas of the teeth subjected to greater pressure in mastication. Recently gold foil-encapsulated powder and alloyed cohesive gold, both of which add strength and hardness without reducing the cohesiveness of gold filling, have provided improvement in this area.

Porcelain to gold casting alloys have become important since 1950s. Cole (1976) mentions Thermocraft as typifying this form of alloy. Usually gold-Palladium platinum alloys, they are able to match thermal expansion coefficient of dental porcelain which is lower than that of yellow gold alloys. These alloys enable the aesthetic and abrasion resistant qualities of fused porcelain to be combined with the strength and rigidity of the metal content and that the age hardening of the alloy prevents the stress cracking of porcelain in long dental bridge spans.

Dental gold solders are usually gold-silver-copper alloy except where white solder are necessary in which case nickel replaces copper. In dentistry 'solder' is a high temperature technique which would be described in wider industrial use as 'brazing'.

Wrought gold alloy are used for dental and arthro-

dontic plates and wires because of the need for high strength, corrosion resistance and often age hardening. They are stronger than cast structure of similar composition but the development of precision casting technique has led to cast structures increasingly being preferred.

Bates and Knapton (1977, p.53) commented that attempt to replace gold by base metals in fixing restorations have not met with complete success mainly because of shrinkage and lack of hardness in the base metals. The ability of gold to be worked into the complex shapes required for each restorative application is a main factor in its continued appeal.

Price elasticity of demand for gold in dentistry is difficult to assess. It is likely to be somewhat price insensitive. Because of its physical properties and for prestige it may be used. Dentistry demand is also influenced by the existence of the state health insurance scheme.

According to statistics of Gold Field Limited 1981, this demand is dominated by West Germany, the U.S.A. and Japan. Overall the demand has remained stable between 1977 and 1979 despite variations in gold price although it did fall significantly in Japan and U.S.A. in 1980.

Medical Uses

Gold has limited medical uses. It has been used in Europe since 1927 for the treatment of rheumatoid arthritis. It is administered intramuscularly as a soluble salt in continuously increased doses at a level of 25 mg/week.

It is a slow treatment with some benefit after six weeks, but maximum benefit after six months. Gold has also been used tentatively in the treatment of cancer in the form of an injection of a colloidal suspension of radio active gold. For entirely different reasons gold is used in X-ray machines as the target which arrests the electron beam solid gold barriers can be used internally in some patients to protect their vital organs when x-ray or radiation treatment is carried out.

5.2.3.3 Gold in Photography

The original use of gold in photography occurred when it was discovered that treatment with gold chloride greatly improved both the appearance and the permanence of silver mercury amalgam images of daguerrotypes.

Now the recent use of gold in photography is in the making of photo sensitive materials. It has been suggested that the immersion of a film of polymer such as Nylon 6 in a gold solution results in the formation of photo sensitive gold complex on the surface of the polymer, which enable the film to be used for photo copying.

Since the original use till now, various developments occurred in photography and mostly in some techniques used. Gold is used in some form of gold salts.

5.2.3.4 Gold in Architecture

Since Mesopotamia (3000 B.C.) gold use could be seen on the domes of large buildings and churches, on the

glinding of the roof, etc. That use was due to the in-destructability of gold. However, recent use of gold in architecture is as energy saving device. Gold plating as a covering preserves the structure underneath and reflects infra-real heat which keeps the interior area cool. The use of reflective glass units with a microscopically thin (about .002 microns) coating of pure gold between two layers of glass applied on the airspace side of the inboard or the outboard pane of insulating glass unit, allows a low transmission of solar rays and high insulating efficiency. Gold insulating glass facing full, direct outside sunlight provides a total indoor heat gain of approximately 31 British Thermal Units (B.T.U.) per hour per square foot of window area, compared to 116 BTUs for glass coated with nongold metals and 310 BTUs for single coated with nongold metals and 310 BTUs for single sheet ordinary window glass. Another major advantage of gold insulating glass is its ability to reflect interior heat back into the building. Gold plates glass has 80 to 40 per cent better transmittance value than ordinary and most other forms of insulating glass.

Recent development allows the provision of gold reflecting glass in tonnes and hues that range from bright gold to bronze, coral azure most shades of blue to silver.

Gold leaf is economical to use in architecture because it is protective and durable and particularly because one troy ounce of gold can be beaten into 75 square feet of gold leaf.

5.2.3.5 Demand for gold for gold medals, Medallions and Fake Coins

According to Rae Weston (1983, p.58) 'medal' refers to a cast, engraved or die impressed small disc or piece of metal struck by a government institution company or private individual to commemorate a specific event of person.

A 'Medal' usually has no monetary function or value, but it is struck on both sides as a coin.

A 'Medallian' is a medal of two inches or more in diameter and may only be struck on one side.

The Fake coins usually refer to fascimiles of official coins.

For acquiring bullion people have been holding medals and medallions. But in recent years many countries are allowing their citizens to hold gold bullion. Therefore, demand for medals and medallions is reduced. However, because of the increasing number of countries and institutions there has been an increase in the production of medals and medallions to commemorate special events or anniversaries.

In developing countries people invest in fake coins as bullion investment. But demand for fake coins is quite price sensitive. Soudi Arabia is the traditional manufacturer of fake coin. In the period 1975 to 1979 the fake coin business flourished in Soudi Arabia because of the increase in purchasing power and extensive buying by immigrant workers.

Demand for gold in this category declined substantially in 1980 falling to 15 tonnes while in 1978 and 1979 it was 50 and 33 tonnes respectively. Now the major market for this is U.S.A., which started a programme for the production of medallions in 1980. The U.S.A. plans to strike a series of medallions over a period of five medallions years at a rate of 10,00,000 ounces per year.

5.2.3.6 Official Coins

There are two categories of gold coins, 1) 'bullion coin', for which the price is determined by its gold content. 2) 'Numismatic coins', whose value is derived from their rarity, condition and beauty. Numismatic coins are traded by numismatists while gold bullion coins are traded by bullion dealers.

Gold bullions and bullion coins have individual price pattern and they involve a handling fees, minting fees, transportation fees, insurance and distributors and retailers profits. This fee usually refers to as a premium normally represented about 5 per cent of the value of this coin.

However, numismatic coins have individual price pattern that reflects the rarity, age, quantity produced and condition and beauty of each coin. Condition of coin is classified according to the Red book grading system and also by rarity.

As it is necessary to keep numismatic coins in as perfect condition as possible. They are seldom handled and

often held in bank — safety deposit boxes. Coins are purchased at the asking price of suppliers and sold at their bid prices.

The major issuers of official gold coins are South Africa, the U.K., Mexico and Canada.

According to Modern Gold Coinage, in 1979, 230 legal tender gold coins were issued by 80 countries, using a total of 9.9 million ounces of troy gold and in 1978 only 48 countries issued gold coins.

According to Gold 1981 published by Consolidated Gold Field Limited, during 1980 an estimated 234 tonnes of gold (net) was issued for manufacture of official coins.

In 1980 the South African Krugerrand was the dominant coin in world markets. It is a gold bullion coin that is the legal in its country of origin. It contains exactly one troy ounce of fine gold and weighs 1.0909 troy ounce in all. To make the Krugerrand sturdy, usable and desirable gold coin it is alloyed with pure copper making it 22 carat. (.91666 fine) but still containing one ounce of pure 24 carat gold. The Maple Leaf, the legal tender coin of Canadian government is also 24 carat of gold. It is the only bullion coin of pure gold having a diameter of 30 millimeters and a thickness of 2.8 millimeter. The Obverse has a maple leaf and reverse had a portrait of Queen Elizabeth II.

Gold 1981 stressed that 1980 like 1979 was a record year for gold coin production in the U.K. Gold used in

fabrication of proof sovereigns and gold coins for foreign countries gives a total for 1978 of 59 tonnes while ten year early it was 0.7 tonnes only. Demand for Mexico 'Peso' remained high in 1979 and the government mint doubled its output from 23 tonnes in 1978 to 46 tonnes in 1979.

5.3 Stockpiling of Gold

The second factor affecting the demand for gold is the stock pilling of gold. It contains private stock pilling including :

- 1) short term speculation.
- 2) long term speculation.
- 3) hoarding for safekeeping.
- 4) hoarding for traditional reason and official stock pilling for monetary reserve.

5.3.1 1) Private Stock Pilling

It has been mostly motivated by expectations that gold will appreciate in terms of money recently. The buyers have faith that gold investment as a store of value maintains its value more securely than money or securities. The buyers try to seek protection against inflation. They do not speculate. They are chiefly influenced by rumours, news reports, political developments, particularly in Middle East and South Africa, the price of energy and by financial analyst, newsettlers. The buyers expect the appreciation of gold in terms of money as gold production is going to be reduced and/or gold consumption is increasing at a fabulous rate each year or as all other commodities have their prices more than doubled in recent

years and the price of gold will necessarily catch up with the rest.

There is a fundamental difference between hoarding of gold and speculation in gold. Hoarding for 'safe keeping' involves the holding of part of one's personal wealth in the form of gold, independently of price expectation other than for at least a reasonably stable price. There may be different motivation, such as it is convenient to concentrate wealth in the form of gold (which makes it easier to hide and transport secretly), or more often to avoid taxes.

