THE GOLD PROBLEM

I. Production

The production of gold is one of the oldest industries known to man, having been engaged in by the Egyptians as early as 3000 B.C. The Greeks as well as the Romans produced the metal, employing it concomitantly with silver as coinage. However, with the discovery of America, mining began on a fairly large scale, particularly with the discovery of the rich Potosi Mines of Peru in 1545. From the discovery of America to 1880, or a span of four centuries, approximately 344 million ounces of gold were produced, having a present day value of about 12 billion dollars. At the present rate of production (1936) it would take only about 10 years to produce an amount equivalent to that mined in those four hundred years.

Gold is produced in all parts of the world, but it is concentrated in but a few well known areas. The following table lists these major regions, as well as their percentage of the total production for the years 1929 and 1936.

Table I
Distribution of Gold Production

	1929	1936
United States	11.5%	12.7%
Canada	10.0	11.0
Russia	5.7	20.6
Mexico	3.4	2.2
Australia	2.2	3.3
South Africa	57.0	35.8
Other	10.0	14.5
	100.0%	100.0%

The following two tables illustrate the tremendous growth of this industry during the past few years. This has been due, in part, to characteristics inherent in the economics of producing the metal itself, as well as several very important factors precipitated by world economic conditions, all of which have led to increased exploration, development and exploitation.

Table II
Gold Production of the World*
(In thousands of fine ounces)

	1929	1930	1931	1932	1933	1934	1935	1936
United States	2,217	2,279	2,396	2,449	2,556	3,075	3,609	4,313
Canada	1,928	2,102	2,694	3,045	2,949	2,972	3,285	3,730
Russia (Est.)	1,100	1,300	1,700	1,990	2,814	4,200	5,500	7,000
Mexico	651	668	622	584	637	661	682	754
Australia	421	462	586	704	812	870	889	1,137
Rhodesia	562	555	542	580	645	693	727	802
Rand	10,413	10,717	10,879	11,559	11,013	10,480	10,774	11,336
Others	1,920	2,821	2,867	2,220	3,972	4,451	4,534	4,923
Total (Est.)	19,214	20,916	22,286	24,101	25,400	27,372	30,001	33,995
Index	100.0	108.9	115.9	125.0	132.0	142.1	156.0	176.8

* Federal Reserve Bulletin.

Table III
Gold Production of the World*
In dollars (000)
(1929-1932 1 oz. = $20.67 1933-1936 1 oz. = $35)

	1929	1930	1931	1932	1933	1934	1935	1936
United States	45,835	47,123	49,524	50,626	89,467	107,632	126,325	150,959
Canada	39,862	43,454	55,687	62,933	103,224	104,023	114,971	130,550
Mexico	13,463	13,813	12,866	12,070	22,297	23,135	23,858	26,394
Australia	8,712	9,553	12,134	14,563	28,428	30,447	31,117	39,793
Rhodesia	11,607	11,476	11,193	12,000	22,578	24,264	25,477	28,053
Rand	215,242	221,526	224,863	238,931	385,474	366,795	377,090	396,768
Others(inc.Russia)	62,432	85,174	94,394	87,041	237,529	302,737	351,204	417,311
Total	397,153	432,119	460,651	498,164	888,997	958,033	1,050,042	1,189,828
Index	100	109	116	125	224	241	265	300

* Federal Reserve Bulletin

First, it may be pointed out that the profitability of gold production is increased during eras of general economic depression. This is due to the fact that costs of production generally decline while the selling price of the metal remains stationary due to legislative fiat. Operating costs for most American mines are broken down as follows: labor 60%, supplies 20%, power 13% and miscellaneous expenses 7%, and it is to be noted that about 80% of these costs are subject to reduction during depression years, theoretically increasing profits by the amount of the reductions in cost.

