

THE SILVER MARKET

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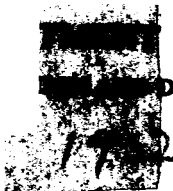
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is something more than a commodity in the ordinary sense of the word, but its use as a national standard of value is very limited. Moreover, its mere use as the principal monetary metal in various nonsilver-standard countries like India does not cause silver to merit special consideration any more than the similar use of copper or nickel in fractional currency puts those metals in a class apart. A commodity, in the dictionary sense of the word, is that which is bought and sold. It is under this definition that silver is classed as a commodity in this study. Gold, also, is a commodity; it is bought and sold. But gold is in addition an important standard of value, and in normal times practically all the world's business transactions are, directly or indirectly, measured in gold. This places gold distinctly in a class by itself. But silver is not in the same position. In the economic structure of the United States the position of silver is that of a commodity.

Figure 1 shows the course of the price of silver in New York and that of the index number of wholesale commodity prices in the United States since 1914. This chart reveals a general similarity between the two curves (which are drawn on fairly comparable scales). By and large, silver is seen to have acted very much like other commodities as a group during recent years. Yet, it will be noted that the price of silver latterly has deviated somewhat, in a downward direction, from the course of the trend in American wholesale commodity prices. Later we shall measure with some care the extent of those deviations, after having explained some of the reasons for them. For the present it is sufficient to observe from the chart that silver acts like other commodities as a group, in the matter of price fluctuations.

Since the price of a commodity is determined by the interplay of supply and demand, it might be of interest to tabulate these factors in the price of silver. To some extent this could be done; but only approximately. For example, the annual output of newly mined silver can be measured with some degree of accuracy, and fairly reliable estimates of the supplies of silver which have been put on the market each year by other holders of the metal are available. Demand, also, can be estimated in part—from the export and import statistics of various countries and from estimates of the consumption of silver in the industries and arts. But the problem is far more complicated than it may seem. There are many imponderables, some of which arise precisely because of the fact that in world economy silver is more than a commodity. Because the price of silver is identified with the value of exchange on silver-standard countries, China chiefly, that price is the result not merely of the supply of and demand for silver, the metal, but is further conditioned by the supply of and demand for silver-standard currencies in the foreign-exchange market.

As used in the silver market, the term "supply" usually refers to the silver being currently marketed. In one sense, practically all the silver ever mined by man constitutes supply, at least potentially, because silver is virtually an indestructible metal. Comparatively little is lost in abrasion of coins or is believed to be otherwise used up or irretrievably misplaced. A large part of the mined silver rests in Asiatic hoards in the form of jewelry, bullion, or coin, while a considerable quantity of the metal is scattered throughout the Occident in the

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Trade Promotion Series—No. 139

THE SILVER MARKET

By

HERBERT M. BRATTER

Finance and Investment Division



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FOREWORD

Among the features of this publication, which surveys the silver market to date and includes considerable material not previously available, are an analysis of the world trade in silver; the organization of the market and determination of the price; the long-term trend in the price of silver; the position of that metal in the economic life of the United States, India, and China; silver and oriental purchasing power; the movements of treasure to and from the Orient; and—of especial interest lately—the outflow of gold from British India.

As to world trade in silver, in the following pages the chief flows of silver are traced step by step from mine to ultimate "consumer" in Asia; also the reverse flows from Asia to the West are shown. The trade in the United States, where exports regularly exceed mine production, is described and analyzed. A flow map shows the movement of silver within China.

The outflow of gold from India, which after the middle of last year attained a volume exceeding the world's mine production of the yellow metal, has been more than just an interesting economic phenomenon. It has been promoted by the premium to which gold has gone in terms of other commodities (silver included) and is one effect which the world economic depression is having on India. The arrival in the Occident of this metal comes at an opportune moment. The movement, fortunately, is not believed likely to terminate for some time, for India is said to hold between \$2,500,000,000 and \$3,000,000,000 of gold, and there exists no official impediment to the metal's outflow.

As appendixes to this bulletin, statistics believed useful for reference purposes are presented on the mine and refinery production of silver, and industrial consumption; the price of silver; rules governing trading in silver futures; United States, British Indian, and Chinese silver movements; and silver as money.

In an earlier publication (*Trade Information Bulletin No. 682, The Price of Silver*, by Herbert M. Bratter), the Finance and Investment Division of the Bureau of Foreign and Domestic Commerce discussed the elements of supply and demand which determine the price of silver. Although this bulletin is now out of print, persons interested may find copies available for reference use in the files of the bureau's district offices or in the libraries of the larger cities.

FREDERICK M. FEIKER, *Director,*
Bureau of Foreign and Domestic Commerce.

OCTOBER, 1932.

THE SILVER MARKET

INTRODUCTION

There has been renewed and widespread interest in silver during the past few years. Unusual fluctuations in the price of the metal, with repercussions in the exchange market in China, have served again to center public attention on developments in the silver market. The National Metal Exchange in New York in June, 1931, added silver to the list of metals it trades in daily, with the resultant creation in this country of an open market in silver futures, and there now appear in our newspapers daily quotations for such deliveries. Moreover, renewed fluctuations in the quotations of Chinese exchange—a natural concomitant of fluctuations in the price of silver, since China retains the silver standard—have intensified the interest of exporters and importers generally in the metal. Finally, the changes which have recently occurred throughout the foreign-exchange market because of various suspensions of the gold standard have awakened interest on the part of the general public in the position of silver in world economy.

Silver, the metal, is a commodity; and as such it appears in the arts and industries and in the metal trade. In certain countries it is, moreover, the standard of value. In the trade of the world with such countries silver fulfills the function of an international medium of exchange, a settler of balances. Finally, silver finds widespread use as subsidiary money in countries where it is not the standard of value. The latter use of silver extends practically throughout the civilized world. Any adequate attempt to treat of silver must give some consideration to each of the four "natures" of the metal referred to above. Of those persons interested in the subject in one way or another, the silver producer, the mine owner, the broker, and the refiner must acquaint themselves with more than the commodity nature of silver; the foreign trader and the banker must acquaint themselves with more than the monetary use of silver; and the general public should acquaint itself with more than the "small-change" use of silver.

In the following pages, therefore, an attempt will be made to give a general picture of the subject embracing the four aspects mentioned above. Essentially, the object will be to describe the situation as it exists to-day, including information of a historical nature only as it seems necessary to a clear understanding of the topic, and including such statistical data as seem to meet current demand. A partial list of books and periodical articles on silver is given in Appendix 10.

THE SUPPLY OF SILVER

There are persons who feel that to call silver a commodity is to ignore its uses in certain areas as a store of value or a standard of value. This conclusion is incorrect, for no one can deny that silver

is something more than a commodity in the ordinary sense of the word, but its use as a national standard of value is very important. Moreover, its mere use as the principal monetary metal in nonsilver-standard countries like India does not cause silver to receive special consideration any more than the similar use of copper and nickel in fractional currency puts those metals in a class apart from a commodity, in the dictionary sense of the word, is that it is bought and sold. It is under this definition that silver is classified as a commodity in this study. Gold, also, is a commodity; it is bought and sold. But gold is in addition an important standard of value and in normal times practically all the world's business transactions are, directly or indirectly, measured in gold. This places gold distinctly in a class by itself. But silver is not in the same class. In the economic structure of the United States the position of silver is that of a commodity.

Figure 1 shows the course of the price of silver in New York City and that of the index number of wholesale commodity prices in the United States since 1914. This chart reveals a general similarity between the two curves (which are drawn on fairly comparable scales). By and large, silver is seen to have acted very much like other commodities as a group during recent years. Yet, it will be noted that the price of silver latterly has deviated somewhat, in a downward direction, from the course of the trend in American wholesale commodity prices. Later we shall measure with some care the extent of those deviations, after having explained some of the reasons for them. For the present it is sufficient to observe from the chart that silver acts like other commodities as a group, in the matter of price fluctuations.

Since the price of a commodity is determined by the interplay of supply and demand, it might be of interest to tabulate these factors in the price of silver. To some extent this could be done; it could be done approximately. For example, the annual output of new silver is known, and silver can be measured with some degree of accuracy, and there are reliable estimates of the supplies of silver which have been in the market each year by other holders of the metal are available. Demand, also, can be estimated in part—from the export and import statistics of various countries and from estimates of the consumption of silver in the industries and arts. But the problem is far more complicated than it may seem. There are many imponderables, which arise precisely because of the fact that in world markets silver is more than a commodity. Because the price of silver is identified with the value of exchange on silver-standard currencies in China chiefly, that price is the result not merely of the supply and demand for silver, the metal, but is further conditioned by the supply of and demand for silver-standard currencies in the exchange market.

As used in the silver market, the term "supply" usually means the silver being currently marketed. In one sense, practically all the silver ever mined by man constitutes supply, at least potential supply, because silver is virtually an indestructible metal. Compensating little is lost in abrasion of coins or is believed to be otherwise irretrievably misplaced. A large part of the mined silver is held in Asiatic hoards in the form of jewelry, bullion, or coins. A considerable quantity of the metal is scattered throughout the world.

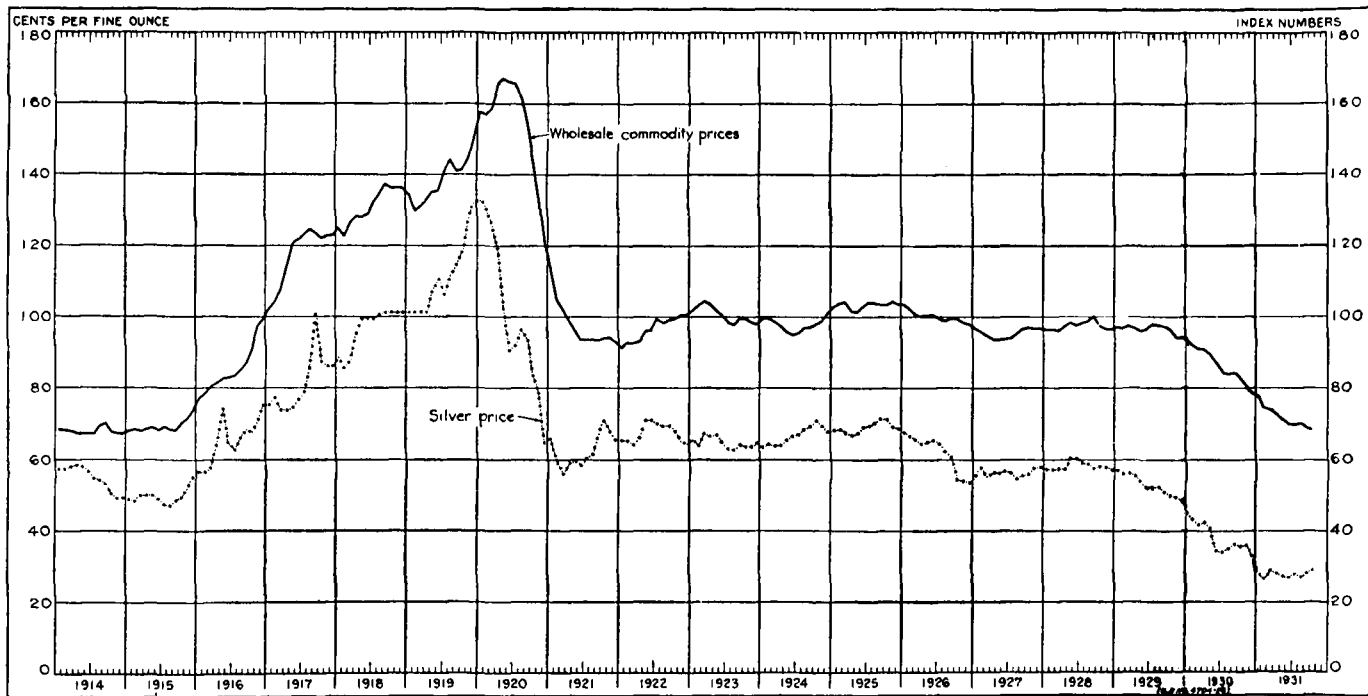


Figure 1.—Silver price and wholesale commodity prices in the United States, 1914-1931. (The wholesale commodity price curve is based on the index number of wholesale prices in the United States as compiled by the U. S. Department of Labor)

form of table service, decorative articles, and the like. Such silver does not constitute part of the active market supply. But it may sometime be melted and offered for sale.¹ In this manner silver does, in fact, come back to the market at intervals, again and again; the silver quarter in one's pocket may contain metal wrested by Pizarro from the Incas. Silver is, therefore, a commodity which differs from most other commodities—foodstuffs or textiles, for example—because there is practically no limit to the number of times it may be “consumed.”

With the world stock of silver being added to each year by the output of mines, the world stock of silver, “visible” and “invisible,” is clearly many times greater than the new supply currently on the market. The latter, of course, is not any fixed quantity, but varies from time to time, as will be explained. In 1931, for example, the new silver estimated to have been sold on the world market was about 196,000,000 troy ounces. Old silver, obtained almost exclusively from melted coin, and physically transported from a seller to a buyer at least once during that year, added an estimated 60,000,000 ounces. Silver recovered from industry and the arts is not estimated. The total of the two figures just mentioned indicates that actual metallic silver to the amount of probably 256,000,000 ounces changed hands one or more times during 1931. There is no available method of calculating the total sales involved in handling this silver during 1931—that is, the turnover. A single lot may have changed in ownership many times.

If it is impossible to calculate total sales involved in the marketing of the new production and demonetized metal, it is equally impossible to keep track of what for convenience may be termed the “invisible” silver constantly being bought and sold—that is, of the foreign-exchange transactions of silver-standard countries. This “invisible” silver is an important factor in the silver market. For example, when a Chinese importer of motor cars pays his bill by selling Shanghai taels in order to buy gold dollars, he is adding to the supply of silver on the world market every bit as much as is the Mexican mine owner when he ships his bullion to the United States. China, the only remaining silver-standard country of importance,² annually imports several hundred million dollars' worth of merchandise. That means the invisible supply of silver on the market is increased by that amount; and, just as in the case of the physical metal annually marketed (where the actual metal may be sold again and again), so in the case of this “invisible” supply—foreign exchange—there are sales and resales. In other words, a small group of active Chinese exchange speculators may greatly augment the volume of transactions in the silver market by buying and selling, rebuying and reselling, silver bullion or exchange between silver-standard and gold-standard countries. Total purchases and sales of all kinds in the silver market are thus obviously impossible of determination.