The hoarding for traditional reasons of gold, silver, other precious metals and gems reflects a way of life in the Near Middle and far East. The predominant factor is the lack of readily available alternatives for storing one's wealth such as local bank accounts, foreign bank accounts, and local securities markets. Traditions such as inheritance laws and the right of a women to own and hold precious metals and gems (separately from her husbands property) often play a major role. Local customs and social prestige often place emphasis upon visible wealth in the form of ornaments with less prestige being associated with less visible forms of wealth such as bank deposits, stocks and bonds.

Thus, both hoardings are relatively insensitive to either price of gold or changes in price of gold, while speculation, which is very sensitive to actual and expected changes in the price of gold. That is hoarding is guided

by the factors outside the gold market and therefore rate of hoarding or dishoarding is relatively independent of the price in the gold market. Actually it is impossible to disentangle speculation and hoarding. Consolidated Gold Field Limited called them together 'bullion holding', and calculated this total by estimating the supply of gold to the non-communist private sector and subtracting from it total for gold fabrication. But there has been considerable variability in this over a period of time.

According to 'Gold 1980, during 1979 there was a major increase in the physical gold which was transferred in this manner. Taiwan was the largest recipient with 68 tonnes followed by Hong Kong and Indonesia with 25 tonnes and 23 tonnes respectively. These uncertainties were due to the U.S.A's recognition of Peking and the subsequent exclusion of Taiwan from the IMF. Statistics estimated for Turkey with 16 tonnes, Singapore with 12 tonnes and Thailand with 10 tonnes. Dishoarding took place from Kampuchea, Vietnam, Iran and Saudi Arabia.

"India has the world's largest stock of privately hoarded gold estimated unofficially at 5,000 tonnes. The mobilisation of this gold could affect the international market also, besides improving economic conditions in the country. But this is unlikely to happen unless a social revolution takes place." (Times of India, Directory and Year Book 1974, p.275).

Gold hoarding in India takes the form of bullion, ornaments and jewellery. The National Geographic (White and

Stand Field, 1974) study on gold describes gold's uses to India, as

"This (Hindu) tradition says that gold is the noblest of metals, one of the foremost among the things pure and auspicious. When a father sees his new born child, he should touch it with gold, when the person leaves the world, on the burning pyra, a speck of gold should be put in the mouth. Wearing gold brings prosperity and luck, giving it removes one's sins. Gold kills infections, advises a distinguished doctor of Hinduism's-traditional Aurvedic medicine. Does your body have a deficiency? Gold will fill it. Take these pills. You will feel spring in your life". (Times of India, Directory, 1974, p. 278).

According to Reserve Bank of India (RBI) Publication (April 1958) the private gold stocks were around 105 million ounces including estimates of gold smuggling made in the Report of the Forward Market Commission.

The RBI (1977, p.167) noted that "The borrower's natural anxiety to regain possession of their jewel acts as an automatic incentive for timely repayment."

5.3.2 Smuggling

There are official restrictions on the holding of gold or trading in many countries. But as the gold holding is the best form of storing wealth in countries with soft currencies; these restrictions have not prevented the movement of gold but only made those movements more difficult to quantify.

In the less developed African countries and in Latin American operation this smuggling from mines has been a serious problem.

5.3.3 Dishoarding of 1980

Dishoarding of gold 1980 was the result of the increased gold prices during the Napoleonic wars, the post gold standard; 1930's and 1974.

Timothy Green (1980, p.29) estimated that 5 million ounces from India and Middle East came on to London and Zurich Market, mostly in the first quarter of 1980. More than two million ounces was dishoarded from the Far East and about 600,000 ounces moved from South America to the U.S.A. He noted that Iran, India and Indonesia as major sources of dishoarding.

David Potts (1981), editor of Consolidated Gold Field Limited Gold (1981), in the paper presented at the Institute of Mining and Metallurgy Conference in London said about 1980 dishoarding,

"The real lesson from that high level of dishoarding had been that it could be said that there was no shortage of gold. If demand were sufficiently strong, the rather limited supplies of gold that came from the regular suppliers were quickly taken up. At that stage the price would start to rise rapidly, if demand remained persistently strong, until a trigger point was reached when abundant supplies of dishoarding gold came on the market.

Hoarding or dishoarding not only occur due to gold price change but also due to appreciation or depreciation of currencies in which saving would otherwise be held.

It is true that purchases of gold for official or monetary purposes or for private investment or hoarding are subject to unpredictable variations which arise in considerable measure from political economic, or financial changes and the changes in interest rates and inflation rates which accompany them.

5.3.4 Official Gold Holding

Official demand for gold comes from the central banks, IMF or organisations whose gold transactions decisions are taken by government. According to David Potts, the chief gold analyst of Consolidated Gold Field Limited, the purchases from third world have been small but regular. Indonesia purchased 1.49 million ounces (46 tonnes) during the first four months of 1980, while Taiwan, Pakistan, the Phillipines, Colombia, Libya, Iran, Bolivia and Peru all acquired lesser amounts.

5.3.4.1 Why do central banks hold non-interest bearing gold?

Reasons

1) Central bankers stress that it is the unique asset which is not the liability of other country. Foreign exchange or money market paper or bank deposits are reserves but are the liabilities of another country. There is a belief that gold holding in some sense increase a country's sovereignty.

2) The foreign exchange risk to a central bank on its gold reserves is limited to a possible fall in the price of gold or to an appreciation of its own currency vis-a-vis gold. If the reserved foreign currency is devalued the holding country of that currency also will be in trouble.

3) The possibility of a universal rise in the price of gold as occurred in early 1980's. In some countries specially in Europe this demand is motivated by the desire to display respectably large gold stock to people having lived through the inflation of the past half century, keep an eye on the state of the nations monetary reserves as a vital indicator of the soundness of its domestic fineness.

According to IMF source at the end of September 1980

Gold in the Reserve

the U.S.A. had	8227 tonnes of gold.
IMF had	3217 tonnes of gold.
the European Monetary System members	2664 tonnes of gold.
West Germany	2961 "
Switzerland	2590 "
France	2546 "
Italy	2074 "
Netherlands	1364 "
OPEC	1207 "

The U.S.A. holding is approximately 28 per cent of the total gold held by the non-communist countries.

5.4 The Supply of Gold

5.4.1 There are five sources of world gold supply.

- 1) ~~current~~ production from old and new mines and improved mining techniques.
- 2) reprocessed scrap.
- 3) a reduction of processors inventories.
- 4) reduction of other private stocks.
- 5) reduction of monetary stocks.

(See Table 5.2)

David Potts (op.cit) estimated that some 100,000 tonnes of gold (3,215 million ounces) have been minted since any one first thought the metal worth digging up. In addition, official gold holdings are equivalent to some 25 years production at current rates.

The South African Gold Coin exchange estimates gold production at 26 tonnes in sixteenth century, 45 tonnes in seventeenth century, 90 tonnes in eighteenth century, 4864 tonnes in nineteenth century and (up until 1977), 77393 tonnes in the twentieth century.

Since the discovery of America there was sudden increase in the supply of gold. The first increase in production was in the sixteenth century when the spaniards seized the treasures gathered by the Aztecs and lucas in Mexico and Peru. Then a greater increase quickly followed the discovery of placers in california and in South-Eastern Australia in 1848 and 1851 respectively. The California

production was supplemented by gold from many new districts in the North American Cordillera and the pre-Cambrian shield of Canada, among which the Comstock, the Black Hills, the Yukon and Alask, found in the Nineteenth century and Cripplecreck Tonopah and Gold field, in the present century, as well as porcupine, Kirkland lake and many other Canadian districts deserve mention. Gold also was supplied by many new mines in Western Australia, the Phillippines, the Gold coast and elsewhere in that period. The discovery of gold in Transval in 1886 is the outstanding event and the development of a succession of mines in this immense region that before the turn of the century made it by far the major Gold field of the world. Today also it's very important source of gold supply.

5.4.2 World Gold Production

Gold has been discovered in all five continents of the world. In U.S.A. its distribution lies mainly down the west coast from Alaska in the north down through the great extruded mass of the Rockies into Mexico and the northern half of South America; a secondary gold producing area can be defined southwards from Quebec to the South Eastern area of the U.S.A. The principle European deposits have extended from the British Isles South-Eastward through France and along the line of the Alpine and Bulkan mountains ranges together with North-Western, Central and southern and eastern India and the Hindukush have produced gold together with Korea,

the Chinese littoral and Japan. The pattern of these latter deposits spreads downwards through the Eastern archipelago into Australia and New Zealand. Finally the African continent which has produced gold in its central and western zones as well as the regions of upper Egypt, Nubia and Ethiopia and the southern plateau.

Geographically the world's gold supply is dominated by production from two countries, South African and the U.S.S.R. But there is a great deal of secrecy about the U.S.S.R. gold production.