There have been two major artificial factors leading to the increase in production. The first has arisen out of the decline in international trade, increasing the burden on gold of equalizing international payments. This increased demand for the metal should naturally reflect itself in a higher value for gold. Second and probably the most important reason for the increased production has been the devaluation of the major currencies of the world, increasing the price of gold through legislative action. The exercise of this sovereign prerogative has resulted in roughly a 69% increase in quotations for the metal. Obviously there can be only one result from this latter measure, namely increased output. The following short table shows the percentage increase of output of 1936 over 1929.

Table IV
Percentage Increase in Gold Output

United States	94.6%
Canada	93.5
Russia	530.0
Mexico	15.8
Australia	170.0
South Africa	10.6
Other	156.0
Total	76.8%

There does not appear to be any reason to doubt the fact that this tendency will continue over the intermediate period, at least so long as the production of the metal is such a profitable venture.

The following paragraphs briefly outline conditions in the major producing areas as well as their future outlook.

United States

Under the stimulus which has increased the production of gold throughout the world, the United States has also stepped up its output of the precious metal. Thus we find that production in 1929 amounted to 2,217,000 ounces and 4,313,000 in 1936, an increase of 95%. Nevertheless the output of the United States is gradually declining, last year's production not being equal to 1915 output which amounted to 4,824,000 ounces. Moreover current production in the United States is falling off as compared with last year. Adjusted to a seasonal basis, U. S. output was off 11.3% as compared to the first two months of last year. It cannot be ascertained whether this trend will be continued or not; but a material decline is not looked for since higher grade ores could probably be used if producers desired to increase production. It may be of interest to note that Philippine production has contributed materially to U. S. output. Once independence is achieved, this source of production, amounting to some 450,000 ounces in 1935 will be removed, and American output will be further curtailed.

Canada

Canadian production is continually reaching new highs and is currently running higher than that of the United States. The remarkable increase in Canadian gold mining output is expected once again to exceed the United States. The industry lacks stability, however, since new properties are continually being discovered and it will probably take some years before certain companies will own sufficiently stable properties to insure investment attention. Growth has been rapid as may be seen by the fact that 1914 production amounted to only 773,000 ounces against last year's rate of 3,730,000 ounces.

Rhodesia and South Africa

Since its discovery in 1885, the Rand has probably seen the most amazing development of any gold producing region. 1915 production amounted to about 9,094,000 ounces against last year's output of 11,336,000 ounces. However, it is surprising how little the physical output has increased during the past few years. As an explanation we have it on good authority that only the poorer deposits are currently being worked, so that should the United States abandon the present price of gold, richer ores will once again be mined. Costs of production in this region are cheap, due to low labor costs and the type of deposit found in this region. Gold production is vital to South Africa's economy and the Government is apparently fostering the husbanding of richer gold deposits through a scheme of progressive taxation on surplus profits. This has held down production to the utilization of lower grade ores, but the results over the longer term should prove beneficial. Reserves are large and are adequate for many years production according to Dr. Hans Pirou, the government's mining engineer. Current production is on the upgrade, and it is reported that large amounts of new capital are entering the Rand for further development of resources.

Russia

During the past few years Russian production has increased in phenomenal fashion. Unfortunately we do not have any accurate figures on Russian output, but all authorities agree that it has grown tremendously. According to recent advices from Moscow, Russian output has been underestimated, and that actually 10,600,000 ounces were produced in 1936, almost equalling South Africa's output. It was also stated that 1937 calls for a 35% increase. This would, of course, place Russia at the head of gold producing nations. With large unexplored territories and the major part of present production coming from placer mining, potential output is overwhelmingly large.

Conclusions

World production increased some 77% in 1936 over 1929 and amounted to about 4 million ounces more than 1935 output. The total production was about equal to 4½% of the total world stock of monetary gold at the beginning of the year. At present this stock is estimated to total 773 million ounces. Naturally this increase has been brought about by a reduction in the value of currencies, or as stated differently, an increase in the price of gold. Stated in depreciated dollars, the value of production as against physical output, has increased even more. During the eight year interval of 1929 - 1936, value of world output increased 300% from $397,100,000 to $1,189,800,000.