As already stated, certain of the elements of supply and demand in the silver market can be estimated with fair accuracy. These include, on the supply side, new production and sales of melted coin and, on the demand side, the silver imports of oriental countries, the consumption by occidental arts and industries, and world coinage of the metal.

¹ When, after the World War, the price of silver soared, there was noticeable here and in Europe an increase in the melting of old silver articles. With a low price of silver, this potential source of supply is now of very small importance in this country.

² From a foreign-exchange standpoint, Hong Kong is part of China.

MINE PRODUCTION

In Appendix 1 are given the figures of silver mined by leading producing areas since 1492, also production in the United States, by leading States.

The leading silver-mining country is Mexico; the United States, Canada, and Peru follow in importance. With an annual output placed at 86,000,000 ounces for 1931, Mexico was far and away the largest producer. The United States, in second place, accounted for

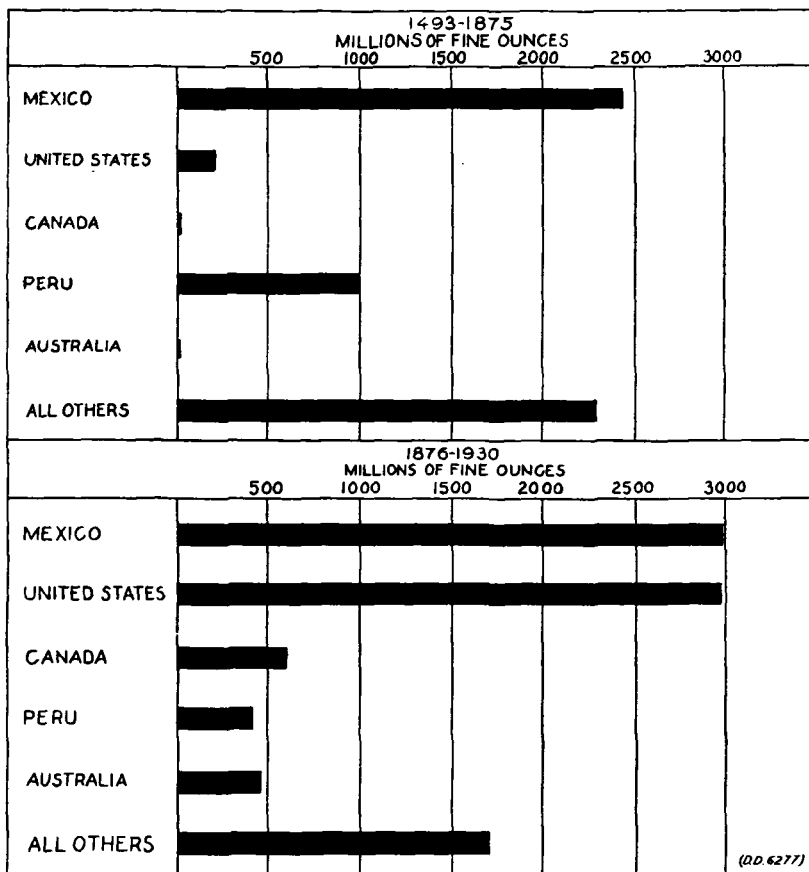


Figure 2.—World mine production of silver, 1489-1830. (For data see Appendix 1-A)

about 32,000,000 ounces. Canada produced some 21,000,000 ounces, Peru yielded around 9,000,000 ounces, Australia around 9,000,000 ounces, and other countries unimportant amounts. Although over 85 per cent a New World product, silver is being mined to some extent in most countries of the world. Thus, European countries (at one time the chief source of silver) in 1931 contributed about 12,000,000 ounces, African countries about 1,250,000, and Asiatic countries around 14,300,000 ounces.

To the total new supply of silver must be added "other supplies," the silver returned to the market by governmental melting of silver coins. Such sales in 1931 totaled an estimated 59,200,000 fine ounces,³

³ Handy and Harman, Review of the Silver Market for 1931. A table of Handy and Harman estimates of "other supplies" appears on page 61.

made up of Indian Government sales (35,000,000 ounces), Siamese Government sales (20,000,000 ounces), and Mexican Government sales (4,200,000 ounces).

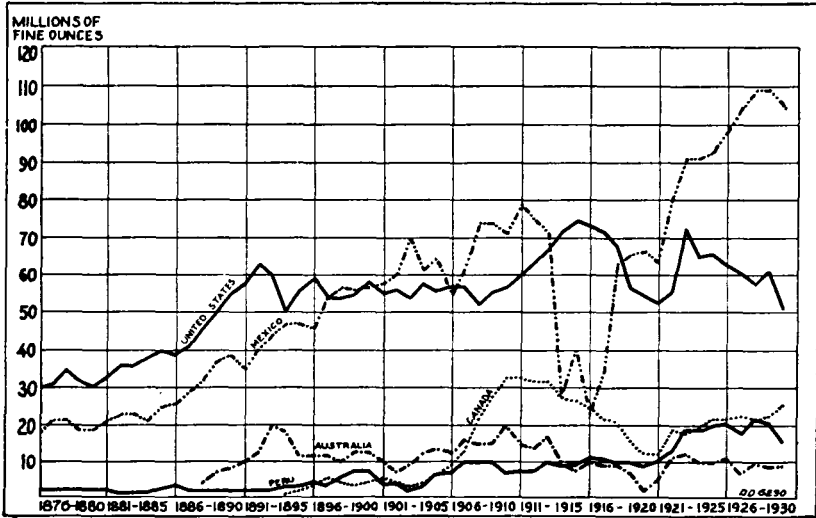


Figure 3.—Mine production of silver in leading countries, 1876-1930. (For data see Appendix 1-A)

BY-PRODUCT SILVER

Because silver is not found pure in nature but occurs in combination with lead, copper, zinc, gold, and complex ores, the white metal is sometimes described as largely a by-product. While this is true,

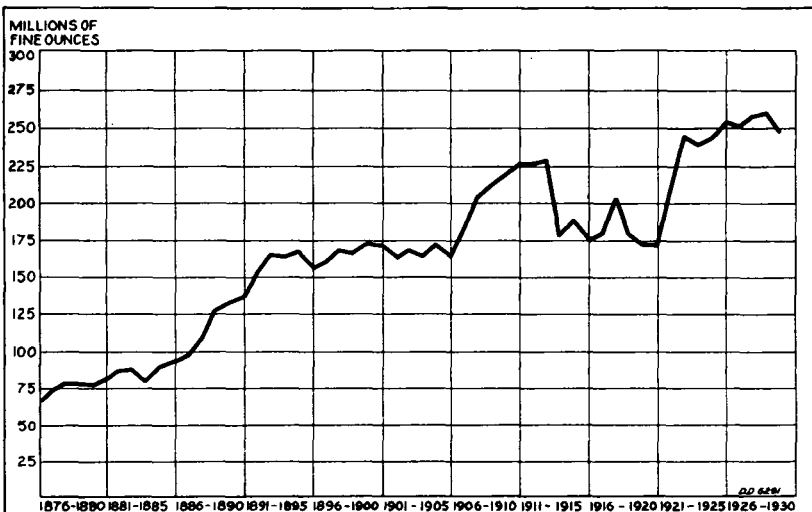


Figure 4.—World total mine production of silver, 1876-1930. (For data see Appendix 1-A)

it should be realized that the value of the silver in any given quantity of ore is merged with the value of the other metals which the ore contains. Where silver contributes only a minor share of a mine's

revenue, it may well be viewed by the mine owner as a by-product. On the other hand, silver may contribute only a small portion of a mine's revenue, yet enough to make profitable the operation of an otherwise unprofitable mine; in such a case silver can not be described as a by-product in the generally accepted meaning of the term.

What proportion of the world's silver output can be classified as by-product depends upon the value of the total output of silver-producing mines and the value of each component part (silver, lead, copper, or other minerals). Based on 1926-1928 metal prices, the Bureau of Mines ⁴ found that over one-quarter of the world's silver production could be considered as derived from non-by-product silver ore, by which is meant ore depending on silver for over 80 per cent of its recoverable value.

Another method sometimes used to determine (approximately) what is by-product silver, is to segregate, by weight, the production from "dry and siliceous ores." The latter are the most nearly pure silver ores to be found. Such ores account for less than 20 per cent of the world's silver production,⁵ the remaining silver being produced from lead and copper ores. As stated, this method is only approximate, as it is based on weight and not on value. The above-mentioned estimate of 80 per cent, based on value, probably still holds good, if the figures in Table C on page 68 are an indication.

THE DEMAND FOR SILVER

The demand for silver may be divided into three parts: (1) Purchase by the Chinese and British Indians for monetary use and for hoarding; (2) consumption of silver in the industries and arts of other countries; and (3) mint purchases.

The Chinese and Indian takings of silver are by far the most important, and are generally considered to be in a class by themselves.

The Indian Government has for several years been one of the most important sellers of silver, derived from the coins returned from circulation; and it naturally no longer has occasion to import silver. Thus, Indian imports are destined for use only by the Indian people in the form of bullion or jewelry, as a store of value—an investment, if you will. In the form of jewelry silver in India also serves as a token of social standing.

The Chinese consumption is somewhat different from the Indian. The Chinese authorities do not ordinarily have occasion to sell silver on the bullion market, but buy it regularly for coinage. Another difference between the two nations is that China, unlike British India, is on the silver standard. Silver is in China the chief measure of value and, both in the form of coin and of bullion, it serves the purpose of money. In India the currency is linked to the pound sterling, and the rupee circulates without regard to its bullion value.

Occasionally it becomes necessary or desirable for China or India to export silver; but, in the main, they are heavy importers of the metal and form the chief support of the silver market. For example, in 1931 the net consumption of silver in India and China together was 45.4 per cent of the total sold that year (that total including the sales by the Indian Government and by Indian silver-mining companies).

⁴ Economic Paper 10, pp. 2-3.

⁵ Based on United States production figures for 1927-1930. There is considerable variation as between States. (See table in Appendix 1.)

Of the non-Asiatic supply, the consumption of China and India naturally formed a much larger percentage. (See table below and fig. 9.)

The second large factor in the demand for silver is the consumption by the arts and industries in other countries, chiefly the United States and Canada, Great Britain, and Germany. Without going into detail, this use of silver may be described as being made up by sterling silverware about 44 per cent, plated silverware about 14 per cent, and other industrial consumption (for photographic film, chemicals, and the like) 42 per cent, based on 1930 estimates for the United States and Canada.⁶ Until 1929 the consumption of silver in the arts and industries revealed an irregular upward trend. The business depression following 1929 affected the use of silver in industry.

Finally, the consumption of silver in the coinage of subsidiary money in western countries is a considerable factor in the price of silver. Such consumption of silver is more irregular and much smaller than either the purchases of the Far Eastern countries or the industrial demand of the Occident.

The following table (see also flow map facing p. 35) shows the estimated supply of and demand for silver in 1930 and 1931, taking, for this purpose, the estimates published by Handy and Harman. The estimates for 1931 are subject to revision.⁷

THE SILVER MARKET IN 1930 AND 1931

[According to Handy and Harman, "Review of the Silver Market for 1931"]

Item	1930		1931	
	Millions of fine ounces	Per cent of total	Millions of fine ounces	Per cent of total
SUPPLY				
New production.....	246.8	77.5	196.1	76.2
Sales by Indian Government.....	29.5	9.3	35.0	14.1
Other governmental sales of demonetized silver.....	42.0	13.2	24.5	9.6
Total.....	318.3	100.0	255.6	100.0
DEMAND				
Net Indian consumption.....	94.5	29.7	57.0	22.3
Net Chinese consumption ^b	123.0	38.9	59.0	23.1
Total Indian and Chinese consumption.....	217.5	68.6	116.0	45.4
German consumption.....	8.0	2.5	28.2	11.0
Arts and industries, United States and Canada.....	29.5	9.3	30.5	11.9
Great Britain.....	6.0	1.9	10.0	3.9
Mexico.....	1.0	.3	1.0	.4
Total arts and industries.....	36.5	11.5	41.5	16.2
Coinage:				
United States only.....	6.1	1.9	2.4	1.0
Hong Kong.....	14.0	4.4		
Otherwise unaccounted for.....	36.2	11.4	67.5	26.4
Total.....	318.3	100.0	255.6	100.0

^a Abbreviation of the items accounts for the slight discrepancy in the summation of these columns.

^b Includes Hong Kong.

⁶ See estimates by Bureau of the Mint and by Handy and Harman, Appendix No. 2, and Figure 12.

⁷ It will be noted that not all the items agree with other sources. For example, the estimates of United States production and of United States consumption in the arts and industries differ from the Mint Bureau estimates.

WHERE THE PRICE OF SILVER IS DETERMINED ⁸

Produced principally in the New World and absorbed chiefly by Asia, silver is a widely traveled metal. Like gold, it is a restless wanderer. When it reaches its destination in interior China or India its peregrinations are not ended, for, sometimes years later, it is reshipped to other parts of the world. Obviously the international movement of silver implies that persons in widely separated regions are factors in the market or have an interest in silver. All persons owning an interest in silver-producing mines (copper, lead, or zinc mines are in this class) or in the refining of bullion, and those benefiting by the commodity trade of or with silver-standard countries (chiefly China, Hong Kong, and Persia), and their bankers, have some interest in the white metal. The silver market is world wide, and, with modern communication facilities, the gold price of silver normally is a world price. Hence, ordinarily we do not speak of silver prices in the plural, except to differentiate as to time or place of delivery, as the "spot price" or the "price of futures," the "London price" or the "New York price."

WHY LONDON IS A LEADING SILVER CENTER

The silver market should be considered as including not only the trade in bullion, but also the silver-currencies foreign-exchange market—that is, the international trading in the Shanghai tael, the Hong Kong dollar, the Persian kran, and the like. With the long-standing financial eminence of London and the pound sterling, with British banks scattered throughout the Orient and the oriental banks represented in London, and with a very large share of the world trade for decades financed by British banks in terms of sterling, one can readily appreciate how London long ago came to assume an important position in eastern exchange and silver. As regards the actual handling of bullion, the proximity of the United Kingdom to the European markets, the development of British business interests in all parts of the world where silver is produced, consumed, or circulated, and the possession of very favorable shipping and cable connections spreading from a nucleus at London and Southampton to the principal ports of the world—all have been factors in the growth of London's silver market.