5.4.3 South Africa as a gold producer

In South Africa Gold occurs in native form deposited on quartz pebbles cemented together by more quartz to form hard conglomerates known as reefs. The reefs occur in layers and dip at varying angles and are of thickness varying between a few inches and several feet. All the mining is underground (as opposed to open out) at the present time the reef is extracted by blasting horizontal section of rock about 4 feet high which include the reef. The material thus brought down is then handed to the surface and anything that is obviously not reef, is removed. The remainder is sent to reduction plant for the gold to be extracted. South Africa has seven gold fields with 37 major gold mines forming 'Golden Arch' strengthening 500 Kilometers across its centre. African two major gold mines, namely Vaal reefs and West Driefontein, produce more gold in a year than Canada.

The value of South African gold output in 1979 was some R₆ billion and rose to R₁₀ billion in 1980. In recent years the centre of gravity of South African production has shifted away from the West, Central Land East Rand areas and the bulk of current production is now from the Orange Free state, Klerk drop and Far West Rand gold mining areas.

South African supplies $\frac{2}{3}$ of the total non-communist gold production. This proportion is falling slightly from 77% in 1969 to 73% in 1979. In 1980, 675.0 tonnes gold was produced. This production of 1980 was the lowest output for some 20 years. 46% of its exports was derived from gold sales in 1979 and 50% in 1980.

In South Africa recently lower graded ore is used. In 1979 the average grade was 8.2 grams per tonne, compared to 9.4 grams per tonne in 1978. Between 1972 the grade was 12.7 grams per tonne while in mid 1980 the grade of the ore had fallen by approximately 35%. This shift to lower grade ore is due to rise in price of gold and the exhaustion of higher grade ore.

Gold production is important to South African economy. It provided 20% to 21% of Gross National product and produced revenue of the order of \$ 12 billion. This G.N.P. was sufficient to sustain a rate of economic growth of 8%.

5.4.4 The U.S.A. and Canada - Gold Producers

Canada is the second largest non-Communist gold producer which has consistently produced 6% of free world output.

According to Consolidated Gold Field Limited's estimation, Canadian gold production for 1980 was 49.3 tonnes compared with 51.1 tonnes in 1979. At the end of 1979 there was 21 operational gold mines in Canada where the scale of operation of each mine was very small compared with South African mines. The principal gold mining provinces are Ontario (39% of production, Quebec (29%), British Columbia (16%) and North West Territories (11%). The U.S.A. gold output rose dramatically in 1850's but price fixed for gold that is \$ 35 per ounce of fine gold. At the beginning of 1970's only four of the nation's 25 gold producing mines were searching for gold in a major way. The others were simply producing it, as a byproduct of other metals. Kennecott Copper with its major operation in a mountain range near Salt Lake City, produces over 20% of the U.S.A. gold output as a byproduct of copper.

Gold production in the U.S.A. has consistently accounted for 3 to 4 per cent of non-Communist gold production. Production declined in 1980 to 27.6 tonnes from 30.2 tonnes in 1979. Gold was mined in 12 states in 1979 of which South Dakota with its Homestake mines was the leading producer at 7.8 tonnes (251,000 ounces). Second position was held by Utah where gold is produced as a byproduct of the Bingham copper mine to a total of 7.4 tonnes. Nevada, the home of the Carlin mine and Arizona contributed 6.5 and 3.1 tonnes respectively and the four states which have been mentioned accounted for 88% of U.S. production.

Homestakes new deposit is in California. Annual output was estimated at a minimum of 100,000 ounces of fine gold over at least the next ten years.

Gold 1980 reported a sharp rise in Brazilian gold output in 1979 to an estimated 26.1 tonnes from revised estimate of 22 tonnes in 1978. Gold 1981 reported a further rise to 35 tonnes in 1980. There are 30,000 gold prospectors or 'garimpeiros' in the Amazon basin the widest gold mine in the world. Australian gold production fell to 17.3 tonnes in 1980 partly as a result of labour disputes.

5.4.5 The U.S.S.R. and People's Republic of China as gold producers

There is a great deal of secrecy about U.S.S.R. gold production. No production figures ever being issued. But information can be obtained through the fact that Russian gold sales normally takes place through Zurich and London and by translating and collecting the press reports and technical papers which are available in the West.

Siberia is the main gold producing area along the bank of the river Lena. The deposits are generally strip mined using huge machines. Russian do allow a system reminiscent of California during the gold rush, individual panning and mining by licensed operators, having bulldozers of their own. The miners have to give gold to the state and are paid according to its value. In U.S.S.R. byproduct gold output is an important source of gold accounting for about 20 per cent of the total output.

Muruntau in Uzbekistan is the important single mine in the U.S.S.R. It is the largest in the world with annual output of amount 80 tonnes.

5.4.6 People's Republic of China

There is no secret about its gold output. Shandong, Heillongjung, Hubei and Guangii are the four important gold provinces in China, According to Consolidated Gold Field Limited's estimation the gold production was 30 to 60 tonnes a year in 1979. Recently China claimed that they found 27 new Gold Mines.

5.4.7 Recovery of Gold from Scrap

There are three types of gold scraps :

- 1) Accumulation of gold clipping, that is shavings and imperfect moulds by manufacturing jewellers and other gold processors which is beneficial particularly when the price is rising.
- 2) Recovery of gold scrap from used or obsolete articles often in the electrical and electronics industries.
- 3) Old jewellery given up by customers or other forms of processed gold. During 1979-80 this source was very important. This source has exceeded new production since 1975. In 1980 it was more than twice of the size of the U.S.A. domestic mine production.

Scrap forms in different industries

Jewellery : Sweepings, grindings, filed scrap, flakes

feelings, punch outs, solutions, sludges wires and wipe rags.

Electronics : Contracts, diodes, foil, paste, plated parts, wire, solutions, powder, printed circuits, boards, punch outs, components, resins, plating transistors, wire and wipe rags.

Dentistry : Alloy, scrap, sweeps and grinds.

Coins : Punch outs, demonetised coins, etc.

Actually as these are various forms of gold scrap, reclamation of gold from it is very difficult but is the primary mining has become costly, it is becoming worth while to recycle as it is above ground source of gold. Recycling of gold scrap is carried out only it in those countries which are largest consumer and generator of scrap such as North America, Japan and Europe.

5.4.8 Supply of gold from Communist Block by Sales

For financing its deficit trade with Communist Block made substantial sales over the period 1953 to 1965. Then since 1971 again to face the poor harvest they had to import wheat from U.S.A. and also to import the expensive western technologies, Communist Block sold gold to the world.

According to Consolidated Gold Field Limited estimation for 1979 net sale was 199 tonnes. For 1980, 90 tonnes which was 54 per cent less than the previous year.

Table 5.4 : The U.S.S.R. Gold Sales (in million ounces)

<u>Year</u>	<u>Sales</u>	<u>Year</u>	<u>Sales</u>
1971	1.7	1977	12.8
1972	6.8	1978	13.1

(cond.)

1973	8.8	1979	6.3
1974	7.0	1980	2.6
1975	4.7	1981	7.4
1976	13.2		

Source : (Consolidated Gold Fields)

The U.S.S.R. gold sales are usually made through it's own Wozchod Handel bank in Zurich. The Gold sales were made for acquiring foreign exchange. In 1981 Soviet sales rose very sharply and that increase in supply had been a major depressing factor on the market in that year.

5.4.9 Official Gold Sales

The official gold sales started in 1966 and have continued through to 1979 with no sales occurring in 1969, 1970, 1972 and 1980.

5.4.9.1 The U.S.A. Treasury Gold Sales

To down grade the role of gold on 20th May 1978 the U.S.A. treasury announced that it would hold at least six monthly auction and at each auction 3,00,000 ounces (9.33 tonnes) of gold would be offered. First auction was on 23rd May 1978. During 1978 some 126 tonnes were sold. The U.S.A. treasury held auctions in 1979 of varying amounts of gold in each month except December and sold total 365 tonnes (11.75 million ounces). Most of the buyers at its auctions were foreign banks and ^{dealers} ~~dealers~~, most notably Dresdner Bank of Frankfurt, which spectacularly purchased 96 per cent or

Table 5.5: The U.S. Treasury Gold Sales held in 1979

Date	Amount offered and sold (in tonnes)		Average prices		Total amount bid for (in tonnes) (both qualities)	Number of successful bidders (both quantities)
	995 fine	900 fine	995 fine	900 fine		
16-1-79	31.10	15.55	219.71	218.22	211.50	32
22-2-79	31.10	15.55	252.38	251.42	102.64	16
20-3-79	31.10	15.55	241.30	240.09	90.20	28
17-4-79	31.10	15.55	230.96	230.17	102.64	29
15-5-79	-	23.33	-	254.92	74.65	6
19-6-79	-	23.33	-	279.02	62.21	16
17-7-79	-	23.33	-	296.44	65.32	10
21-8-79	-	23.33	-	301.08	71.54	3
18-9-79	-	23.33	-	377.78	80.87	4
16-10-79	-	23.33	-	391.98	37.32	8
1-11-79	-	38.88	-	372.30	47.59	11

7,20,000 ounces of the gold sold in the August 1979's auction (Table 5.5)

The important reason for the U.S.A. treasury gold sales was the need to improve the country's trade deficit. So the volume of treasury sales turned the U.S.A. into the net exporter of gold and reduced bullion imports into the U.S.A. from 7.9 million ounces in 1977 to 4.4 million ounces in 1978.