In 1930 the League of Nations Gold Delegation of the Financial Committee published a report stating that a definite shortage of the metal was to be anticipated over the next few years, due to the gradual exhaustion of known deposits. These fears have now been temporarily put to rest, with production increasing every year since 1930. There appears to be two primary causes for the increase, neither of which was taken into consideration by the League Committee. The first was, of course, the devaluation of Sterling in 1931 followed by the depreciation of the dollar resulting in a 69% increase in the price of gold. By mere legislative action the value of an ounce of gold was written up from $20.67 to $35, and it was obvious that such an increase would stimulate world production. A second factor neglected by the League of Nations report was the potential production of Russia. And finally, the League committee, meeting in 1930, had no way of foreseeing the tremendous decline in commodity prices, stimulating increased gold production.

Output is expected to increase in the immediate future and from this standpoint alone producers of the metal should benefit. There are a variety of causes why this should prove to be true, among which are the following:

1. Improved methods of gold extraction are being exploited.
2. Russian production will probably increase.
3. New prospecting has disclosed high grade ores which have not yet come into production.
4. South Africa and other regions have not milled high grade ores during the past few years, so that actual reserves have been expanded rather than contracted.

The present prediction is exactly the opposite to that reached in 1930. Should the price of gold be artificially maintained as it is today, this would only be a continued incentive to further production. Prior to the devaluation of the dollar and the pound, gold was scarce, since it had become of more importance in the settling of international accounts. This scarcity, resulting from the diminution of ability to ship goods as a means of settlement, increased the value of gold in a natural way. Today however, the international balance of payments is relatively well stabilized and where insufficient gold is present, as in Germany, exchange restrictions are created or tariffs are erected so that a country can become self sufficient This has brought about a reduction in the natural demand for gold and with increased output there does not appear to be any valid reason for believing that the present quotations for the metal are warranted, at least on the basis of the present world commodity prices.

II. Consumption

There are, of course, two major uses of gold. The first, as a commodity is in the arts and to some extent in industry. The second, and by far the more important is as a standard of value in which capacity it acts as a base for circulating mediums. England was the first modern nation to unequivocally adopt gold as the standard of measure, to be gradually followed by most of the other nations of the world. Silver which had previously been the major medium of exchange was relegated to the background and each nation vied with the other to accumulate large supplies of the yellow metal.

Since the beginning of the World War, however, various changes have occurred, such as the establishment of the gold exchange standard, whereby economy in the use of gold was sought. Since it is outside the province of this paper to review the history of gold, it is merely sufficient to state that today gold no longer plays the same role it did a decade ago. It is no longer to be found in circulation and most governments have assumed, as a sovereign right, the prerogative of alone holding gold although, internationally, it still provides a medium of settlement.

It is difficult to estimate the amount of gold production going into use in the arts and that amount going into hoarding. Few statistics are available, and those which we have are very inadequate. In general, absorption of gold by India and China is also included in the available figures, but these are at best only estimates. The Bank of International Settlements recently indicated that it believed consumption of gold for non-monetary uses amounted to about 5% of 1936 production or some $63 million dollars. Mr. Charles O. Hardy in a newly published book "Is there enough Gold?" estimates $100 millions per year as the probable world consumption for the next decade. This is predicated on the belief that demand for the arts is decreasing and India, rather than absorbing gold, is disgorging it due to its currently high price. During the years 1931-1936, the Orient has exported some 42 millions of ounces of gold, worth about 1,483 millions in 1929 dollars. This process is still continuing but at a reduced rate, according to latest available figures. It must be noted, however, a large part of this gold coming from India, did not find its way into monetary reserves, but rather into hoards in London and to some extent in France. Nevertheless it is also interesting to discover that lately individuals are beginning to release their gold from Western hoards; believing it no longer represents a measure of safety.