An item of considerable importance is the matter of tradition; for, apart from a long-standing prestige as a general financial center, London has many generations of specialized experience in the silver-bullion market. One of the four leading English silver-brokerage firms antedates the Bank of England itself by 10 years.

Leadership in the world's silver market in the past has been claimed for London by virtue of the expert technical knowledge possessed by the bullion brokers and their staffs. These brokers, it is said in England, have an unsurpassed technical knowledge of every phase of the silver business—buying and selling, shipping, insurance, and arbitrage. It is further held that "no London broker operates on his own account, which, in itself, is an adequate safeguard of the broker's impartiality in carrying out the orders of his clients," and that London possesses certain advantages not to be had in any other silver market,

⁸ Acknowledgement is made of valuable assistance received from Mr. H. K. Hochschild, of the American Metal Co. (Ltd.), in the preparation of this section.

namely, that no other market is as capable of handling large Government orders so discreetly as London; that the English metropolis is much less speculative than New York or the eastern markets; that it is the "natural" market for Indian traders; and, in general, that it possesses unequalled connections. An additional factor is that to some extent London brokers are willing to take risks of forward contracts with certain Indian speculators, a practice which New York brokers will not adopt.

In considering London's importance in the silver market, the part played by Shanghai and other places in the bullion and silver-exchange market must not be overlooked.

That London is the logical silver market for British Indian purchases no doubt is true. To the Indian trader the existence of close banking connections between India and the United Kingdom means that he can the most readily finance his silver purchases through the London market. Sterling, moreover, is the leading foreign currency quoted in India, and, in normal times, much closer figuring is possible in sterling than in the case of dollar exchange. Thus, the fact that London is geographically much nearer to Bombay than is New York means that the cost of shipping silver from London is cheaper than from New York; the freight charges in the latter case are no higher, but the shipping time is only about 22 days from London compared with about 40 days from New York. Sailings to India from New York, furthermore, are irregular and infrequent. Hence, the item of interest on silver en route is a factor favoring London. Finally, in the case of ships from London, the Indian dealer can calculate arrivals closely and fairly safely, a matter of much importance at the time of the monthly settlement in Bombay.

Once every day, to use market parlance, four firms of London brokers "fix" the price of silver. London, however, should not for this reason be visualized as a sort of closed corporation, dictating to the world what should be the price of the Shanghai tael or the value of an ounce of silver in New York or Antofagasta. The London exchange-silver market rather must be regarded as a true market place, where buying and selling orders from all over the world meet.

Wherever the greatest number of transactions in any world commodity are effected, there the world price of that commodity is set. If more transactions in silver (bullion plus exchange) are for a time effected in London than elsewhere, for so long the price is being made in London. The market employs the word "fixes" simply as a convenient term; "determines" might be a better word. It can not be implied that the "fixing" is something to which there are no limits. It is more nearly correct to say that, if at any time the London price of silver is the world price, it is such simply because the meeting of the largest amount of demand and supply is taking place there and such meeting of demand and supply fixes the price. Whether all the silver involved in the London silver market physically reaches the United Kingdom or not does not really matter. It should be kept in mind that the demand and supply of silver bullion and the demand and supply of silver exchange are both determinants of the price of silver.

THE GREAT SILVER MARKETS OF THE WORLD

Of the several advantages London possesses as a silver market, that of being a trade-financing center probably has been of major importance. The silver bullion market first grew to importance in London when silver was much more widely used than now as a standard of value and a settler of international trade balances. British capital, moreover, being early invested in mines producing silver, there was an added, although lesser, reason why London's silver market developed. In the case of New York, the international trade-financing factor, although present, has not been the most important, but it has gained considerable weight in recent years. More important has been New York's trade in silver bullion. As silver became essentially a North American product, and the United States was for years the largest producer, New York quite naturally came to play an important part in the marketing of silver. While the United States is no longer the leading silver producer, the New York silver market is more important than ever.

Mr. H. K. Hochschild, in a recent letter, ranked Shanghai as the leading silver market, followed by Bombay, New York, and London, in the order mentioned. The first two, in his opinion, usually are the most active. He wrote:

The four principal silver markets of the world are Shanghai, Bombay, New York, and London. Next to these, but of considerably less importance, I rank Hong Kong, which normally clears most of its business through Shanghai, but at rare intervals becomes an independent factor. The five cities include, of course, their respective hinterlands. In general, the silver business of the United Kingdom is cleared through London, that of the United States (with the infrequent exception of San Francisco) through New York, that of India (with the infrequent exception of Calcutta) through Bombay, and that of China (with occasional exceptions, principally as above noted, that of Hong Kong and its South China hinterland) through Shanghai. Of the four leading markets, Shanghai and Bombay are in general the two most active, although at times New York or London may predominate for a short spell. Since the war London has lost and New York has gained in importance, particularly because it has become possible to trade in far futures on the New York National Metal Exchange.

Contributing to Shanghai's leadership in the silver market is the large speculation there in the foreign-exchange market and in gold bars. Also, the very broadness of the Shanghai market is an additional inducement to traders. The possibility of a squeeze on spot silver is negligible in Shanghai as compared to the same risk in Bombay and London. In Bombay it is possible under certain conditions for a shrewd and daring speculator to corner the market on spot delivery, although the spread between the spot settlement and the next settlement in Bombay is now limited by the Bombay bullion exchange to 3 rupees 8 annas per 100 tolas.

ALL SILVER MARKETS INTERRELATED

In considering the relative positions of the chief silver markets, in so far as they are concerned with the marketing of silver bullion, the question may be somewhat simplified by reference to the flow map (fig. 9) of the silver market. Most of the world's mine production nowadays passes through New York and San Francisco. The greater part of the silver shipped from America goes by water westward via New York or San Francisco to the Orient. Presumably, most of the North American silver figures in the New York market, and thereafter may, in the course of its marketing, be bought and sold in the London market one or more times, even though the actual bullion may never reach London.

Also, the volume of silver moving eastward from the New World to the United Kingdom for sale or transshipment is large. In the Far East the chief receiving port for silver is Shanghai, followed by Bombay. Thus, as silver moves around the world to its destination, the same silver usually enters at least two markets—chiefly, New York, London, Shanghai, and Bombay.

The various silver markets are not always competitors. New York, which on balance may be termed essentially a "selling" market, in the long run does not compete with Shanghai or Bombay, essentially "buying" markets. New York and Shanghai or Bombay may be regarded rather as supplementing each other. London's position in the silver bullion market is entirely that of a middleman. In the silver which it buys it is a "buying" market, supplementing New York, and, to some extent (demonetized silver), other markets, and as between London and Bombay, the former is essentially a seller of bullion; the latter a buyer. London is Bombay's chief immediate source of silver bullion.

Since silver bullion does not always pass directly from western producer to eastern buyer, but is often sold and resold while en route, it can be readily appreciated that there is keen competition between New York and London for the silver brokerage business. A successful brokerage center must have fairly constant stocks in hand for spot delivery. A large forward business, however, can be conducted upon only a relatively small base of stocks for immediate delivery. Thus, seeing only part of the silver it sells, London does a large part of the world's business in the metal. New York is able to develop direct connections with far eastern buyers to the extent that it can offer facilities as good as those of London. This it has been able to do in recent years, despite London's geographical, financial, and traditional advantages.

Speculative transactions, involving silver or the Shanghai tael, tend to make the world silver market a unit. The existence of almost immediate means of communication by cable, radio, and telephone makes it possible for a speculator in one part of the world to be a factor in the silver market on the opposite side of the world, to be in and out of that market daily and even more frequently, and to participate in several silver or silver-exchange markets simultaneously. Theoretically the possibilities for arbitrage are legion, although, because of the very existence of excellent cable and radio facilities, such opportunities are very short-lived and the possibilities for profitable oversea arbitrage are thereby very greatly restricted.

It follows that the participants in the leading silver markets represent practically the whole silver world. Chinese buy (and also sell) in New York, London, and Bombay; Americans and Mexicans sell in London, Bombay, and Shanghai; British Indians trade both ways in London, New York, and Shanghai. Thus, transactions involving either silver or a silver-standard currency form a network which connects all the silver markets. These transactions, nevertheless, are not exactly simultaneous, owing chiefly to the differences in time between the various cities concerned. Just as the day moves around the world westward from the international date line in the Pacific Ocean, so the silver market circumnavigates the globe.

A DAY WITH SILVER AROUND THE WORLD

THE SHANGHAI OPENING

The first silver market to "awaken" in the day is Shanghai. Some Chinese traders receive overnight cables from London and New York as early as 7 a. m. (The cables may convey simply news of the preceding day's closing price in those markets, or perhaps orders to be executed in China.) On the basis of those cables the trade initiates business with interior cities, and in some cases can have replies before the opening of the Shanghai market around 9.30 a. m. At that hour the banks and brokers generally begin the day's activities. Business with Yokohama and Tokyo is possible immediately, because Japanese time is one hour ahead of Shanghai time. By 10.30 a. m. Shanghai time, business with Singapore and Batavia is also possible.

When it is 9.30 in Shanghai it is 7 o'clock in Bombay, and enterprising Bombay operators commence digesting the cables which have accumulated overnight. (Practically all the orders from London and New York come by overnight message.) The Shanghai 9.30 a. m. opening is known in Bombay early in the day (Bombay time) and even the opening afternoon prices are sent from Shanghai by urgent message in time to reach the Bombay market between 11 a. m. and noon. The Bombay market generally attains its maximum daily activity at that time. When the Bombay market gets under way in the morning—the "kutchra" bazaar (curb) opens at around 8.30 a. m. and the Bombay bullion exchange at 10.30—the tone of the market is cabled to Shanghai, where the news arrives in time to influence the afternoon trading, in case any significant activity is noticeable in Bombay.

Meanwhile, the Shanghai market is in full swing. Cable orders which have arrived from London, New York, and Bombay overnight are executed and the exchange market is busy. If a London bank having an office in New York wishes to alter its overnight instructions to Shanghai because of developments in New York during the afternoon, it can do so by having its New York office send the cable to Shanghai. The banking hours among foreign exchange banks in Shanghai are about the same as elsewhere, with the exception of a 2-hour period for "tiffin" (lunch), from noon to 2 p. m. Business on the important gold-bar exchange in Shanghai, however, is not interrupted during those two hours. By the afternoon opening in Shanghai orders sent from Bombay earlier in the day (7 or 8 a. m., Bombay time) commence to arrive. These orders are executed in time for confirmation to reach Bombay the same morning. Most Bombay orders to Shanghai, however, are sent by overnight cable and arrive early in the morning, in time for execution in the Shanghai morning market. (Orders in the reverse direction, from Shanghai to Bombay, are almost exclusively "overnight," and are smaller in volume than the Bombay trading in Shanghai.)

THE BOMBAY MARKET

With news of Shanghai's afternoon opening promptly received, Bombay's market assumes its greatest activity after noon. When the Shanghai exchange banks are winding up the day's business at 5 p. m. and when it is 2.30 p. m. in Bombay, it is 9 a. m. in London. By the time London opens (9.30 to 10 a. m. Greenwich time) news of

the Shanghai closing and the Bombay afternoon market is under way. Foreign-exchange business in London commences, swelled by overnight cables from America, and by cables sent the same day from China and India. (A cable sent to London from China late in the afternoon, Shanghai time, is received in London early in the forenoon of the same day.)

LONDON, NEW YORK, AND SAN FRANCISCO

The bulk of London's silver business awaits the "fixing," around 2 p. m. London time. When this price is announced and the cabled news received in India, it is about 7.30 p. m. in Bombay. There the Bombay bullion exchange and the Kutcha bazaar are already closed. Indian traders, however, usually wait until that time to cable their London orders for execution the next day, while some of the more enterprising ones cable orders to London for execution there in the afternoon market of the same day, reply reaching Bombay the same night.

The London fixing occurs about half an hour before trading begins in New York. Thus the London price is known in New York before the opening. When it is 9.30 a. m. in New York and 2.30 p. m. in London, it is 8 p. m. in Bombay. During the season of daylight saving it is only 7 p. m. in Bombay. At such time Bombay traders frequently cable orders for execution in New York during the morning trading and confirmation in Bombay the same night. By the afternoon in New York, trading with London and Bombay is limited to overnight cables and business with San Francisco has become possible. San Francisco foreign-exchange and silver business ends before the market in Shanghai opens.

Thus, the silver market encircles the globe, and each important center—Shanghai, Bombay, London, and New York—in turn plays its part in making the price of silver.

TIME-TABLE OF SILVER MARKET

Reference to the time-table of the silver market will make clear the overlapping of trading hours. The table showing differences in time between the more important silver markets is also of interest. Naturally it takes some time for cables to be transmitted and delivered, and these matters must be taken into consideration.