Another reason was to downgrade the role of gold in the world monetary system. As there was hoarding of gold because of rising prices, the supply of gold was very unstable and volatile to provide the sure basis for international liquidity and whatever new gold was produced largely in demand for commercial and industrial uses. Therefore, the amount left for monetary use was very less. Therefore, through Treasury gold sales the U.S.A. tried to show that the U.S.A. set no special store of gold and was willing to sell it off like any other commodity.

5.4.9.2 IMF Gold Sales

In 1976 the IMF announced its decision to sell one sixth of its gold to the market over a four year period (that is 8% of total gold supplies). As in August 1976 the IMF Interim Committee announced that, as a part of a package to reform the monetary system it had agreed to abolish the official price of gold that is, SDR 35 per ounce and to authorise the IMF to reduce its gold holding by one sixth

(25 million ounces or 1555 tonnes in total) by selling at market related prices and to make a restricted distribution of a further 25 million ounces.

Therefore, the Fund held in all 45 public auctions in which it awarded 23.52 million ounces (731.6 tonnes) to 61 bidders on competitive bids and 1.48 million ounces (46.0 tonnes) to 13 monetary authorities on non-competitive bids. The proceeds of these gold sales amounted to \$ 5.7 billions of which \$ 1.1 billion represented the capital value equivalent to SDR 35 an ounce that was added to the Fund's general resources and \$ 4.6 billion represented profits that were channeled to the Trust Fund for the benefit of developing member countries. Of the total profit \$ 1.2 billion are being transferred directly to 104 developing countries in proportion to their quotas on August 31, 1975. The remainder of the profits are available for loans by the Trust Fund to eligible developing members that adopt adjustment programmes to strengthen their balance of payments positions. By May 1980 Trust Fund loans equivalent to SDR 1.9 billion had been made to 50 developing country members and an additional amount of approximately SDR 1 billion is available for some other purposes.

Consolidated Gold Field Limited estimated that 544 tonnes were supplied to the non-communist private sector during 1979 as a result of reported sales by IMF and the U.S.A. together with their estimate of sales and purchases, they considered were the result of government decisions. This represented some 32 per cent of the 1979 new gold supply (Table 5.6).

Table 5.6 : Fund Gold Auction : June 2, 1976 - May 7, 1980

Date	Place of Delivery	Ounces Bids (Thousands)	Ounces Awarded (thousands)	Subscription Ratio ¹	Ounces awarded to Non-competitive Bidders (thousands)	Competitive Bids				Number of non-competitive Bids	Price range of Successful Bids (U.S. \$ per fine Ounce)	Average Award Price	Profits (in millions of U.S. dollars)
						Number of Bidders		Number of Bids					
(1)	(2)	(3)	(4)	(5)	(6)	Total	Successful	Total	Successful	(11)	(12)	(13)	(14)
<u>1976</u>													
June 2	New York	2,320.0	780.0	2.97	-	30	20	220	59	-	126.00 - 134.00	126.00	67.10
July 14	New York	2,114.00	780.0	2.71	-	23	17	196	56	-	122.05 - 126.50	122.05	64.00
Sept. 15	New York	3,662.4	780.0	4.70	-	23	14	380	41	-	108.76 - 114.00	109.40	53.82
Oct. 27	New York	4,214.4	779.0	5.40	-	24	16	383	37	-	116.77 - 119.05	117.71	60.25
Dec. 8	London	4,307.2	780.0	5.52	-	25	13	265	33	-	137.00 - 150.00	137.00	75.35
<u>1977</u>													
Jan. 26	New York	2,003.2	780.0	2.57	-	21	15	192	49	-	133.26 - 142.00	133.26	72.50
Mar. 2	New York	1,632.8	524.8	3.11	-	21	7	187	14	-	145.55 - 148.00	146.51	55.60
Apr. 6	New York	1,278.0	524.8	2.43	-	18	11	136	22	-	148.55 - 151.00	149.18	57.02
May 4	New York	1,316.4	524.8	2.51	-	17	14	107	38	-	147.33 - 150.26	148.02	56.37
June 1	New York	1,014.0	524.8	1.93	-	14	13	75	35	-	143.32 - 150.00	143.32	53.87
July 6	Paris	1,358.4	524.8	2.59	-	15	15	83	35	-	140.26 - 145.00	140.26	52.16
Aug. 3	London	1,439.2	524.8	2.74	-	18	16	136	44	-	146.26 - 150.00	146.26	55.31
Sep. 7	New York	1,084.4	524.8	2.07	-	15	11	115	21	-	147.61 - 149.65	147.78	56.24
Oct. 5	New York	971.2	524.8	1.85	-	17	12	103	32	-	154.99 - 157.05	155.14	59.97
Nov. 2	London	1,356.4	524.8	2.58	-	18	7	90	21	-	161.76 - 163.27	161.86	63.29
Dec. 7	New York	1,133.6	524.8	2.16	-	19	19	108	58	-	160.03 - 165.00	160.03	62.13
<u>1978</u>													
Jan. 4	New York	984.8	524.8	1.88	-	19	19	103	64	-	171.26 - 180.00	171.26	67.68
Feb. 1	Paris	598.4	524.8	1.14	-	17	17	76	62	-	175.00 - 181.25	175.00	69.65
Mar. 1	New York	1,418.0	524.8	2.70	-	19	16	127	76	-	181.13 - 185.76	181.95	72.92
Apr. 5	New York	1,367.6	524.8	2.60	-	21	15	122	30	-	177.61 - 180.26	177.92	70.78
May 3	London	3,104.0	524.8	5.91	-	24	17	192	36	-	170.11 - 171.50	170.40	66.83
June 7	New York	1,072.4	470.0	2.28	925.2	21	15	137	28	5	182.86 - 183.92	183.09	195.64
July 5	New York	797.2	470.0	1.70	20.8	22	19	101	44	2	183.97 - 185.01	184.14	68.96

(1)	(2)	(3)	(4)	(5)	-	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Aug. 2	New York	1,467.6	470.0	3.12	70.0	21	20	117	42	2	203.03 - 205.11	203.28	85.84
Sep. 6	New York	773.2	470.0	1.65	133.6	20	10	189	25	2	212.39 - 213.51	212.50	101.42
Oct. 4	London	805.6	470.0	1.71	134.4	18	12	76	25	1	223.57 - 224.62	223.68	107.74
Nov. 1	New York	689.6	470.0	1.47	80.0	14	7	50	24	1	223.03 - 230.00	224.02	98.37
Dec. 6	Paris	1,965.2	470.0	4.18	20.0	16	13	102	31	1	195.51 - 196.75	196.06	74.23
<u>1979</u>													
Jan. 3	New York	1,479.6	470.0	3.15	16.4	17	9	159	23	1	219.13 - 221.00	219.34	84.73
Feb. 7	New York	1,489.6	470.0	3.17	59.2	19	5	123	11	1	252.47 - 252.77	252.53	109.60
Mar. 7	London	1,534.4	470.0	3.26	-	18	17	127	50	-	241.28 - 243.26	241.68	92.62
Apr. 4	New York	1,186.8	470.0	2.53	-	17	14	107	44	-	238.71 - 240.27	239.21	91.37
May 2	New York	1,514.8	470.0	3.22	20.0	20	17	155	56	1	245.86 - 247.01	246.18	98.79
June 6	New York	1,452.4	444.0	3.27	-	19	5	109	19	-	280.22 - 281.37	280.39	104.73
July 3	New York	1,518.8	444.0	3.42	-	20	13	113	23	-	281.06 - 281.87	281.52	104.84
Aug. 1	New York	1,138.8	444.0	2.56	-	20	16	133	63	-	288.95 - 291.07	289.59	107.84
Sep. 5	Paris	1,646.0	444.0	3.71	-	21	4	81	6	-	232.01 - 333.50	233.24	127.73
Oct. 10	New York	665.6	444.0	1.50	-	16	9	52	15	-	412.51 - 420.00	412.78	163.20
Nov. 7	New York	1,798.4	444.0	4.05	-	16	13	189	53	-	391.77 - 389.01	393.55	154.26
Dec. 5	London	1,746.0	444.0	3.93	-	18	15	97	38	-	425.40 - 429.31	426.37	169.27
<u>1980</u>													
Jan. 2	New York	1,342.4	444.0	3.02	-	10	5	52	10	-	561.00 - 564.01	562.85	229.17
Feb. 6	New York	1,939.6	444.0	4.37	-	17	5	80	8	-	711.99 - 718.01	712.12	295.24
Mar. 5	New York	1,412.4	444.0	3.18	-	16	14	84	54	-	636.16 - 549.07	641.23	263.62
Apr. 2	New York	502.8	444.0	1.81	-	16	16	69	66	-	460.00 - 503.51	484.01	194.97
May 7	New York	1,822.0	443.2	4.10	-	21	21	285	67	-	500.20 - 511.15	504.90	203.51
Total ²			23,517.5		1,480.3								4,640.44