Turningto the use of gold as a medium of exchange, we note first of all that the coined metal no longer circulates freely in the hands of the people. Since this is no longer the case, it is easy to locate statistics covering the amount of gold held by Central Banks and governments as reserves for currency in circulation. Despite the fact that convertibility of currency into gold is no longer possible, most nations still maintain a semblance of the gold standard by preserving a certain gold fund. Nevertheless, the majority of the world's currencies are now on a more or less managed basis, where the amount of currency in circulation is not predicated on the amount of gold available or on the automatic workings of a free world market. Internal credit and monetary conditions over which governments or their agencies have assumed control are now the determining factors.

The dependence on gold rather than the acceptance of goods as a medium of international exchange was one of the original causes of the present concentration of gold. The concepts of the Mercantilist School of thought were applied to the post-war period so that each nation endeavored to create a favorable balance of trade. The extent to which this concentration of the world's monetary supply of gold has progressed is noted in the following table.

Table V
Gold Reserves (Jan. 1937)*
Central Banks & Governments
(millions of dollars)

Country	Dollar Am't.	% of Total
United States	$11,258	50.00%
France	2,846	12.51
Great Britain	2,584	11.39
Spain	718	3.16
Switzerland (B.I.S. & Natl. Bank)	670	2.95
Belgium	625	2.75
Holland	558	2.45
Argentina	487	2.14
Japan	466	2.05
Rest of World	2,485	10.60
Total	$22,697	100.00

* Federal Reserve Bulletin.

On the basis of $35 an ounce for gold, total holdings, therefore amounted to 648,500,000 ounces. In March of 1929, the total holdings of Central Banks and governments amounted to 489,100,000 ounces, which means that roughly 159,400,000 ounces were added to the monetary gold stock during the eight year period. Total gold produced during the same period totalled 203,300,000 ounces, so that some 60 million ounces went either into hoarding or into the arts.

III. The Position of the United States

The following table shows total stocks of monetary gold in the United States through 1933. From 1934 on, the holdings of the Treasury are used, since after January 1934, all gold in circulation was turned over to the Treasury.

Table VI
Gold Holdings of U. S.

	In 000,000 dollars	Index 1929 = 100	In 000 oz.
End of December 1914	1,813		87,712
1929	4,284	100	207,256
1930	4,593	107.5	222,206
1931	4,460	104.0	215,772
1932	4,513	105.5	218,335
1933	4,323	101.0	209,143
1934	8,238	113.8	235,374
1935	10,125	139.5	289,285
1936	11,258	155.0	321,657

As may be seen from the foregoing little changes in holdings were made from 1929 to 1934, but subsequent to that latter date a tremendous increase has taken place giving more authority to the statement that the artificially high price given to gold by the United States has incurred not only additional domestic production but also the flow of a steady stream of the metal to the United States. The Treasury has, therefore, been forced to purchase not alone the increased output of domestic mines (See Table II) but has also had to absorb large quantities of dehoarded metal as well as the increased foreign output. Since the end of 1933, we have added

112,514,000 ounces of gold to our monetary gold stock. During the same period, domestic production totalled 10,997,000 ounces, while importations of gold have been as follows:

Table VII
Gold Imports vs. Production

	Net Imports of Gold into U.S.		World Gold Production	
Year	Dollars (000,000)	Ounces (000)	Dollars (000)	Ounces (000)
1934	$1,132	32,343	$ 958	27,372
1935	1,739	49,686	1,050	30,001
1936	1,117	31,903	1,190	33,995
	$3,988	113,931	$3,198	91,368

Hence, total imports and domestic production totalled 124,928,000 ounces while 112,514,000 ounces have been added to our monetary stock. The resulting difference is apparently to be considered as being absorbed by the arts and industry, which therefore accounted for about 10% of the total addition to our gold resources during the past three years.