THE SILVER MARKET

TIME-TABLE OF THE SILVER MARKET

When New York time is—	The corresponding time elsewhere is—				Remarks
	London	Bombay	Shanghai	San Francisco	
6.00 p. m.	11.00 p. m.	4.30 a. m.	7.00 a. m.	3.00 p. m.	Some Shanghai operators commence business.
6.30 p. m.	11.30 p. m.	5.00 a. m.	7.30 a. m.	3.30 p. m.	
7.00 p. m.	12.00 p. m.	5.30 a. m.	8.00 a. m.	4.00 p. m.	Shanghai market in full operation 9.30 to 10 a. m.; some Bombay operators commence business.
7.30 p. m.	12.30 a. m.	6.00 a. m.	8.30 a. m.	4.30 p. m.	
8.00 p. m.	1.00 a. m.	6.30 a. m.	9.00 a. m.	5.00 p. m.	Kutch bazaar opens at Bombay.
8.30 p. m.	1.30 a. m.	7.00 a. m.	9.30 a. m.	5.30 p. m.	
9.00 p. m.	2.00 a. m.	7.30 a. m.	10.00 a. m.	6.00 p. m.	Shanghai foreign banks closed 12 to 2 p. m. (but gold-bar market continues open).
9.30 p. m.	2.30 a. m.	8.00 a. m.	10.30 a. m.	6.30 p. m.	
10.00 p. m.	3.00 a. m.	8.30 a. m.	11.00 a. m.	7.00 p. m.	Bombay Bullion Exchange opens at 10.30 a. m.
10.30 p. m.	3.30 a. m.	9.00 a. m.	11.30 a. m.	7.30 p. m.	
11.00 p. m.	4.00 a. m.	9.30 a. m.	12.00 noon.	8.00 p. m.	Shanghai afternoon market begins; Bombay advised by cable.
11.30 p. m.	4.30 a. m.	10.00 a. m.	12.30 p. m.	8.30 p. m.	
12.00 p. m.	5.00 a. m.	10.30 a. m.	1.00 p. m.	9.00 p. m.	Shanghai receives news of Bombay opening, 1 to 2 p. m.
12.30 a. m.	5.30 a. m.	11.00 a. m.	1.30 p. m.	9.30 p. m.	
1.00 a. m.	6.00 a. m.	11.30 a. m.	2.00 p. m.	10.00 p. m.	Shanghai foreign-exchange and silver cables usually sent 4 to 5 p. m. Shanghai time, when market closes.
1.30 a. m.	6.30 a. m.	12.00 noon.	2.30 p. m.	10.30 p. m.	
2.00 a. m.	7.00 a. m.	12.30 p. m.	3.00 p. m.	11.00 p. m.	London market opens, 9.30 to 10 a. m.
2.30 a. m.	7.30 a. m.	1.00 p. m.	3.30 p. m.	11.30 p. m.	
3.00 a. m.	8.00 a. m.	1.30 p. m.	4.00 p. m.	12.00 p. m.	Bombay exchange closes.
3.30 a. m.	8.30 a. m.	2.00 p. m.	4.30 p. m.	12.30 a. m.	
4.00 a. m.	9.00 a. m.	2.30 p. m.	5.00 p. m.	1.00 a. m.	London price "fixed" on Saturdays.
4.30 a. m.	9.30 a. m.	3.00 p. m.	5.30 p. m.	1.30 a. m.	
5.00 a. m.	10.00 a. m.	3.30 p. m.	6.00 p. m.	2.00 a. m.	London price "fixed."
5.30 a. m.	10.30 a. m.	4.00 p. m.	6.30 p. m.	2.30 a. m.	
6.00 a. m.	11.00 a. m.	4.30 p. m.	7.00 p. m.	3.00 a. m.	New York market opens 9.30 to 10 a. m.
6.30 a. m.	11.30 a. m.	5.00 p. m.	7.30 p. m.	3.30 a. m.	
7.00 a. m.	12.00 noon.	5.30 p. m.	8.00 p. m.	4.00 a. m.	National Metal Exchange (New York) starts trading at 10 a. m.
7.30 a. m.	12.30 p. m.	6.00 p. m.	8.30 p. m.	4.30 a. m.	
8.00 a. m.	1.00 p. m.	6.30 p. m.	9.00 p. m.	5.00 a. m.	London overnight cables to Shanghai usually dispatched between 4 and 5 p. m. London time, when market closes.
8.30 a. m.	1.30 p. m.	7.00 p. m.	9.30 p. m.	5.30 a. m.	
9.00 a. m.	2.00 p. m.	7.30 p. m.	10.00 p. m.	6.00 a. m.	National Metal Exchange (New York) ends trading Saturdays at 12 noon.
9.30 a. m.	2.30 p. m.	8.00 p. m.	10.30 p. m.	6.30 a. m.	
10.00 a. m.	3.00 p. m.	8.30 p. m.	11.00 p. m.	7.00 a. m.	National Metal Exchange (New York) ends trading at 3 p. m.
10.30 a. m.	3.30 p. m.	9.00 p. m.	11.30 p. m.	7.30 a. m.	
11.00 a. m.	4.00 p. m.	9.30 p. m.	12.00 p. m.	8.00 a. m.	New York overnight cables to Shanghai usually dispatched between 4 and 5 p. m. New York time, when market closes.
11.30 a. m.	4.30 p. m.	10.00 p. m.	12.30 a. m.	8.30 a. m.	
12.00 noon.	5.00 p. m.	10.30 p. m.	1.00 a. m.	9.00 a. m.	
12.30 p. m.	5.30 p. m.	11.00 p. m.	1.30 a. m.	9.30 a. m.	
1.00 p. m.	6.00 p. m.	11.30 p. m.	2.00 a. m.	10.00 a. m.	
1.30 p. m.	6.30 p. m.	12.00 p. m.	2.30 a. m.	10.30 a. m.	
2.00 p. m.	7.00 p. m.	12.30 a. m.	3.00 a. m.	11.00 a. m.	
2.30 p. m.	7.30 p. m.	1.00 a. m.	3.30 a. m.	11.30 a. m.	
3.00 p. m.	8.00 p. m.	1.30 a. m.	4.00 a. m.	12.00 noon.	
3.30 p. m.	8.30 p. m.	2.00 a. m.	4.30 a. m.	12.30 p. m.	
4.00 p. m.	9.00 p. m.	2.30 a. m.	5.00 a. m.	1.00 p. m.	
4.30 p. m.	9.30 p. m.	3.00 a. m.	5.30 a. m.	1.30 p. m.	
5.00 p. m.	10.00 p. m.	3.30 a. m.	6.00 a. m.	2.00 p. m.	
5.30 p. m.	10.30 p. m.	4.00 a. m.	6.30 a. m.	2.30 p. m.	

DIFFERENCES IN TIME BETWEEN LEADING MARKETS

Differences in time between the more important silver markets are recorded in the following table.

DIFFERENCES IN TIME BETWEEN THE MORE IMPORTANT SILVER MARKETS

The time in—	Compared with the time in—	Is earlier (+) or later (—) by—	
		Hours	Minutes
New York.....	Bombay.....	-10	30
	Calcutta.....	-10	53
	Hong Kong.....	-13	.....
	London.....	-5	.....
	San Francisco.....	+3	.....
	Shanghai.....	-13	.....
	Tokyo.....	-14	.....
Bombay.....	Calcutta.....	.....	-23
	Hong Kong.....	-3	.....
	London.....	+5	30
	San Francisco.....	+13	30
	Shanghai.....	-2	30
	Tokyo.....	-3	30
Calcutta.....	Hong Kong.....	-2	7
	London.....	+5	53
	San Francisco.....	+13	53
	Shanghai.....	-2	7
	Tokyo.....	-3	7
Hong Kong.....	London.....	+8	.....
	San Francisco.....	+16	.....
	Shanghai.....	.....	.....
	Tokyo.....	-1	.....
London.....	San Francisco.....	+8	.....
	Shanghai.....	-8	.....
	Tokyo.....	-9	.....
San Francisco.....	Shanghai.....	-16	.....
	Tokyo.....	-17	.....
Shanghai.....	Tokyo.....	-1	.....

NOTE.—Daylight-saving time, whereby the clock is advanced one hour in the spring and retarded one hour in the fall, begins in New York at 2 a. m. on the last Sunday in April and ends in New York at 2 a. m. on the last Sunday in September. In London daylight-saving time (called summer time) begins at 2 a. m. on the day following the third Saturday in April (unless such day be Easter, in which case summer time begins at 2 a. m. of the day following the second Saturday in April), the clock being advanced one hour. Daylight-saving time in England ends at 2 a. m. of the day following the first Saturday in October.

Daylight-saving time is not used in Shanghai or Tokyo, nor in Bombay, Hong Kong, or Calcutta, in which three places the latitude makes the days and nights fairly equal in length, and, therefore, offers no advantage in daylight-saving time.

HOW THE LONDON MARKET OPERATES

The London market being participated in by persons the world over, it might be supposed that such a wide market would be complex in its operation; yet the actual workings are relatively simple. Normally most of London's silver-bullion business is transacted in a 15 or 30 minute meeting, once each business day, of representatives of the following four established firms of bullion brokers:

Mocatta & Goldsmid, 7 Throgmorton Avenue, London, E. C. 2. Originally established in 1684 as Moses Mocatta.

Samuel Montagu & Co., 114 Old Broad Street, London, E. C. 2. Established in 1853.

Pixley & Abell, Palmerston House, London, E. C. 2. Present company registered in 1874; firm originally established in 1869 as Pixley, Abell, Langley & Blake.

Sharps & Wilkins, 19 Great Winchester Street, London, E. C. 2. The present company, registered in 1844, was, in fact, established in 1825, as James and Granville Sharp; from old records of the firm the business can be traced back to 1740.

At 1.45 p. m. on week days and 11.30 a. m. on Saturdays the representatives of these bullion brokers meet at the office of one of them (at present, that of Sharps & Wilkins, it having the best accommodations). Each of these brokerage firms receives orders from banks and others in England and from buyers or sellers in all parts of the world, the four firms together receiving all the silver-bullion orders coming to London. Such orders may refer to silver for immediate delivery, or for delivery at some future date.⁹ For any given delivery—say, spot silver—the brokers at their meeting compare their buying and selling orders (which may mention a specified price or simply “at market”) and fix the price at such a level as will effect the greatest number of transactions. It is presumably to the brokers’ interest to do this, because their profit depends upon the volume of business they transact. Precise information on the actual conduct of business at the brokers’ meetings is not made generally available. What supposedly takes place is that all orders for sale or purchase of silver bullion for spot delivery at the market are compared, then the orders for spot silver with the price specified by the brokers’ client. The price which will enable the greatest volume of business to be done is usually the price fixed. On a given day it may be possible for the four firms to execute most of the day’s business each on its own books. Again, a single broker may have a considerable excess of buying over selling orders, and find it necessary to match such excess with the other brokerage firms’ selling orders. The price of silver for future delivery would depend upon the spot price, the prevailing rate of interest, and other considerations.

While the transactions on the London silver market all call for delivery of actual bullion in London, the exchange market is really part of the silver market. In practice there is a large proportion of wash transactions which simply balance each other, immediately or later, and in the end involve no physical movement of the metal. In fact, the larger part of the London market’s transactions are undoubtedly liquidated individually by the four brokerage firms on their own ledgers, at the price fixed at their meeting, without the necessity of interbroker transactions.

An example may help to make this type of operation clear. Thus, an eastern bank in London may appear as a participant in a given day’s silver market in any of several ways, the following being a hypothetical example: The bank, whose business may be simply described as setting off purchases and sales of foreign exchange in such ways as to make a profit for its shareholders, on a certain day is called upon to sell for sterling 200,000 Shanghai taels for future delivery. By purchasing an equivalent amount of silver in London and shipping the metal to Shanghai the bank is enabled to meet its future commitment in Shanghai. Naturally, the bank does not receive payment for the 200,000 Shanghai taels until delivery thereof is made. But it must pay cash for the silver it buys in London, thus tying up a sum of money for a period of several weeks while the bullion is being shipped to China. Therefore, the price paid for the bullion must be lower than the price received for the Shanghai exchange by an amount sufficient to pay shipping expenses, interest, and a profit.

⁹ During and following the war, for 4 years and 9 months ended May 9, 1919, trading in future silver was suspended.

Assume that on the same day silver is sold in London by an American metal company. Such sale was presumably arranged by cable some time ago and is now being consummated upon arrival of the silver in England. If the amount is the same as that purchased by the eastern exchange bank and if it happens that the same broker is handling both transactions, after the determination of the price of silver at the daily fixing the broker simply pairs the two orders on his books, charges a commission to the buyer, who alone pays a commission in the London silver market, and the business is done.

If the same broker has several buying orders for spot delivery totaling, say, 750,000 ounces, and selling orders for the same amount of spot silver, the whole business is done on his own books. If the buying orders in the hands of a single broker exceed the selling orders he holds, he must call upon some other broker to help him take care of the excess. Assuming that another broker has an excess of selling orders of like amount, the two excesses are paired and the business thus executed. In such event the commission the buying broker receives is shared by him with the other broker concerned on a 50-50 basis.

Quotations.—Silver is quoted in London in pence per standard ounce troy. The standard ounce is 0.925 fine. This fineness is purely theoretical. Actually, the silver which appears on the market is usually 0.996 fine, or better.

Commissions.—As stated, the London brokers make no charge for selling silver. On purchases executed they collect from their customers a commission of one-eighth of 1 per cent when the price is over 21d. per standard ounce and 22s. per 10,000 standard ounces when the price is 21d. or less; the minimum brokerage is £1. By an unwritten understanding, London brokers guarantee to execute all at-market selling orders at the price to be fixed at the next fixing, but make no such guaranty with respect to at-market buying orders. Notwithstanding the existence of this exception, London brokers rarely avail themselves of it.

Delivery.—For spot, or as it is called there, "prompt" delivery, the usage in London is to accept delivery within seven days at the option of the seller. Silver sold for future delivery must be delivered on a fixed date, two calendar months from the date of the contract. No days of grace are allowed. Silver 0.996 fine, or better, is good delivery.

Options.—Business in London is often transacted in options of one month or more, the price of options depending on the prevailing price of future silver. The cost of placing a 2-month option to call or put silver used to be about 2 per cent of the market price plus a brokerage of one-eighth of 1 per cent. Latterly the cost has varied. In December, 1931, options to call silver were being offered at a price of 1½d. per ounce for 60 days and 1d. per ounce for 30 days. During that month the average price of spot silver in London was a little over 20d.

When the price of silver is determined, shortly after 1.45 p. m., it is immediately published. Not only is the information circulated in London, but cables sent by the brokers, the banks, and the press spread the news to all important financial centers of the world. The London price is under normal conditions regarded as the basic price, even in the United States. The fact that the price is fixed at 1.45

p. m. does not mean that business is not done in London at other times during the day; for example, London may try to do business in New York later in the day at better than the London market price. That such business is possible is due to the 5-hour difference in time remarked upon elsewhere in this bulletin. Moreover, business in London goes on during the afternoon after the price fixing, mostly by telephone, but the price does not as a rule vary much from the one determined by the brokers at their meeting.

THE NEW YORK SILVER MARKET

The principal features of the New York silver market are (1) spot silver, the informal telephone market made up of banks, bullion brokers, bullion dealers, smelting and refining companies, and the like, (2) the official price, and, since June 15, 1931, (3) futures, the recently inaugurated trading in silver futures on the National Metal Exchange of New York.

SPOT SILVER

According to long-standing practice, business in silver has for many years been done over the telephone, either by direct negotiation between seller and buyer or through the intervention of a broker. In New York the principal buyers of silver are banks with branches or correspondents in the Far East or in London. These banks represent the Chinese and Indian demand. The principal sellers are the large smelting and refining companies, which either mine silver themselves or buy it, in the form of ore and unrefined bullion, from mining companies. Sometimes they do both. The large metal companies do not sell silver in lots of less than 50,000 fine ounces (0.999 fine, or better).¹⁰ As there are few manufacturing companies requiring silver in such large quantities, purchases by the trade are usually made from bullion dealers, of whom there are two in or near New York. By the trade is meant the American and Canadian manufactures of sterling and plated silverware, principally, and the industrial (chemical) demand. The photographic industry is a large consumer, and the largest manufacturers of film and photographic paper are in a position to buy directly from the leading metal companies.