1 The ratio of total bids to the amount on auction.

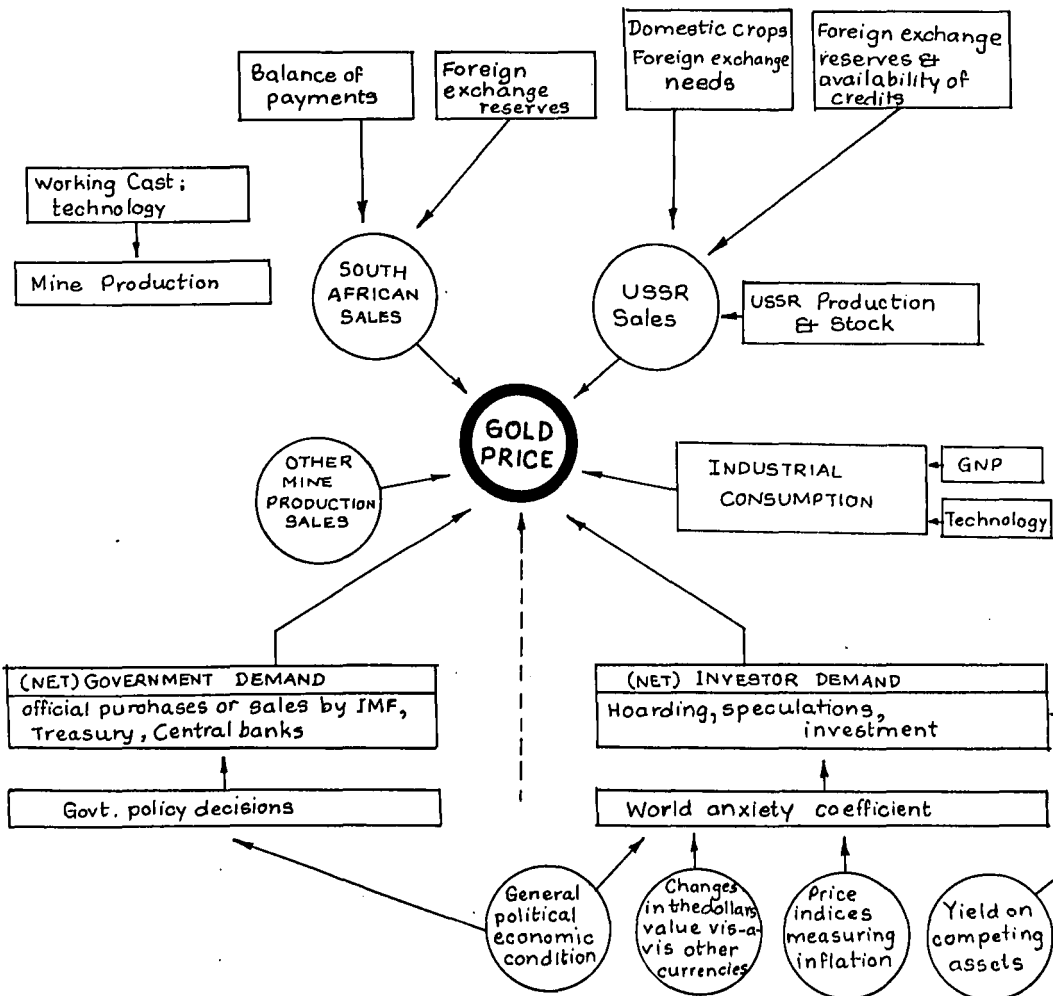
2 Ounces awarded do not add up exactly to the total representing the amount sold owing to variations in the weight of standard gold bars.

Source: IMF Annual Report 1980

Fig 5-1

PRICE MAKING INFLUENCES IN GOLD

(arrows indicate principal casual direction)



5.5 Gold Price and Gold as an Investment

5.5.1 Other Factors Influencing Gold Price

Gold price has been influenced by various other factors like political, monetary, economic and even social conditions.

J. Aron (Precious metals research department) has prepared an excellent diagrammatic summary of the major factors.

(See figure 5.1) Some of these factors are -

- 1) the freedom of central banks to buy and sell on the market,
- 2) the U.S. treasury and IMF auctions,
- 3) continuing industrial demand for gold,
- 4) the investment and speculative demand for gold arising from economic and political uncertainties as well as worldwide currency instability,
- 5) the growth in popularity of gold coins,
- 6) the rise in energy price, and
- 7) the formation of the European Monetary System.

5.5.2 World Gold Production and Price of Gold

In world history gold price was stable from the Napoleonic era to the First World War. But that stability could be explained on the ground of the development of national bank credit and paper money. At that time gold production increased because of the discovery of America and the innovations in the refining techniques of gold in mines. The gold production was an yearly average :

00.37 million ounces in 16th, 17th and 18th century

03.72 million ounces in 19th century

19.23 million ounces in thirteen years preceding

First World War

946.6 metric tonnes - in 1976

The value this metal acquires is the result of the amount extracted, the amount offered for sale and its price on international market. From the Fig.No. 5.2 we can understand the recent relationship of gold production and gold prices. It indicates that price varies more than the amount sold. It means the changes in the value of world production influence the metal's price more than does the amount of troy ounce mined.

Presently, South Africa is the principle producer of gold in the world. From 1978 to 1985 it produced 47% of the total world gold production. On the average the another producers produce -

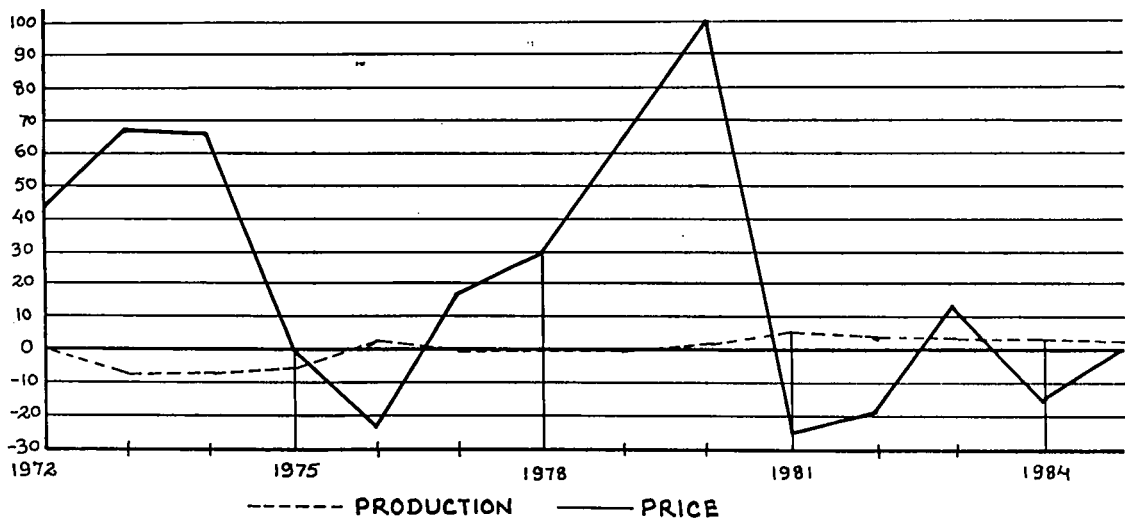
the Soviet Union	18%	of total world gold production
Canada	5%	" "
the U.S.A.	3%	" "

5.5.3 Selected Countries : Share of World Gold Production

The South African share in supply of gold in the international market declined from 1970 to 1974, with the exception of 1971, when it reached to 70% of total gold production. The decline was due to the reduction in supply and other producers appearance in the market. Red China

FIG 5.2

WORLD GOLD PRODUCTION AND PRICE
(Annual percentage variation)

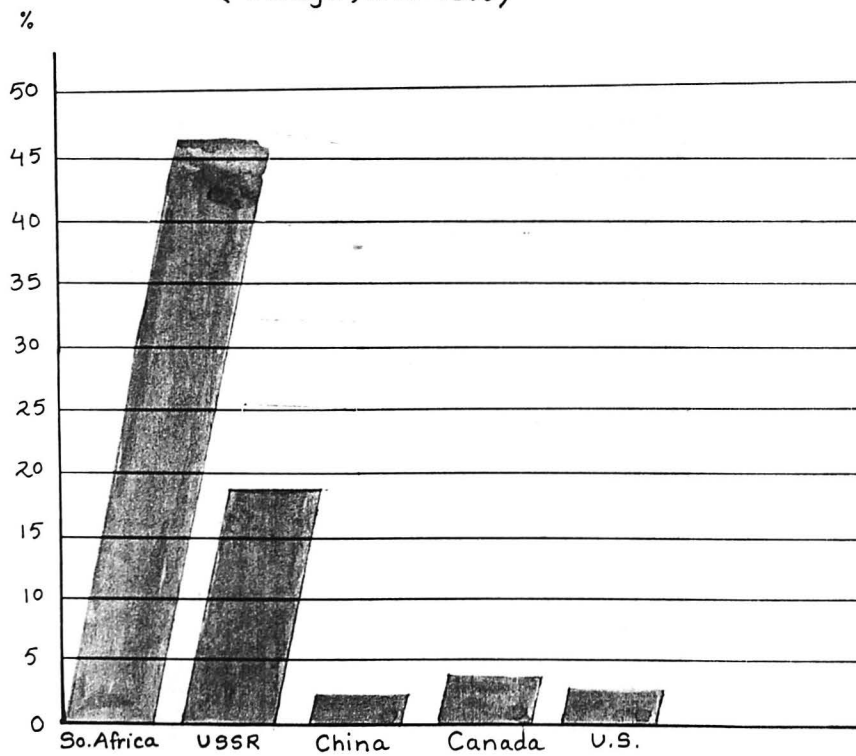


SOURCE: Banamex, Department of Economic Research. Based on data obtained from the Commodity Research Bureau, Commodity Year Book and from the International Monetary Fund (IMF).