World production of gold is placed alongside of our imports of the metal since it is apparent that we have been absorbing an amount greater than the entire world production for the past few years.

What were the causes of this large flow of gold into the United States? Briefly, they may be outlined as follows:

1. The revaluation of the dollar in 1934 at a parity below its exchange value against gold standard countries. This was a temporary factor, disappearing as soon as the exchange parity was adjusted.
2. The willingness of the U. S. alone to take gold at a fixed price.
3. The international flight from gold standard currencies of Europe, caused by fear of the European political situation.
4. The realization that American securities were apparently undervalued from a foreign viewpoint and that this country presented an attractive place of investment.

The Federal Reserve Board has recently published figures on these last two points which indicate that funds coming here for conservation alone amounted to about $1,360 millions for the years 1935 and 1936. The amount going into American securities for these same two years totalled $1,234 millions. From the foregoing, it may be concluded that actually these amounts constitute liabilities of the United States and are subject to withdrawal. And since it was gold that actually effectuated the transfer, the U. S. would be in a position to lose gold should fears abroad abate or should American economic conditions make a turn for the worse. However, even if this latter should occur it is questionable whether gold would leave, since foreigners would be prone to liquidate their security holdings and leave the cash balances here. Of course, should fears of war and economic chaos decline abroad, it is conceivable that the gold would be withdrawn. However, no one is in a position to prognosticate when the very real fears of Europe and the rest of the world will subside, so that until that date, America appears to be the safest place for the maintenance of capital holdings. The total amounts transferred to the United States did not therefore constitute settlements of world trade in our favor, but rather, as indicated above, merely a flight of funds from abroad.

Until December 1936, the entire amount of imports and domestic production (except for the 10% going into the arts) entered into the credit base of the United States, expanding deposits by the amount of gold importations, and thus increasing the total sum of potential purchasing power in the hands of the general public.

Since December of 1936, however, the Treasury of the United States has attempted to prevent the addition of gold importations to the credit base by a process of "sterilization". By this means all gold importations, releases of gold from earmark and additional domestic production have merely resulted in additions to the total volume of deposits outstanding but have not greatly affected the reserve position of member banks. When gold is sold to the Treasury, the proceeds still increase reserve balances of the member banks with the Federal Reserve Bank, but as soon as this occurs the Treasury borrows by means of Treasury Bills amounts sufficient to offset the quantity of gold added to domestic holdings. The sale of these Bills to the member banks theoretically draws down their reserves once again to the amount originally present before they were increased by the sale of gold to the Treasury. This fund of inactive gold amounted to $572 millions on May 1, and hence, the Treasury has had to borrow at the rate of about $4 millions per day in order to effectuate this plan of sterilization. Should this rate of inflow continue total borrowings for the year 1937 would be $1,440,000,000 for this purpose alone.

It would be extremely hazardous to venture an opinion as to what may be the ultimate outcome of the present impasse. For should we study the possible actions, whereby the U. S. can stop the huge inflow of gold, without increasing the debt burden of the country or permitting gold to inflate the credit base of the nation, we arrive at virtually impossible solutions. There is, of course, one basic solution, which has been previously mentioned, namely the end of war and economic scares abroad, so that capital would be withdrawn from the U. S. to be profitably reinvested in the country of origin. Whether this solution is in the offing is unknown, but it might be mentioned that current discussion of a world economic conference are straws in that direction.

Aside from this basic solution, several others have been suggested from time to time, none of which appear to be particularly feasible.

1. Establish a free gold market, permitting individuals to hold gold once again. This may relieve some of the strain on the Treasury, as individuals would also bid for the metal. However, it is questionable whether individuals desire to hold the metal, since they have learned by bitter experience that in times of stress they are forbidden to do so, and in times of prosperity, there is no need to hold gold. Moreover this would not stop the importations of gold at all, since none of the basic causes would have been removed, nor would it prevent the growth of purchasing power and the subsequent rise in domestic prices resulting from this increased wealth.