The brokers have always done their principal business with the banks and have direct telephone connections with their principal local clients. Since June 15, 1931, they have had access also to the facilities of the National Metal Exchange, where futures trading in New York is centered, and generally have one or two floor members at the exchange throughout trading hours.

Since the New York market in spot silver is carried on very informally, there is naturally no record of the total business done, nor the prices obtained by traders during any given period. Hence, an informal method of recording the trend of the market came to be evolved—the “official” price of silver.

To explain, the smelting and refining companies which buy silver from mining companies do not pay for the metal until an assay is made. This may be within a few days, or as much as a week. (Assay facilities are generally limited, and each assay must take its turn.)¹¹

¹⁰ In the open market in New York lots of 50,000 ounces are the rule. U. S. Mint purchases, however, are made upon tender of specified quantities, in sealed bids; the lowest bid is accepted.

¹¹ Assays are made from specimens divided into three parts. Parts 1 and 2 are assayed by seller and buyer. If their assays are too far apart for agreement, an umpire is called upon to make an assay. If his assay is between the other two assays or agrees with one of them, his is taken as final. If below or above the range of the other two, the three may be averaged.

When the assay is completed, payment for the silver content is made on the basis of the official price in New York. Payment is subject however, to the particular agreement between seller and buyer. A common specification is that payment be on the basis of the average official price during the week preceding the day of delivery, the official price data as published in the *Engineering and Mining Journal* to be the data used.

The official price is published in the daily newspapers in New York and the leading metal-market dailies and magazines. The margin by which the official price is usually lower than the prevailing market price represents the carrying and marketing charges.

The following description and history of the official price of silver in New York was prepared in 1932 by Handy and Harman:

The New York official price is determined and issued daily, usually in the late forenoon, by Handy and Harman, and is based upon the market prices for near-by delivery in New York prevailing that day up to the time of such determination. This official price is quoted in cents and one-eighth cent fractions, and is usually about one-fourth cent below the "market" for near-by deliveries, although this spread may be widened or narrowed later during the day, according to the trend of the New York market after the "official" has been established.¹² The "official" is used as the settlement basis for the silver content of ores purchased by the smelting companies from producing companies, after allowance for carrying and marketing charges.

In the sixties and seventies the supply of silver was relatively small, but as mining increased and smelting and refining companies were organized, bullion in quantity came upon the New York market and it became necessary to have a basis for the local buying and selling. At that time London was the only market for silver with which New York came in contact, and since Handy and Harman was in close touch with the London bullion brokers and recognized as an authority in the local market, Handy and Harman's buying price for silver, which "was based upon a conversion to cents of the London pence quotations less shipping expenses and commission," came to be accepted by the producing companies as the basis for silver purchases and sales in New York. The quoting of an "official" price by Handy and Harman developed as a natural sequence, and this practice has been in effect for a matter of forty years. Originally Handy and Harman's "official" was a reflection of the London price only, but since New York has come in direct contact with other markets and has broadened its own facilities for trading, the "official" is now based upon market prices for near-by delivery in New York, irrespective of the source from which these prices arise.

Further light on the official price may be had from the following comment from H. K. Hochschild, of the American Metal Co.:

For many years prior to the inauguration of silver trading on the National Metal Exchange future silver was generally at a discount in the New York market. The refiners purchasing silver on the Handy and Harman price are generally in a position where they can hedge themselves only by selling future silver, as they usually buy the silver while it is still in the form of ore or bullion and it takes anywhere from 30 to 90 days until the silver is ready for sale in refined form. This condition, as I understand it, led Handy and Harman to the practice of fixing their price below the actual New York market price, at what they consider an average between spot and futures.

The official price since the beginning of 1913 is shown in a table of monthly averages in Appendix 3.

FUTURES TRADING IN NEW YORK

Mining companies deliver simply crude ore or bullion, which contains a percentage of silver. Most likely the ore will be predominantly lead, copper, or zinc. If the quantity delivered is not large, it may be set aside at the smelter until a quantity has accumulated,

¹² The spread has on certain occasions been as much as 6 cents.

large enough to warrant treatment. Thus, it may be weeks, or even months, before the silver content of such ore becomes available for delivery by the smelter. The smelters and refiners prefer not to "take a position" in silver; therefore they hedge on all silver purchased in the form of ore or crude bullion. Because of the delay that frequently occurs in the reduction of the latter, the existence of a futures market is of considerable importance to the metal companies.

Prior to June, 1931, it was possible to make future contracts for delivery of silver in New York by utilizing the foreign-exchange market. By means of such contracts, hedging on exchange contracts involving silver currencies could be arranged on approximately a 90-day basis. Such arrangements were made directly, or with a broker's intervention. But there were no published quotations or other data on the volume of business done.

Commencing June 15, 1931, the National Metal Exchange (Inc.), of New York, has maintained facilities for trading in silver for future delivery, contracts being made for delivery during the current month or any of the 11 subsequent months, in unit lots of 25,000 fine ounces—2 per cent, more or less—0.999 fine. The number of lots sold each day (total for all deliveries) is announced at the close of the day's trading, as also the prices (high, low, and closing) for each delivery traded in. This information may be found in the leading newspapers of New York City.

As a result of the initiation of trading in silver futures, it became possible to hedge on transactions in New York involving silver or silver currencies up to one year in advance, instead of three months. This has proved to be a useful facility. The daily publication of details of business done attracted some speculation. The latter feature of the use to which the public has put the new trading facilities has been criticized as disturbing to the market, as it no doubt was during the first third of November, 1931, when speculation drove the price of silver up by 20 per cent, and then caused it to drop. However, it may be pointed out that speculation in the Far East will in any case continue to affect silver and Chinese exchange, and that oriental speculators can be keen-witted opponents.

Speculators in silver futures may trade simply as bulls or bears, adhering to a single delivery; or, they may start out by buying or selling for one delivery and subsequently switch (by what is known as a swap) to another delivery.¹³ This sort of business is very similar to the "budlee" operations of the British Indian bullion markets.¹⁴

In connection with speculation in silver futures the following letter, sent out by a New York bullion broker in 1931, is of interest:

About 5½ per cent per annum on dollar balances may be obtained at the present time by purchasing spot New York silver for cash, storing it in the vaults of the ----- Safe Deposit Co. against their negotiable receipts (which negotiable receipts may be used as collateral for loans to be obtained in New York or elsewhere), and selling simultaneously New York silver for future delivery—March, May, or any other negotiable later delivery.

The cost of storage will not exceed 2½ per cent and the total premium obtained at the present time in the market amounts to about 8 per cent; so that the operation leaves a net interest return of 5½ per cent per annum at the present time.

If interested at any time to invest in excess of \$30,000, we shall be glad to have your inquiry.

¹³ On Jan. 22, 1932, for example, the turnover of 1,725,000 ounces on the National Metal Exchange was largely due to the substitution of "October" for "May" deliveries.

¹⁴ For a description of budlee operations, see Trade Information Bulletin No. 457, The Bombay Bullion Market, for sale at 10 cents per copy at the Superintendent of Documents, Government Printing Office, Washington, D. C.

The more important rules of the National Metal Exchange as they affect silver trading will be found in Appendix 4, on pages 72 to 76.

SILVER IN MEXICO AND THE UNITED STATES

In certain important respects the function of silver in the economic life of various nations is quite different in the Occident and the Orient. In the latter it is primarily a store of wealth, and in some places a standard of value as well. In the former it is primarily a commodity, produced by miners for what it will bring in the market. Its use as subsidiary currency is just a matter of convenience and habit in the West, only remotely connected with the bullion value of the coin.

RELATIVE PRODUCTION

Mexico is the leading producer of silver, and the metal takes an important place in that country's list of exports. Since the decline in price, however, and the consequent decline in mine production, the importance of silver to Mexico has diminished. In 1929 silver formed 15.9 per cent of the value of Mexico's commodity exports; in 1930, 12 per cent. Although Mexico is sometimes spoken of as a silver-standard country, it is not on the silver standard, despite the demonezation of gold in 1931. The quotations of Mexican currency show no relationship with the price of silver, the peso being worth considerably more than its silver content and being kept above the value thereof by limitation of the circulating media.

As a producer of silver, the United States takes second place. American mining capital, moreover, is invested in silver-producing mines in various foreign countries, notably Mexico, and to a minor degree in Peru, Canada, Honduras, and Chile. In Mexico, American-owned mines yielded over 54 per cent of the 1927 production, according to the American commercial attaché in Mexico City.

Notwithstanding these facts, silver is of minor importance in the economy of the United States. From the standpoint of production the value of the silver output of this country is smaller than that of lime, grass seed, gold, flaxseed, peanuts, or salmon. In his testimony before the House of Representatives Committee on Coinage, Weights, and Measures on March 25, 1932 (Hearings, p. 274), Prof. E. W. Kemmerer compared the 1929 value of our silver production (\$32,700,000) with the values of the following American products.

Millions of dollars		Millions of dollars	
Copper.....	352	Salmon.....	56
Ferro-alloys.....	75	Corn.....	2, 038
Gold.....	46	Cotton and cottonseed.....	1, 432
Pig iron.....	732	Flaxseed.....	48
Lead.....	85	Grass seed.....	38
Cement.....	255	Hay.....	1, 258
Bituminous coal.....	953	Oats.....	597
Anthracite coal.....	386	Potatoes.....	568
Coke.....	279	Wheat.....	855
Lime.....	33	Peanuts.....	52
Petroleum.....	1, 280		

Compared with our output of other minerals, silver plays a relatively unimpressive rôle, while as a part of our export trade, silver, including reexports, was equivalent to but 1.1 per cent of our commodity exports in 1931; the figures were silver, \$26,500,000; com-

modities, \$2,424,000,000. The value of mineral products of the United States in 1928 and 1929 (Mineral Resources of the United States, preliminary summary) was as follows:

VALUE OF UNITED STATES SILVER PRODUCTION IN 1928 AND 1929 AS COMPARED WITH OTHER MINERAL PRODUCTION

Item	1928		1929	
	Value in millions of dollars	Per cent of total	Value in millions of dollars	Per cent of total
Silver.....	34	0.6	33	0.6
Other metals.....	1,250	23.2	1,443	24.8
Nonmetallic minerals ¹	4,100	76.2	4,354	74.6
Total.....	5,384	100.0	5,830	100.0

¹ Includes mineral fuels and "unspecified products."

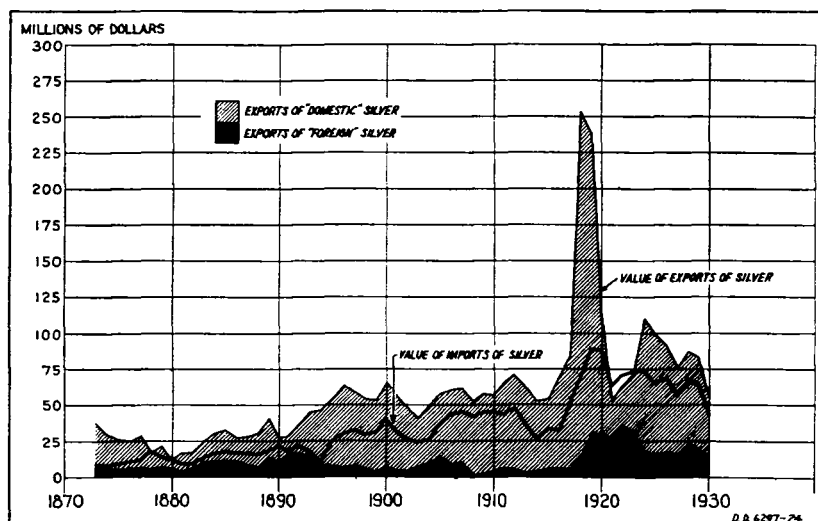


Figure 5.—United States imports and exports of silver, 1873-1930

UNITED STATES FOREIGN TRADE IN SILVER

Figure 5 shows United States imports of silver and exports of domestic and foreign silver since 1873, according to value. The peak in 1918 and 1919 represents Pittman-Act silver obtained by the melting of silver dollars stored in the United States Treasury, for sale to the British Government and exportation to India. Not all the silver reported as domestic is mined in the United States. Our exports, indeed, usually exceed our domestic production, as explained elsewhere in this bulletin. (See p. 37.) Because imported silver, once refined or recast, loses its identity as such, the curve on the chart indicates the value of imports of silver regularly higher than the exports of foreign silver, shown in solid black. In using this chart and the supporting figures in Appendix 5, it should be remembered that the value figures of silver imports and exports include a small and varying proportion of silver coin, which is taken simply at face

value. In times past, it is said, base bullion imported has sometimes been declared as fine silver, through indifference of the shippers; since silver pays no import duty here, this condition may have existed.

In Appendix 5, on pages 76 and 77, are given in tabular form the value of the United States foreign trade in silver from 1873 to date, and exports to the United Kingdom and to Asia from 1900 to date. That appendix also contains a table showing the United States trade in silver in 1930, by leading countries and customs districts. (Cf. the flow map facing p. 35.)

PLACE OF SILVER IN UNITED STATES CURRENCY SYSTEM

Discussion of silver in the United States to-day would be incomplete without reference to the part played by the metal in our currency system. From 1793 to 1931, inclusive, the face value of silver money coined in the United States was approximately one-third of that of United States gold coin minted. Of the amount estimated to be in circulation and in the Treasury on June 30, 1932, the face value of the silver was nearly one-half that of the gold coins, as the following table based upon Bureau of the Mint figures shows.