FIG 5.3

SELECTED COUNTRIES: SHARE OF WORLD GOLD
PRODUCTION

(Average, 1978-1985)



SOURCE: Banamex, Department of Economic Research.
Based on data obtained from the Commodity
Research Bureau.

entered the market in 1978 and by 1985 already acquired 4.4 per cent of the market.

5.5.4 Price of Gold and Percentage Change in South African Production

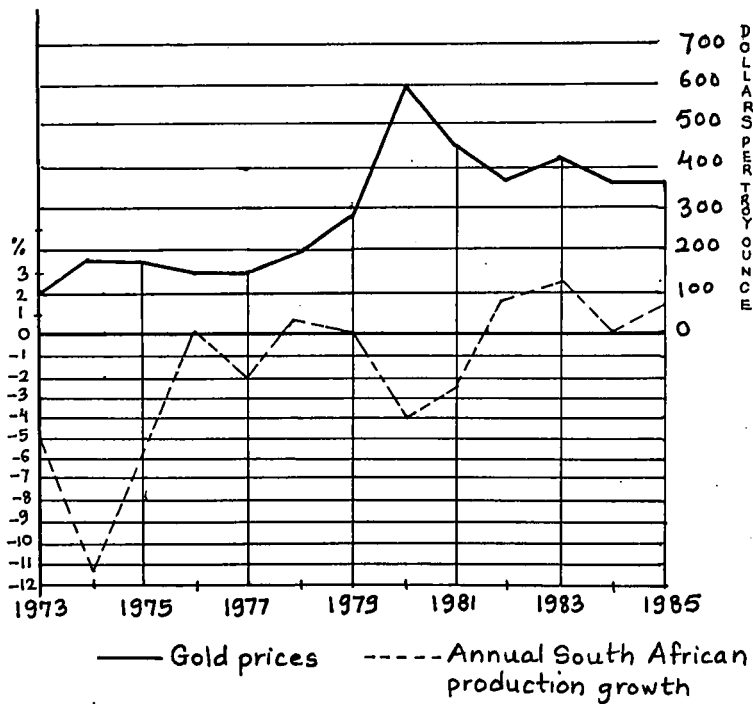
But if we see the relation between gold price in the international market and the South African gold production (Fig. 5.4), there is no evidence to support the contention that production in South Africa directly and systematically affect the price of gold. In 1972 and again in 1974 supply of gold declined and there was steep increase in price. In 1975 production registered a growth of close to zero, but the price showed no substantial change. In 1976 supply declined and so did the price. Supply rebounded in 1976, and 1982 and prices also rose. So the price of gold not only directly depends on South African production of gold, but also on the market shares of other countries with large holdings.

5.5.5 World Gold Reserves

In 1984 the total gold reserve of Western countries was equivalent to 43 years of production from South Africa. The U.S. has a total troy ounce reserve equalling 12 years worth of African production, while the rest of the world has 5 years 8 months. As shown in Figure 5.5, U.S.A. has largest international gold reserves with 27.6 per cent, followed by West Germany, with 10.2 per cent and Switzerland, with 8.7 per cent. The majority of Western Hemisphere, including Latin America, holding only 3.4 per cent.

FIG 5.4

PRICE OF GOLD AND PERCENTAGE CHANGE
IN SOUTH AFRICAN PRODUCTION

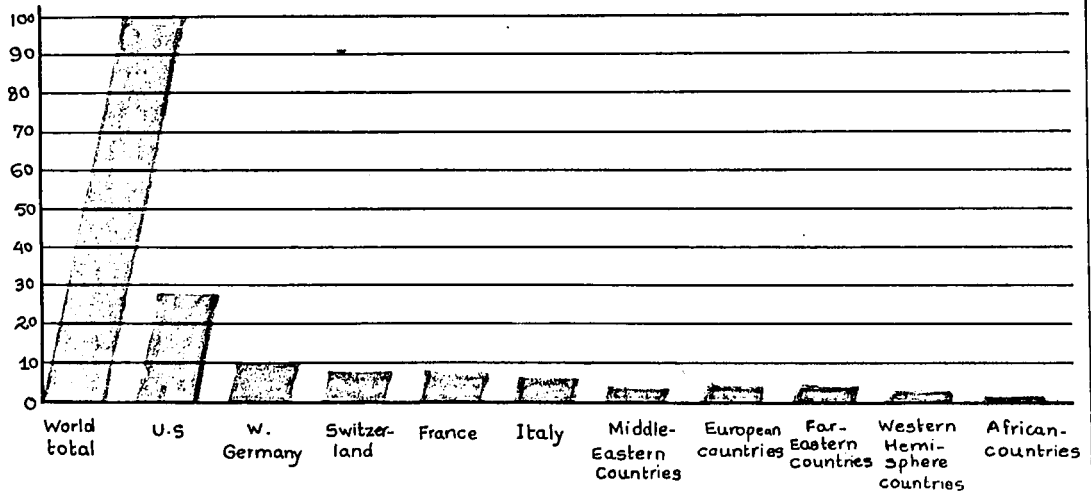


NOTE: The left coordinates measures the annual change in South Africa's gold production, while the right one refers to the price of gold per troy ounce.

SOURCE: Banamex, Department of Economic Research.
Based on data obtained from the Commodity Research Bureau.

FIG 5.5

WORLD GOLD RESERVES
(Millions of troy ounces)



SOURCE . Banamex, Department of Economic Research . Based on data supplied by International Monetary Fund (IMF) .

5.5.6 History of General Price Inflation and the History of the Price of Gold

Professor Roy W. Jasram of the University of California, examined the history of general price inflation and the history of the price of gold in both England and the U.S., from 1960 to 1976 for England and from 1800 to 1976 for the U.S.A. In his book, "The Golden Constant 1560-1976 he has demonstrated close relationship between gold and the commodity prices over the past four centuries, and he showed that a brick or loaf of bread costed very much the same in terms of gold in 1960 as it did in 1560.

Over such long period of time there might have been cycle of inflation and deflation and ratio of gold to commodity might have varied. According to him gold tends to lose its purchasing power during inflationary period and to gain purchasing power during deflationary period.

Even though gold has been a poor hedge against year to year commodity price increase, it has maintained its long term purchasing power from inflationary peak to inflationary peak. That is, commodity prices repeatedly return to the same price in terms of ounces of gold. It was called 'retrieval phenomenon' by Jasram. This observation is not in conformation with the prices of manufactured goods, which reflects steadily rising labour costs. Gold has a capacity to retain wealth and therefore a correlation between the price of the metal and world inflation is assumed. Hence, it is reevaluated in tune with the growth in world

prices. But, this holds only for long-term investments, not short-term ones. Gold can function as an effective long term hedge not only against inflation but also as a short term hedge against deflation, because its buying power appreciates more rapidly than anything else during such periods.