2. Reduce the price of gold by legislative action from $35 an ounce to $30 an ounce. Such a proposal was recently made by a bill introduced to Congress. It was immediately voted down and any such proposal would probably have a similar course. Nevertheless, even if the idea were politically possible it also appears to possess dangerous results. We have today some four billions of foreign gold, all of which is represented in the form of deposits for the account of individuals or in the form of other capital assets. Should the price of gold be cut, our liabilities would remain intact while our assets would be cut by the amount of the price change. Hence we would pay about 1 1/3 ounces of gold to foreigners who originally gave us only 1

ounce. Likewise other nations as Great Britain, having gold funds, would have their purchasing power over world commodities cut by the extent of the depreciation. This method would also play havoc psychologically with economic conditions, although actually the internal domestic price level of the U. S. would undergo but little or no change. Only the price of our exportable commodities would rise for foreigners, cutting our exports, until prices were reduced again internally to effect equilibrium. Furthermore, should the U. S. and Great Britain refuse to take gold at the stablished price, other world currencies would be endangered since all degree of international currency stability will have been destroyed. Currencies would again have to seek their own levels, resulting in unpredictable events.

3. Permit the Treasury to increase the handling charge from the present rate of 1/4 of 1% to say 10%. This would be tantamount to reducing the price of gold, previously discussed.

4. It may be possible for the world to restrict the output of gold through international action. It has been suggested that a system of quota production be adopted similar to that in effect in sugar and rubber, with each nation being allotted a certain percentage of world production. But would South Africa, whose entire economic existence is based on the gold industry willingly restrict its output? And would Russia, where gold production is an activity of the state, fall in line? Moreover, in many areas the output of gold is merely a derivative of other types of production, such as copper and zinc.

The foregoing are merely present ideas as to what may or may not be done with this problem. Its importance cannot be exaggerated and a solution will have to be found. What it will be cannot be guessed at this moment. Although some assistance to the U. S. is monetarily being given by purchases of the Stabilization Funds of Holland and Great Britain, their limit of absorption must also soon end. This difficulty has been recognized in some quarters. General Jan C. Smuts, Prime Minister of South Africa, recently stated "The question arises whether the time is not coming to review the new dangers emerging for gold, and for the whole economic system of the world....my colleagues have gone to London to probe the question and see what can be done in order to render the position of gold more safe than it is today". Speaking of the recent world wide stock market slump which began on the Johannesburg Market the General said "The slump was not confined to South Africa. It was world wide because there was danger that the United States was not going to buy gold". And it might be added, it still is a danger, despite all protests to the contrary from Washington. Nothing has changed during the past month, except that the situation has become more aggravated. On May 10, Representative Hamilton Fish introduced a short resolution purporting to restrict this country's imports of foreign gold. This particular piece of legislation will probably not go very far, but the case is cited to show how very vital the question is becoming.

The present problem is of even greater import to Great Britain than to the United States, since her colonial possessions are large producers of the metal (53% of the world total in 1936) while the British Stabilization Fund is confronted with the same problem as our Sterilization plan. As General Smuts has intimated, the question of gold is bound to be discussed at the present Imperial Conference meeting in London. The progress of this meeting should be closely watched by all observers, since recommendations as to England's future action regarding gold will be of vital importance to the United States and the rest of the world. Will it be possible to restrict production so that present output can be absorbed? Is it possible to develop new markets for gold, either at the present price or at lower quotations for the metal? Will gold be completely demonetized, so that each nation will of necessity have a managed currency? It is probable that these and other fundamental problems will be discussed. In conclusion it must be stated that the problem is one of world import, and any steps taken unilateraly are out of the question. Unified action by the principal nations of the world alone will prevent dislocations of national or international economies.

Norman Brassler

May 22, 1937