UNITED STATES COINAGE

Kind	Domestic coin made, 1793 to 1931, inclusive	Estimated in United States at end of June, 1932
Gold.....	\$4, 447, 518, 477	\$1, 793, 828, 454
Silver dollars:		
Standard.....	848, 586, 596	540, 007, 911
Trade.....	35, 965, 924	
Subsidiary silver.....	540, 965, 231	304, 882, 996
Minor coins.....	141, 037, 058	126, 493, 326
Total.....	6, 013, 973, 286	2, 765, 212, 687

It should be noted that most of our monetary stock of gold consists not of coin, but of bullion; hence the part played by gold in our currency system is greater than would appear from the table. Since by the act of 1900 the Government is obliged to maintain all forms of American money at parity with gold, silver certificates (which represent standard silver dollars on deposit with the Treasury) are freely accepted by the public at face value, regardless of the fluctuating bullion value of the standard silver dollars they represent. In demanding silver certificates rather than standard silver dollars, the public displays a decided preference for the more convenient paper money. Of the 380,000,000 standard silver dollars in circulation at the end of August, 1932, 350,000,000 were represented by silver certificates.¹⁵

The following figures, taken from the Federal Reserve Bulletin, show, by kinds, the money in the United States other than that held by the Treasury or Federal reserve banks and agents. The figures thus represent money in circulation, including that held by banks other than the Federal reserve banks.¹⁶

¹⁵ The figure does not include currency held by Federal reserve banks or agents nor, of course, by the Treasury; but it does include currency held by national, State, and savings banks. The 380,000,000 silver dollars are part of the 540,007,911 mentioned in the table above.

¹⁶ The location, ownership, and per capita circulation of United States money is published each year, with comparative totals for earlier years, in the annual report of the Director of the Mint.

MONEY IN CIRCULATION IN THE UNITED STATES

Kind of money	Amount in millions of dollars			
	June 30, 1931	Mar. 31, 1932	June 30, 1932	Aug. 31, 1932 (pre- liminary)
Gold coin.....	363	404	453	449
Gold certificates.....	997	779	716	669
Federal reserve notes.....	1,708	2,546	2,780	2,793
Treasury currency:¹				
Standard silver dollars.....	34	31	30	30
Silver certificates.....	377	355	353	350
Treasury notes of 1890.....	1	1	1	1
Subsidiary silver.....	273	259	256	255
Minor coin.....	117	114	114	113
United States notes.....	299	274	289	285
Federal reserve bank notes.....	3	3	3	3
National bank notes.....	648	693	701	744
Total Treasury currency.....	² 1,754	1,730	1,747	1,781
Total money in circulation.....	4,822	5,459	5,695	5,692

¹ Measures net contribution of the Treasury to the currency. Federal reserve bank notes became Treasury obligations in 1922. See Federal Reserve Bulletin, July, 1923, p. 432.

² The discrepancy in the summation is due to the abbreviation of the items.

It may be noted that, compared with all money in circulation (e. g., in March), silver certificates and coin (totaling \$645,000,000 face value) comprised about 12 per cent. Standard silver dollars and silver certificates in circulation formed about 7 per cent of the total. Standard silver-dollar coins were less than six-tenths of 1 per cent of the total.¹⁷

The standard silver dollars in the United States are held chiefly in Government vaults. Of the approximate 540,007,911 listed in the table showing United States coinage (p. 24) 501,022,733 of the coins (over 92 per cent) were held in the Treasury. Counting 0.7734 fine ounce per standard silver dollar, this amounted to over 385,500,000 fine ounces. Were this silver made available for manufacture into subsidiary coinage at the rate of 10,000,000 ounces annually, it would last for 38 years.

CHANGES IN THE PRICE OF SILVER

The severe decline in the price of silver from an average of 58.5 cents per fine ounce in 1928 to 28.7 cents in 1931 was accompanied by a like decrease in the exchange value of Chinese currency. It has been argued that the world depression, occasioning a lessened demand for the metals of which silver is in large degree a by-product, has been responsible for silver's decline, and that Chinese exchange followed silver downward. Others argue that the decline in silver in recent years has been caused by a decline in Chinese exchange, and that the latter event may be attributed in part to the world business depression (because the latter affected China's receipts from exports) and also in important degree to disturbed conditions arising out of warfare and flood within China. Here we shall consider changes in the price of silver, the commodity, and changes in the commodity-purchasing power of the white metal.

¹⁷ These percentages represent money in the hands of the public and in banks. Using 1928 figures, Mr. Y. S. Leong estimates that 33.4 per cent of the silver certificates and 43.7 per cent of the silver dollars outside the Treasury were in the hands of banks.

Although it has depreciated severely, silver is not the only commodity in that position. In the Guaranty Survey of February 29, 1932, appeared the following list showing, in the case of 15 important commodities, price declines in the United States greater than in the case of silver, between October, 1929, and February, 1932. Many of these commodities, it will be noted, declined over 50 per cent further than did silver.

	Per cent
Rubber, plantation, ribbed smoked sheets, New York.....	80
Hides:	
Green salted packers, No. 1, Chicago.....	65
Calfskins, No. 1, Chicago.....	70
Rosin, H grade, Savannah.....	67
Copper, electrolytic, early delivery, New York.....	66
Cotton, middling, spot, New Orleans.....	63
Corn, No. 2 mixed, Chicago.....	61
Silk, white, 13-15d, Japan, crack XX, New York.....	61
Hogs, good merchantable, pigs and rough stock excluded, Chicago.....	60
Zinc, prime western, early delivery, St. Louis.....	58
Wheat:	
No. 1 northern spring, Minneapolis.....	45
No. 2 hard winter, Kansas City.....	57
No. 2 red winter, Chicago.....	56
Cattle, fair to choice native steers, Chicago.....	54
Wool, clean basis (Boston):	
Ohio, fine delaine.....	63
Ohio, one-fourth blood.....	51
Petroleum, crude, at well, Oklahoma-Kansas.....	47
Tin, Straits, New York.....	47
Lead, pig, early delivery, New York.....	46
Silver.....	40

RELATIVE POSITION OF SILVER AMONG COMMODITIES

Mention has already been made (p. 22) of the relatively minor position of silver among the products of the United States. A similar observation may be made concerning silver's position among commodities in the world as a whole. The relative value of silver and other commodities, based on 1929 world production and April, 1931, prices, was as follows¹⁸:

	Index number		Index number
Wheat.....	100. 00	Rubber.....	12. 50
Cotton.....	53. 60	Silk.....	11. 25
Sugar.....	31. 90	Coffee.....	6. 80
Copper.....	14. 80	Silver.....	2. 93

EFFECT OF DECLINE IN PRICE OF SILVER

The price decline in silver, severe as it has been and important as it is to producers of silver, has not greatly affected the general public either actually or (as the figures just cited show) relatively. On the part of silver producers, it has been pointed out with justice that, although silver is preponderantly a by-product of the production of other metals, that by-product in certain cases provides an important part of the profits of mine operation; and that the serious decline in the price of silver¹⁹ has put marginal producers out of business.

The degree to which owners of silver-producing mines have been affected by the decline in the price of silver may be gauged by means

¹⁸ See Unimportance of Silver, by Joseph Stagg Lawrence, in *World's Work*, August, 1931.

¹⁹ Coupled with simultaneous declines in the price of the other metals which silver accompanies in nature, illustrated in Guaranty Survey's list of prices just quoted.

of the following figures covering silver and the three common metals with which it is principally found—lead, copper, and zinc.

SILVER'S CONTRIBUTION TO INCOME OF SILVER PRODUCERS AS A GROUP

Metal	1929			1931		
	World production ¹	Average price ²	Value of world production (millions of dollars)	World production ¹	Average price ²	Value of world production (millions of dollars)
Lead.....	1,932,000	\$ 6.8	262.8	1,544,000	\$ 4.2	129.7
Copper.....	2,128,000	\$ 18.1	770.3	1,501,000	\$ 8.1	243.2
Zinc.....	1,621,000	\$ 6.5	210.7	1,116,000	\$ 3.6	80.4
Silver.....	262,000,000	\$ 53.0	138.9	196,000,000	\$ 23.7	56.3
Total.....			1,382.7			509.6
Silver as per cent of total.....			10			11

¹ In short tons for lead, copper, and zinc, and ounces for silver.

² In cents per pound avoirdupois for lead, copper, and zinc, and per ounce troy for silver.

³ New York.

⁴ St. Louis.

Source: Year Book of the American Bureau of Metal Statistics.

As a group, the producers of these metals obtained 10 per cent of their gross receipts from silver in 1929 and 11 per cent in 1931, a showing slightly favorable to silver during this period of severe price decline.

An additional consideration sometimes mentioned in connection with changes in the price of silver is the effect on the purchasing power of Asia. Since this question is treated at some length beginning on page 55, discussion at this point is limited to the effect of a decline in silver on the value of Asia's hoards. The large accumulations of silver held in the Orient may be theoretically valued at the current market price of the metal. In so far as such hoarded silver was acquired at a price higher than the present price of silver, it has undergone depreciation, just as a security purchased on the New York Stock Exchange in 1929 may to-day show a large paper loss. Although Indian and Chinese hoards have been set aside as a reserve to be used in time of need, only a small part of them is ever disposed of outside India or China. On the remainder the loss is never realized. And, as to the portion which occasionally finds its way out of the Orient, it is certain to be replaced at the earliest opportunity. The chances are that silver so repurchased by hoarders can be obtained at as low a price as when sold, considering that there is no long-trend tendency of silver to appreciate in market price. Even if the entire oriental hoards of silver be considered to have depreciated in proportion with the market price of silver, the importance thereof may be exaggerated. In a recent article ²⁰ J. Lisman stated:

the value of the silver hoards of Asia during the past two years is the 2-year shrinkage in the market value of American Telephone & Telegraph stock; very little more than that of United States Steel or the Standard Oil group or the copper group of stocks, and much less than that of the American railway stocks. It is a trifle compared to the money lost by

the revaluation of the franc in Belgium and France; the wiping out of the mark of Germany, the florin of the Austrian Empire, or the confiscation of private property and repudiation of the entire debt of Russia. The destruction of property in China by nearly two decades of war is probably also more important. A reduction of 25 per cent in the value of the pound sterling would also dwarf this loss on silver.

Very important in any study of the effects of changes in the price of silver is the matter of what can be purchased with the proceeds of a given quantity of silver at one time and at another; that is, the purchasing power of silver. This matter is examined in the following pages.

THE COMMODITY VALUE OF SILVER, 1833 TO 1932

Examination of the price of silver over the past hundred years in the light of changes in the purchasing power of gold presents some interesting facts. The price of silver in cents per fine ounce and the price adjusted to reflect changes in the wholesale prices of com-

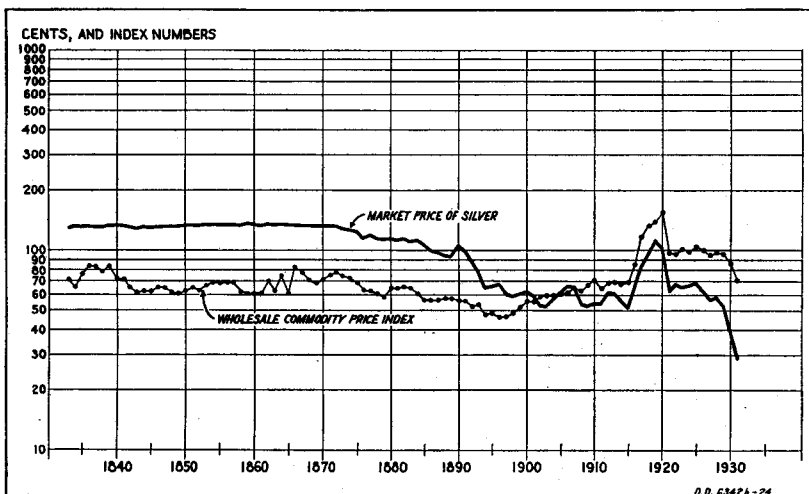


Figure 6.—Silver and wholesale commodity prices

modities are plotted in Figures 6 to 8.²¹ Depicted there are the upward and downward market-price fluctuations which have been the cause of so much comment since 1873, the gradual decline after 1872, the rapid decline in the early nineties, the irregular movements during the two following decades, the rise and fall which marked the World War and postwar periods, and the collapse of the price after 1928. (See fig. 6.)

Upon close study, the movements just described reveal some interesting facts. The silver producer who sells his metal for money is willing to accept the latter because of what it will buy, and his real income varies with the purchasing power of money. The purchasing power of money for goods and services varies inversely, and the variations may be approximately gauged by means of the index number of wholesale commodity prices in the United States. After making allowance for changes in the purchasing power of money, these changes in the price of silver adjusted to show what price

²¹ For data see Appendix 6.

would buy are depicted in Figure 7, and by means of Figure 8 it is possible to compare the two curves, year by year.

The first thing to be noted is that a change in the gold price of silver does not imply a change in silver's purchasing power over com-

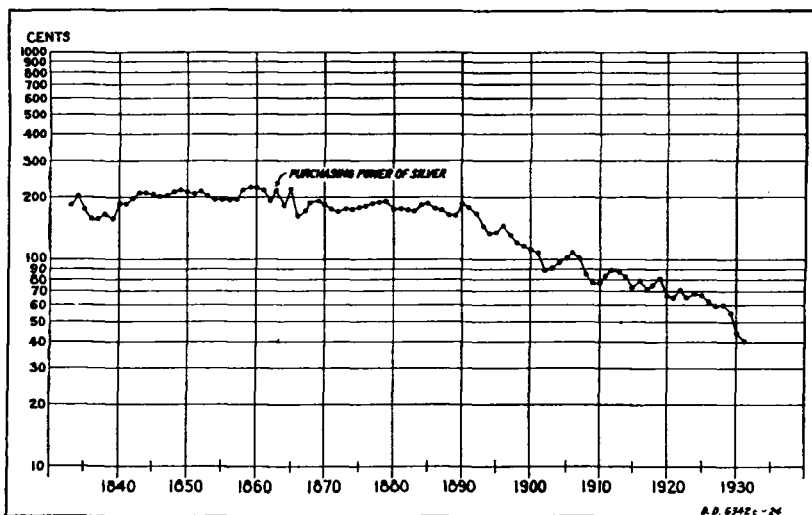


Figure 7.—Commodity purchasing power of 1 ounce of silver

modities. Thus, the decline in the price of the white metal from 1873 to 1879 did not really cause producers a prorata loss, for the

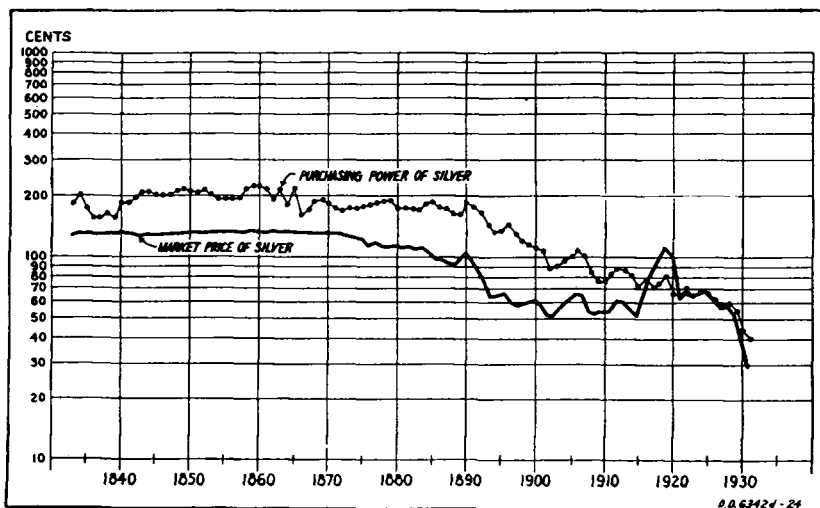


Figure 8.—Market price of 1 ounce of silver compared with its commodity purchasing power

money received from the sale of silver during that period actually increased in purchasing power from year to year. (The trend of wholesale commodity prices in the United States was downward from 1866 to 1896.) From 1914 to 1919 silver soared in market price; the 1919 annual average in New York had not been witnessed

since 1882. Yet the producer of silver in 1919 could with the proceeds of the silver he sold that year actually purchase no more than in 1914. Indeed, the downward trend in the purchasing power of silver, so marked and continuous from 1890 to 1932 viewed as a whole, was scarcely even temporarily checked during the World War.