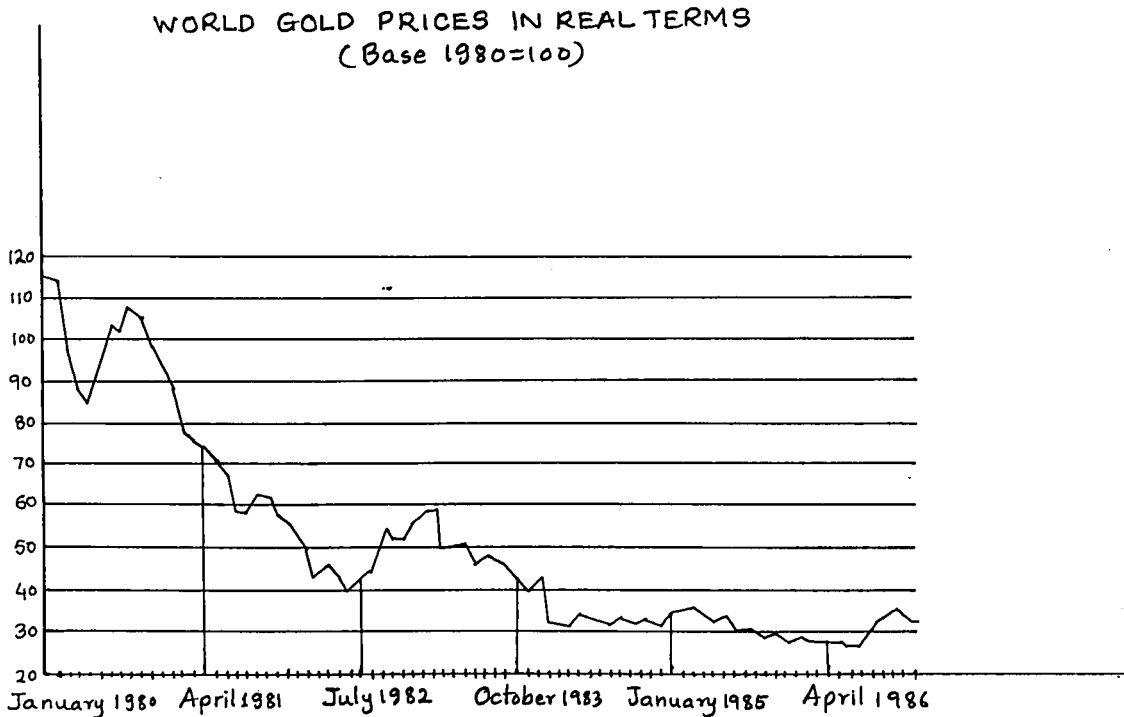
5.5.7 World Gold Price in Real Terms

From January 1981 to date, real gold prices have been going down: prices are not keeping pace with world inflation. The price of one troy ounce in 1986 was only one-third what it was in 1981 (Fig. 5.6). On the other hand, an upswing in the dollar internationally, stock market yields, channelling resources to productive investment in developed countries, and the rebound of the financial bond market, all reduce, in part, saver's preferences for gold. This explains, the favourable position of gold as a middle term investment: the value lost in real term is compensated as the macroeconomic and commercial balance of industrialized countries is re-established.

5.5.8 Trends of Gold Price

After the first World War from 1924, gold price was fixed till 1934, and again remained fixed from 1934 to 1968, till the two tier system was established. From 1934 to 1968 it was effectively pegged by the U.S.A. Government at \$ 35 an ounce. But after 1968 with the two prices of gold one for official transaction and another for market, it took upward swing. The period was of considerable price

FIG. 5.6



NOTE: Calculations based on nominal gold prices, deflated with the World Consumer Price Index (WCPI)

SOURCE: Banamex, Department of Economic Research.

Based on data supplied by the International Monetary Fund (IMF) and the Commodity Research Bureau:

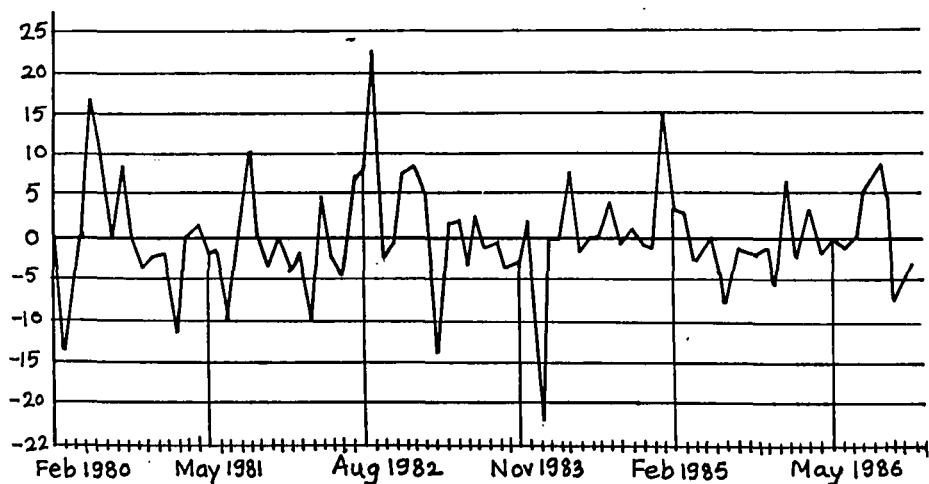
volatility during 70's and there was a peak of gold boom on January 21, 1980, that is, \$ 850 an ounce. In April 1979 it was only \$ 239 and \$ 110 in the summer of 1976. Later on unstable monthly deviations could be seen. from (fig.5.7). In 1987 the minimum gold price was Rs. 2,400 per ten grams and maximum was Rs. 3800 per ten grams in November 1987.

5.5.9 Reasons for Price Volatility

- 1) But for the price volatility of gold in 1979-80 political events were responsible. There is no doubt that Iranian crisis ignited the speculative interest in gold and to that, Russian invasion of Afganistan had given fire.
- 2) It was also suggested that movements in domestic interest rates and in oil market prior to and during price upswings are more responsible for price volatility than political events.
- 3) Another explanation which relates OPEC to the rise of the price of gold was given. In late 1960 the U.S.A. was running deficit because of the role of the dollar as reserve currency. The persistence of this deficit allowed the rest of the world to share an overall balance of payments surplus. With the breaking down of the Bretton Woods system between 1971 and 1973, the U.S.A. no longer required to hold the counter balancing, deficit in the world balance of payment and, with the rest of the world it had an equal chance of deficit or surplus. This situation was again disrupted by the OPEC oil price rise which created an overall balance of payments

FIG 5.7

OBSERVED TRENDS IN DEVIATIONS IN THE PERCENTAGE
CHANGE OF GOLD PRICES



NOTE: Summary of the difference between monthly price increases and forecasts based on observed trends.

SOURCE: Banamex, Department of Economic Research.
Based on data supplied by the International Monetary Fund (IMF).

deficit to be shared by the rest of the world. By the mid 1970's the most developed world economies had adjusted to that situation, and the renewed series of price increases that began in 1978. That raised the threat of the non-OPEC countries, facing larger balance of payment deficit.

Another explanation was suggested for 1979-80 price bubble that there was shortage of bullion supply due to lack of sale from the U.S.S.R. and no further the U.S.A. gold auction after November 1979. There was also a relaxation of restriction on individual gold holding in the U.S.A. in the beginning of 1975 and trading in the U.K., Japan and the U.S.A. So by mid 1979, however, the advantages of gold and gold related investment were much more widely known which might have increased the demand for gold.

Thus for 1979-80 price volatility all political, social, economical, factors were responsible.

But later on between January 1980 and the beginning of May 1980 the price of gold had dropped by \$ 340 per ounce; even so, at roughly \$ 510 it was still twice as high as before the earlier wave of speculation which started in the spring of 1979. By the end of 1980 the price had risen to around \$ 620 per ounce but by August 1981 the price had fallen to \$ 397 per ounce.

In 1987 gold and silver prices scaled new peak. The reason for that was the paucity of stocks and sustained seasonal demand.

5.5.10 Risk Indices for Selected International Assets

The price of gold has little relationship with world inflation in the short run. Buying it as a short term investment implies a considerable risk which, in a financial asset, is measured by the variability of its yield.

One of the objectives in forming a portfolio of international asset is to reduce risks to a minimum, which is generally done by diversification. At present gold is four times riskier than the Yen or the Swiss franc, and 2.1 times more than the mark. If compared with other metals, such as silver and copper, it is risky (Table 5.7). Investing money in this metal should be considered as yielding high, but variable profits.

One of the gold's possibilities as a form of savings, thanks to its inverse correlation with the mark, French and Swiss francs and the yen, is that of reducing risk in an asset portfolio expressed exclusively in dollars. Because of the similarity of their yields, this cannot be seen in portfolios containing only gold and silver. The decision to buy metals should, therefore, be combined with purchases of other types of financial investments. If one buys only actuals such as gold, silver and copper, one runs an unnecessarily high risk.

TABLE 5.7
RISK INDICES FOR SELECTED INTERNATIONAL
FINANCIAL ASSETS

Gold	100.0
Silver	22.0
Copper	2.0
German marks	46.9
French francs	56.6
Swiss francs	28.5
Japanese yen	25.0

1. The risk index is calculated on the variability of financial asset yields. For purpose of comparison, gold is taken as the base with an assigned value of 100.

SOURCE: Banamex, Department of Economic Research.



C H A P T E R - VI

S U M M A R Y A N D C O N C L U S I O N

CHAPTER VI
SUMMARY AND CONCLUSION

The foregoing chapters review the role of gold in the international monetary system. To understand the monetary role of gold it became necessary to see in brief the history of money and how gold came into existence as money. The second chapter is about the history of money and it also discusses the historical background of the adoption of the gold standard by various countries. Generally money can be defined as some thing which is valued because of its beauty or its usefulness to everybody, but which cannot be produced in great quantity quickly (2.2). The chapter also discusses the properties of gold (2.3). Due to that properties of gold, gold was accepted as money. With the development, the disadvantages of using gold as money (2.3) were removed by minting gold coins. By 1500 A.D. gold currency became abundant (2.4). Later on notes, 100% backed by gold went into circulation and at last only notes and bank money became the major part of the supply of money.

The historical background of the adoption of the gold standard has been discussed in (2.5). Initially the gold standard was adopted by the U.K. Later, most of the countries adopted the gold standard. Till 1905 more than ten currencies were on gold standard (Table 2.1).

Thus, gold entered in the monetary system and ruled the monetary system for many years.