From 1921 to 1928 the percentage changes in the price of silver and in its purchasing power were almost identical. During that period the value of silver in terms of commodities hardly altered. Since 1928 the price of silver has declined more severely than it did from 1919 to 1921. Yet it should be kept in mind that practically all commodities have declined heavily in price since 1928; therefore, the decline in purchasing power of silver over other commodities, as Figure 8 shows, has been less severe than that in the gold price of silver.

From 1833, where the charts begin, to 1872, there was no variation in the market price of silver worth noting here. During that period changes in the purchasing power of silver were simply reflections in the value of gold and gold-convertible money. (In preparing the data for the charts, the wholesale commodity price level in the United States during the paper-money period from 1862 to 1878 was converted to a gold basis.) The stability in the market price of silver to 1873 was accounted for by the existence of bimetallism in France and other countries. France was its chief stronghold, and by offering a constant market for gold or silver, that country was able to hold the world market price of silver steady.

LEGISLATION AFFECTING SILVER

The year 1873 marks the beginning of a series of important legislative events in the monetary history of silver, all tending toward a lowering of the price of the white metal.

MONETARY UNIONS

In 1873 Germany, having adopted the gold standard in 1871, proceeded to demonetize silver. France, Belgium, and Holland limited the coinage of silver, the three Scandinavian countries abandoned the silver standard to form the Scandinavian Monetary Union on a gold basis,²² and the United States, reforming its monetary laws, took cognizance of the fact that the legal ratio had long since driven from circulation the silver dollar, and dropped that coin from the United States coinage system. The remaining United States silver coins were, by an act of 1874, the only ones given legal-tender property. Thus, by omitting to mention it, the 1874 law deprived the silver dollar of its legal-tender property, and hence demonetized it.

In 1874 the Latin Monetary Union, which had been formed in 1865 by Belgium, France, Switzerland, and Italy, decided to adopt the policy, already initiated by Belgium and France, of limiting the coining of 5-franc pieces. In 1875 Holland and Italy similarly restricted the coining of silver. In 1877 the Latin union entirely suspended the minting of silver 5-franc pieces.

BLAND-ALLISON ACT

The next important event affecting silver was the passage of the Bland-Allison Act by the United States Congress in 1878. The act called for the monthly purchase of \$2,000,000 to \$4,000,000 worth of

²² Norway did not ratify until 1875.

silver for coining into standard silver dollars. Although the Treasury purchased, as a rule, only the minimum amount specified in the law, the purchases for a time served to support the market price of silver, which remained very steady until 1884. Thereafter a steady increase occurred in the mine production of silver and continued uninterrupted until 1894.

SHERMAN ACT

In 1890 the Bland-Allison Act was terminated by the passage of the Sherman Act, which provided for even larger purchases of silver—4,500,000 fine ounces a month. But these purchases did not suffice to maintain the price in the face of increasing mine production. In 1892 Austria-Hungary went on the gold standard, in 1893 India suspended free coinage of silver and the United States Congress repealed the Sherman Act.

OTHER EVENTS AFFECTING PRICE OF SILVER

Despite these unfavorable events, however, the price of silver did not continue to decline in the two years immediately following, there being for the next 13 years no appreciable change in mine production. Possibly the Sino-Japanese War and the coinage of silver by Russia in 1896 had something to do with this. The next year both Russia and Japan adopted the gold standard, and the price of silver went lower.

India went on the gold-exchange standard in 1899. But this step was soon followed by heavy coinage of rupees, and the price of silver did not suffer then. In 1900 the United States formally went on the single gold standard. That year the Boxer Rebellion took place and the resultant indemnity payments no doubt had a depressing effect on Chinese exchange and on silver in the years following. In 1901 the Dominican Republic adopted the gold standard; in 1902, Siam; in 1903, Colombia and the Philippine Islands; in 1904, Panama; and in 1905, Mexico. In 1904-05 occurred the Russo-Japanese War, fought principally in Manchuria. This conflict created a demand for silver for us at the front. In 1906 the Straits Settlements adopted the gold-exchange standard.

After 1906 there was a large increase in the production of silver, lasting until 1914. The movement of the price during this pre-war period was irregular, with a downward tendency.

RECENT PRICE FLUCTUATIONS

During the war the world-wide preference for hard money and the flight of gold were major factors in raising the price of silver. The constantly rising level of commodity prices and the stimulated industrial activity were other strong factors in augmenting the demand for silver money.

During the first seven months of 1914 the silver market had been steady. The swift approach of the crisis arrested demand, and the price sank rapidly after May. Quotations for future delivery became impracticable at the end of July, and, because of the desirability of restricting credit as well as the impossibility of guaranteeing delivery, were discontinued. Some coinage demand arose in neutral countries, but business with Germany ceased in London, Indian demand disappeared for a period of nine weeks, and the demand from industry

was naturally interrupted. Later in the year neutral producers of silver hurried supplies into the market.

In November, 1915, it was learned that silver stocks in London were much smaller than had been thought. This stimulated interest in silver for its speculative possibilities, with the result that the price mounted.

The embargo on gold and silver exports from European countries forced India, then enjoying a prosperous trade, to meet the domestic demand for rupee coins and bar silver from the currency reserves kept in India. These progressive additions to the country's metallic currency increased the world demand for silver and raised its price, as did also war risks in the Mediterranean, which made it harder to get silver to India. The demand for rupees was greatly augmented because of the large military expenditures in India, Mesopotamia, Egypt, and East Africa, all of which then used Indian currency.²³ By August, 1917, the silver value of the rupee exceeded its exchange value.

The United States Government having, by the Pittman Act of 1918, undertaken to purchase, at not less than \$1 per fine ounce, sufficient American silver to replace the silver sold to Great Britain under the terms of the act, the market price of American silver did not, during the life of the act, fall below \$1. Non-American silver in New York sold at a different price, varying with market conditions; but American silver, as defined in the Pittman Act, was stabilized in price. The official price in New York, being always slightly below the actual market price (as explained elsewhere in this bulletin) was until August 19, 1918, slightly less than \$1 per ounce.²⁴ On May 5, 1919, the United States Government announced the removal of the war-time official maximum price and the restriction on silver exports.²⁵ On May 9, similar action was taken by the British Government,²⁶ trading in future silver was resumed, and, with a strong demand from China, the price moved up.

The 1920 collapse in the price of silver, while occurring just prior to a general collapse of commodity prices the world over, was precipitated by several events. In 1919 the monsoon in India was unsatisfactory and India's balance of trade was unfavorable. The Indian Government ceased buying silver. Paper rupees began to replace silver. In November the United States Government decided to sell silver dollars for gold, exporting the silver in the form of bars. China, also, which for two or three years had been replenishing its silver stocks, ceased buying. A famine in China early in 1920

²³ During the war England spent in India something like £240,000,000 on war supplies. The demand from outside India, according to White (*Silver, Its History and Romance*, p. 301), often called for 30,000,000 rupees (about 10,000,000 ounces) a month.

²⁴ The official price was as follows: Apr. 22 and 23, 1918, \$0.99%; Apr. 24 and 25, 1918, \$0.99%; Apr. 26 to May 1, 1918, \$0.99%; May 2 to June 30, 1918, \$0.99%; July 1 to Aug. 18, 1918, \$0.99%; Aug. 19, 1918, to May 7, 1919, \$1.01%; May 8, 1919, \$1.03. Thereafter the market price remained above \$1 an ounce until early in June, 1920.

²⁵ United States governmental control of silver during the war and postwar years took its authority from the espionage act of June 15, 1917. On Sept. 7, 1917, the exportation of coin, bullion, and currency was placed under the control of the Federal Reserve Board. Restrictions on the industrial use of gold and silver were discontinued in March, 1919. Licenses for the exportation of silver were freely granted after May 6, 1919; and of gold, after June 8, 1919. (See Annual Report of the Director of the Mint, 1919, p. 69.)

²⁶ In England, trading in silver was restricted in 1918 by two decrees. That of May 18, 1918, prohibited trading in current silver coin and purchase or sale thereof at a premium. A decree of Aug. 2, 1918, fixed the maximum price of silver bullion (subsequently changed from time to time) and prohibited purchase or sale of it, except under written license from the Treasury. The maximum price in England was based on the American price plus shipping charges. Restriction on the maximum price of silver bullion was revoked by Treasury order of May 8, 1919. On Dec. 23, 1920, the United Kingdom passed the gold and silver (export control) act, prohibiting the exportation of gold and silver coin and bullion. (See Annual Report of the Director of the [U. S.] Mint, 1919, p. 151; 1920, p. 213; 1921, p. 189 and 193. Also see *The Mineral Industry during 1918*, p. 259-268, and *The Mineral Industry during 1919*, p. 241.)

aggravated the situation; China's exports were dull. Silver having reached the highest price on record in London, 89½d., on February 11, the United Kingdom, to prevent the illegal melting of its silver coins, whose intrinsic value then exceeded their face value by over 33 per cent, on March 31, 1920, passed a law reducing the silver content of the subsidiary coins from 0.925 to 0.500 (effective the following December).

On June 1, 1920, the United States began to purchase silver under the Pittman Act, and silver recovered slightly until August.²⁷ The continued sale of European silver coins, however, remained a depressing factor. The adverse conditions continued until the spring of 1921 and were reflected not only in the demand from the Orient but also in reduced consumption of silver in the arts and industries of the Occident. Speculation may be credited with the fluctuations during the remainder of 1921, with the cessation of the decline of commodity prices as a bull factor. Another favorable factor in the price of silver during the postwar years was the great currency depreciation on the Continent. This brought into force Gresham's Law, giving silver a scarcity value.

The year 1923 was marked by a peak supply. Production of new silver, which for two years had been rapidly mounting, exceeded the previous (1913) high, while "other supplies" brought the total to about 280,000,000 fine ounces. Demand from India continued strong, however, while favorable exports and disturbances in China continued to bolster the price. A favorable influence in 1924 was the demand in Europe for silver for coinage. It is estimated that 50,000,000 ounces were absorbed in that way in Europe alone during 1924.²⁸ Moreover, "other supplies" were less than in 1923, and the price of silver was accordingly high. India was a large buyer in 1925, owing to a favorable monsoon.

EFFECT OF 1926 LEGISLATION ON PRICE

In 1926 the price of silver suffered a marked decline, due chiefly to unsatisfactory conditions in China and to the publication, in August, of the report of the Royal Commission on Indian Currency and Finance, recommending the sale of most of the Indian Government's stock of silver (see p. 84). In the latter part of the year the French Government sold about 7,000,000 ounces. However, in 1927 and 1928, the price remained fairly steady, with even some slight improvement over the level which prevailed the last quarter of 1926.

The Japanese financial crisis in April, 1927, resulted in tael-yen speculation, temporarily helping silver. At the end of July the Indian Government commenced to sell demonetized silver—approximately 9,200,000 fine ounces—but the demand from China and the Indian bazaars was strong enough to absorb it, as well as the continued heavy mine production. The Near Eastern demand for Maria Theresa dollars (minted in Austria) was strong in 1927, and helped the price that year.

Although mine production increased in 1928 and Indian and Continental sales of demonetized silver were the heaviest they had ever been (60,000,000 ounces), the Chinese and Indian-bazaar demand

²⁷ Pittman purchases were completed in May, 1923; this gave rise to an unwarranted bearish sentiment.

²⁸ The following consumed silver for coinage purposes in 1924: The Free City of Danzig, Germany, Latvia, Lithuania, Poland, and Russia. The United States similarly consumed a total of 4,400,000 ounces.