The third chapter discusses the text book version of

of the gold standard (3.1). It defines gold standard (3.1.1), discusses its various stages of evolution (3.1.2), rules of the game (3.1.3), mechanism of the gold standard (3.1.4), specie-flow mechanism (3.1.5) and its technique (3.1.5.1) and at last the Cuncliffe Committee's report (3.1.6).

From the text book version of the gold standard, it is clear that it is an automatic system of adjustment, if the rules of the game are followed by the countries with the gold standard. The specie-flow mechanism proposed by David Hume (1752) gives a very clear picture of the automatic system.

However, gold standard worked smoothly till 1914 and collapsed with the out break of the first world war, due to economic and political reasons (3.2.1). It was restored as a natural wish but due to the economic chaos, it was unable to work smoothly. The monetary authorities did not observe the rules of the game. Thus, the technical task of maintaining stability was also far greater than before. The strike of 1926, war debts and reparations, excessive tariff exercise and the movement of long term capital were also responsible for the collapse of restored gold standard. So from the reasons for collapse it became clear that for the smooth functioning of the gold standard, specific conditions were necessary. From the discussion of the actual working, that is, myths and realities (3.3) we can assert

that there is a significant difference between the text book version and the real working of the gold standard. Features of the working of gold standard (3.3.1) explains that it was not an automatic system at all. According to W.M. Scammel (1965) it was semi organisational as it was operated by the leadership of the Bank of England on behalf of the world business community, though it was regarded as an automatic system. Closkey and Zeacher (1976), A.G. Ford (1960), Robert Triffin (1968), W.M. Scammel (1969), Bloom Field (1959), all criticised the working of the gold standard and asserted that it worked smoothly in the central countries and not the peripheral.

However, various other reasons also were responsible for the smooth functioning of the gold standard (3.3.3), that is, basic conditions prevailing, industrial expansion, sterling balances, policies of central bank. Thus, it is clear that gold has played a very important role under the gold standard, not because of the rules of the game but because of the above mentioned reasons. Gold was the backbone of the gold standard.

Chapter IV discusses the gold in the international monetary system since the IMF till the second amendment of the Articles of Agreement of the Fund. The IMF has been studied (4.1) through its objectives (4.1.2), Articles of Agreement related to gold (4.2) and the role of gold in the IMF (4.3). From that it can be said that gold has a basic

role to play in the IMF as well. William (1943) asserted that there was parallelism between the IMF and the gold standard (4.4). While Lord Keynes denied and proposed that the IMF was just opposite of the gold standard by saying that in the IMF gold was used as a convenient common denominator and not a fixed standard of value.

And on 16th March 1968 the two tier system was established (4.7). However, the two tier system worked only for few years and collapsed. The U.S.A. authority stopped the official convertibility of dollar into gold. As a result the Gold exchange standard of the post war Bretton Woods monetary system ended.

In the review of the basic problem of Bretton Woods system we reviewed liquidity problem (4.8.1), adjustment problem (4.8.2) and confidence problem in reserve media (4.8.3) and further discussed the solution to the liquidity problem (4.9).

Harrod (1965) proposed the revaluation of gold as a solution to that problem. He suggested that gold price should be doubled which will give rise to various effects (4.9.1.1 to 4.9.1.3).

Rueff (1963) stressed to abandon the gold-dollar exchange system and to formulate an international gold standard along traditional lines with some necessary modifications to bring it up to date (4.9.2).

However, according to some view revaluation of gold as a solution suffer from many short comings, e.g. inflation, uneven distribution of gains, increase in the production of worthless commodities speculation, etc.

Further we discussed the formation of gold^{Pool} in 1961 as a solution to rising gold price (4.6). Political conditions were mainly responsible for the gold pool arrangement. It was an arrangement whereby Bank of England would sale gold on behalf of the Central Banks of members, in sufficient quantitatives to keep the price at \$ 35 an ounce. Gold pool worked smoothly because of Soviet sales of gold in 1964 and 1965, but afterward unable to meet the rising demand for gold. Because of the sterling devaluation in November 1967, walk out of France from the pool and no Russian gold sale. Gold pool operation was discontinued by President Johnson on 14th March 1968.

Jacques Rueff and Helprin (1963) were the advocates of return to gold standard (4.10). However, as we have seen that gold standard, as a system of balance of payments adjustment had many defects. Under the prevailing circumstances we can not go back. So we can assert that the gold standard can not come back.

Then we discussed the birth of SDR (4.11) as a development of international monetary system, which can control the supply of international liquidity without gold. The first amendment of Articles of Agreement of Fund gave birth to SDR. Then salient features of SDR (4.11.1) were discussed and its gold value was discussed, that is, 0.888671 grams of fine gold is equal to one SDR in 1969.

Thus with the collapse of Britten Woods system, the role of gold is reduced in the international monetary system.

But still SDR was linked with gold as its value was expressed in terms of gold. It means the role of gold was not reduced fully from the monetary system by the first amendment of Articles of Agreement of the Fund. In Bretton Woods system gold had some role to play, however, second amendment of Articles of Agreement of the Fund completely dethrone gold and SDR has taken its place. Various stages of the role of gold is summarized in this Fourth chapter in brief (4.13). Thus, the problem of liquidity is solved with the birth of SDR that is man made asset.

Chapter V discusses the demand, supply, uses and price aspect of gold. As we know that since the second amendment of Articles of Agreement price of gold is determined by market forces, today (Table 5.1). The other factors affecting price of gold is explained by figure 5.1. While discussing consumption of gold we discussed income and substitution elasticity of demand for gold (5.2.1.1). According to Lipschitz and Otani (1977), elasticity of demand for gold is 0.6 and price elasticity of supply of gold is 0.1. Demand for and supply of gold can be seen from Table 5.2.

We discussed in detail the various factors affecting demand and supply. Gold has two-fold demand, that is, demand for consumption and stockpiling of gold. Consumption demand comprises demand for carat jewelery and art, dentistry and industrial demand (5.2). Industrial demand for gold comprises demand for gold, in electronic and electric industries in dentistry and for medical purposes, in photography,

architecture, medals and medallions and fake coins, in space application, etc. (5.2.3) We also discussed the official demand for gold and the reasons for holding of gold by central bank though it is non interest bearing asset (5.3.4 and 5.3.4.1). According to IMF source at the end of 1980 the U.S.A. had 28% of the total gold held by non-communist block which was maximum among other countries.

Further we discussed in detail supply of gold from various sources, that is, current production from old and new mines and improved mining techniques, reprocessed scrap, a reduction of processors inventories, reduction of other private stocks and monetary stocks (5.4). Gold production increased over a period of time. According to the South African Gold Coin Exchange estimates, it increased from 26 tonnes in sixteenth century to 77393 tonnes in twentieth century in 1977. In the world gold production we discussed gold production in all five continents (5.4.2) and suppliers of gold. Recovery of gold from scrap is also very important source of supply of gold (5.4.7), as mining is becoming more costly. But this source is available in those countries which are largest consumer and generator of scrap such as North America, Japan and Europe. Supply of gold from communist Block (Table 5.4), and other official gold sales were the important source during 1970 to 1980 (5.4.9). The U.S.A. treasury gold sales (Table 5.5) and IMF gold sales (Table 5.6) gives the idea of official

supply of gold.

Chapter V summarizes factors affecting price of gold (Fig.5.1). Various relationships were explained with the help of graphs i.e. relationship between world gold production and price of gold (5.5.2, Fig. 5.2), share of various countries in the world production of gold (5.5.3, Fig.5.3), relationship of price of gold and percentage change in South African production (5.5.4, Fig.5.4), world gold reserve (5.5.5, Fig.5.5), history of general inflation and price of gold (5.5.6), world gold price in real terms (5.5.7, Fig.5.6), trend of gold prices (5.5.8, Fig.5.7) and reasons for price volatility (5.5.9) and the risk indices for selected international assets (5.5.10, Table 5.7).

Figure 5.2 indicates that price of gold varies more than the amount sold. It means that the changes in the value of world production influence the metals price more than does the amount of troy ounces minted. Figure 5.4 indicates that the price of gold not only directly depends on South African production of gold but also on the market share of other countries with large holdings. With the help of figure 5.5 we traced the ranking of reserve of gold with various countries. The U.S.A. has largest international gold reserve i.e.27.6% of the total gold reserve. Figure 5.6 explains the favourable position of gold as a middle term investment, the value lost in real terms is compensated, as the macroeconomic and commercial balance of industrialized countries is reestablished. Figure 5.7 traces the trend of gold prices. Table (5.7) gives the risk indices

of gold, and various selected international asset which show that at present gold is four times riskier than the yen or swiss franc and 2.1 times more than the mark. It is also riskier compare to other metals.

Thus from the foregoing discussion we can conclude that now there is no chance for remonetisation of gold. The role of gold declined over a period of time by the international authorities purposely through various stages. At last the second amendment of Articles of Agreement dethroned it from the centre of the monetary system leaving it as one of the reserve assets only. Now there is no scope for central bank intervention and the market is left to its own forces and devices.

However, consumption demand for gold is not reducing with monetary demand for gold at all. Though gold is replaced by SDR from monetary system, it has not become the common media of exchange like gold. Gold has some relationship with the human psychology. It is to be seen that whether SDR can replace gold from the human mind.

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