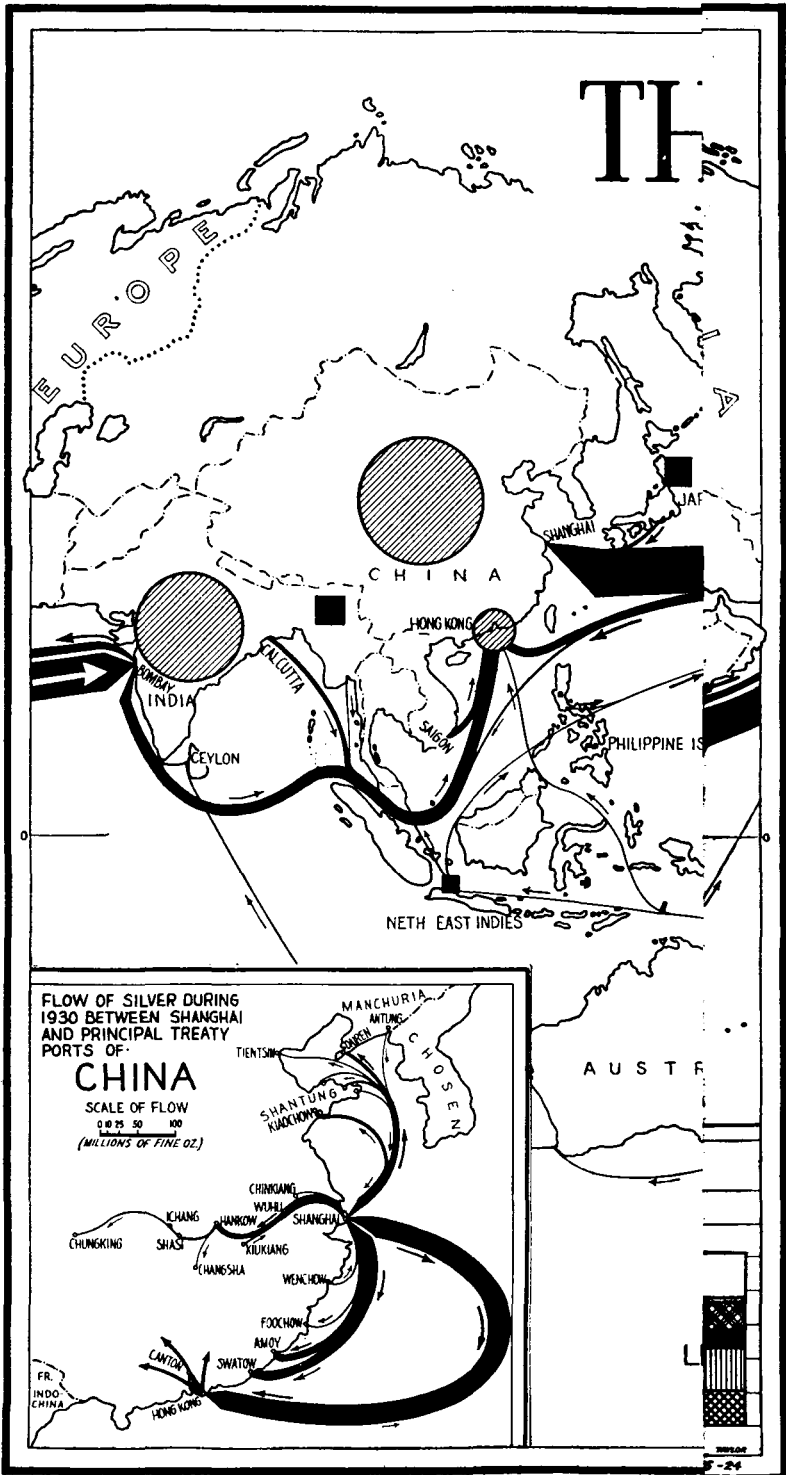
continued strong enough to support the price. The anti-Japanese boycott in China, resulting in withdrawal of Chinese funds from Japan and in large purchases of silver by Japanese note-issuing banks in China, aided the price of the metal during the early months of 1928. Later that year stabilization of the franc brought large quantities of French silver coins to the melting pot. London stocks of the metal increased thereafter, with Indian bazaars the chief support of the market. Poland purchased about 6,000,000 ounces for coinage, but a quantity of the metal purchased earlier for French Indo-China was resold.

From the end of 1928 may be dated the recent heavy decline in the price of silver, a decline which reached its nadir in February, 1931. The 1929 demand from China was maintained at its high level, but that from India declined, reflecting the failure of certain of the winter crops, and the Indian Government's adherence to a policy of demonetization. Trouble between China and the Union of Soviet Socialist Republics in July, 1929, helped to steady the price temporarily. In May the Bombay refinery commenced to deliver refined silver. Mine production continued to increase, reaching 261,000,000 fine ounces for the year. Demonetization sales by India amounted to 35,000,000 fine ounces, while sales by French Indo-China, France, the United Kingdom, and other governments brought the total to about 67,000,000 fine ounces.

There was in 1930 a general decline in all commodity prices, and silver proved no exception. Its price, moreover, fluctuated considerably as a result of speculation. Sales of demonetized silver were at their heaviest in 1930, India, French Indo-China, France, and Belgium participating. At the beginning of 1930 the French Indo-China piaster was stabilized on a franc-exchange basis. Because Saigon dollars were being sent to China in quantity, the Chinese Government prohibited the importation of foreign silver coins. India imposed a duty on silver. Mine production declined only slightly—to 248,000,000 fine ounces.

In 1931 the price of silver reached a new low for all time—25¼ cents per fine ounce on February 16. Despite the decline in general commodity prices throughout the year (as well as in 1932) the price of silver remained relatively steady, with the noteworthy exception of the first 11 days of November, when speculation temporarily drove it up by 20 per cent. Mine production was greatly curtailed, totaling only about 196,000,000 ounces, compared with 248,000,000 in 1930. But the world economic depression reduced the purchasing power of the chief silver-consuming countries and hence hindered their absorption of the white metal. Sales by the Indian Government were about 35,000,000 ounces, those by Siam probably 20,000,000 ounces, and those by Mexico, 4,500,000 ounces. The Indian duty was raised twice during the year, in March and in September.

In June the National Metal Exchange of New York initiated trading in silver for future delivery. The Hoover moratorium on intergovernment debts, temporarily aiding exchange rates, was reflected in the silver market. In September the suspension of gold payments in England caused the London price to improve sharply. Germany consumed during the year about 28,200,000 ounces, chiefly for coinage. Net Indian consumption declined from about 94,500,000 fine ounces in 1930 to 57,000,000 in 1931, and net Chinese consumption from 123,000,000 to 59,000,000 ounces.



THE INTERNATIONAL FLOW OF SILVER

Although it is well known that to-day silver is mined chiefly in North and South America and is consumed principally in the Far East, the routes followed by the metal in the course of its movement from Occident to Orient are not so generally known. Affecting the flow of silver from continent to continent are such facts as the location of an important silver market at London, the existence of important refining facilities in Germany, and sales of demonetized metal by India and other countries in recent years. Such factors sometimes cause flows of silver in directions counter to the prevailing movement.

THE FLOW MAP

Figure 9 shows the flow of silver from the principal supplying to the principal consuming countries of the world. The map depicts the commerce in silver during the calendar year 1930, the latest for which comparable data were available.²⁹ In certain unimportant respects the flow lines are incomplete, as, for example, in the case of some very minor movements; also in the case of overland movements, most of which had to be omitted because of their intricacy.

The chart consists of three parts—the world silver-flow map; the silver-flow map of China; and the bar chart showing total supply and demand in 1930 and in 1931, as estimated by Handy and Harman, New York bullion dealers. In the bar chart are included estimates of demonetized silver sold by the Governments of British India, France, and French Indo-China during 1930, which information is not shown on the large flow map, but may be visualized by the reader.

The solid squares on the large map represent mine production of new silver by leading producing countries as estimated by the Director of the Mint. The square for Canada, for example, represents 26,436,000 fine ounces. The sales of demonetized silver, not shown on the map, may be visualized by comparing with the foregoing figure representing Canada's mine production the following Handy and Harman estimates of demonetized offerings in 1930:

	Fine ounces
British India.....	29,500,000
France.....	22,000,000
French Indo-China.....	20,000,000

The shaded circles in the map represent the estimated net consumption of silver by leading countries. The large circle in North America represents consumption by the arts and industries in both the United States and Canada (29,500,000 fine ounces), plus purchases by the United States Mint (6,100,000 fine ounces). Mexico's consumption in the arts and industries during 1930 we have estimated at 1,000,000 fine ounces. The circle for the United Kingdom represents consumption in the arts and industries only (6,000,000 fine ounces) and that of Germany, consumption for all purposes (8,000,000 fine ounces).

The chief purpose of the map is to show the major international flows of silver. We believe that for this purpose 1930 was a year typical of recent years. Of international movements of silver over-

²⁹ The map was first published in Commerce Reports, April 11, 1932.

land, the chief ones are those originating in the largest producing country, Mexico, and moving into the second largest producing country, the United States. The latter country is, incidentally, the world's chief maritime exporter of newly produced silver. The arrows in the flow lines indicate the direction of each flow. The precise course followed by ocean vessels has not been observed. The approximate volume of the larger flows may be gauged by reference to the scales drawn in the legends, although it is not possible to measure the smaller flows on these scales.

The largest single annual movement of silver is across the Pacific, from Occident to Orient; this flow combines that leaving San Francisco with that coming from New York via Panama Canal, as well as other small flows. The part of this flow contributed by New York exceeds that from San Francisco. The second largest international flow, also from Occident to Orient, originates in North America in two major streams (from New York and Vera Cruz), moves to Europe, and thence, by way of the Suez Canal, to India. Part of this stream carries on to Hong Kong, the southern gateway to China. The United Kingdom's position as an exporter arises solely from the importance of its entrepôt trade; British mine production of silver totaled only 41,000 ounces in 1930.

MEXICO'S SILVER EXPORTS

Practically all the production of Mexico, largest mine producer of silver to-day, is exported. Silver formed 12 per cent of the value of the total commodity exports of that country in 1930. Of the Mexican silver exports, which may be placed at 104,200,000 ounces in 1930, the larger part left the country by water. We estimate shipments that year from Vera Cruz to the United Kingdom at around 57,000,000 fine ounces and shipments from Vera Cruz to New York at around 12,000,000 fine ounces, a total by water through the Gulf of Mexico amounting to a little over 69,000,000 fine ounces. Only small shipments went by water from Mexican Pacific coast ports to the west coast of the United States; San Francisco's imports from Mexico in 1930 totaled 1,431,000 ounces. Important shipments of silver cross the southern border of the United States. Our silver imports through San Antonio in 1930 were 27,254,000 ounces; those through the Arizona customs district, 4,505,000 ounces; and through El Paso, 2,615,000 ounces. Very small exports of Mexican silver go directly to countries not already mentioned. In 1930 Germany imported directly from Mexico 757,000 pesos of refined silver, and British India 650,000 pesos.

SILVER TRADE OF NEW YORK, SAN ANTONIO, AND SAN FRANCISCO

In order to prepare the flow lines for the United States it was necessary to compile figures for our leading silver ports—New York, San Francisco, and San Antonio—by countries of origin and destination. These figures were prepared from the original reports of the collectors of customs. In using the figures in the tables, one observation is necessary: A small proportion of our trade is in the form of coin, which usually is recorded either at face value (in the case of United States coin, always at face value) or according to the exchange value of the currency unit involved. Such trade is not recorded in terms

of fine ounces of silver. No attempt is made to estimate the number of fine ounces so involved. The item is not very important, as will be seen from the table by comparing the value of silver imported in the form of coin or bullion with the total recorded value of silver imported, and by doing the same with our exports of silver.

The importance of New York, San Antonio, and San Francisco is seen by the fact that of our total imports of silver in 1930—valued at \$42,761,000—these ports accounted for \$27,234,000, or about two-thirds. (Unfortunately, the flow map could not show the volume of our overland imports from Canada.) Of our total exports of silver—\$54,157,000 in 1930—New York and San Francisco together accounted for \$50,950,000, or about 95 per cent of the total.

The ore and bullion imports through New York came chiefly from Peru, Mexico, Chile, and Honduras. The imports from the Belgian Congo are of incidental interest; although small, they were quite regular in 1930, but in 1931 they appeared only in the January import returns. San Antonio's imports were all from Mexico. San Francisco's came from Peru, Mexico, Java, and Chile, in the order named. The movement of silver from Java and Madura and the Philippines to San Francisco, presumably for refining, is one of interest, particularly because it is of regular monthly occurrence.

Taking the United States as a whole, our major imports of silver came from Mexico, Canada, Peru, Chile, Honduras, and the Belgian Congo, in the order mentioned. Of our total silver exports, valued at \$54,157,000 in 1930, China and Hong Kong took \$37,767,000. These two countries and British India, the United Kingdom, and Germany together took 93 per cent of the total.

SUMMARY OF UNITED STATES FOREIGN TRADE IN SILVER

Generally persons interested in the silver business are interested in the quantity of silver movements, rather than their value. For some purposes, however (as, for example, when one wishes to compare the trade in silver with that in other commodities), value figures are of importance. The following summary of the value of our 1930 and 1931 international trade in silver gives the breakdown, showing silver in ore and refined bullion separately, and United States and foreign silver coin separately. Details of United States foreign trade in silver are shown in Appendix 5.

The United States exports more silver than it produces, despite a large consumption. This is due to our heavy imports of the metal. Our exports of silver are classified as "domestic" and "foreign." Foreign silver is silver exported in the form imported, usually bars. When foreign silver, prior to reexportation from this country, is refined or otherwise treated in the United States, the resultant product bears the stamp of an American smelter, refiner, or mint, and is classified as a domestic export. In the United States as a whole exports of foreign silver constituted only about 14 per cent of the volume of total noncoin silver exports and about 20 per cent of the value of coin and noncoin silver exports. As the value of our total foreign silver imports was \$42,761,000 and that of our total foreign silver exports only \$10,607,000, about three-fourths of our imports may be said to undergo refining or other treatment after importation.

SUMMARY OF UNITED STATES FOREIGN TRADE IN SILVER, 1930 AND 1931

Description	1930			
	Exports			Imports
	Domestic	Foreign	Total	
In ore and base bullion	\$3,023		\$3,023	\$21,275,154
Refined bullion	43,501,487	\$7,392,959	50,894,446	17,902,213
Coin:				
United States	45,076		45,076	1,810,222
Foreign		3,214,039	3,214,039	1,773,252
Grand total	43,549,586	10,606,998	54,156,584	42,760,841

Description	1931			
	Exports			Imports
	Domestic	Foreign	Total	
In ore and base bullion	\$3,380		\$3,380	\$11,734,914
Refined bullion	21,664,216	\$2,092,870	23,757,086	11,531,127
Coin:				
United States	51,629		51,629	3,496,197
Foreign		2,673,158	2,673,158	1,901,901
Grand total	21,719,225	4,766,028	26,485,253	28,664,139

Sources: Foreign Commerce and Navigation of the United States, calendar year, 1930, and calendar year, 1931.

From the standpoint of recorded value, about one-sixth of our export to China and Hong Kong was foreign silver; to British India, about one-eleventh; and to the United Kingdom, about one-seventh. No foreign silver was exported to Germany in 1930.

MOVEMENT OF SILVER IN CHINA

The chief Chinese movements of silver by water are shown in some detail in the insert in the lower left-hand corner of Figure 9. (The data for this insert appear in Appendix 8.) These movements are entirely apart from the international movements depicted on the large map. In the insert Hong Kong is regarded as part of China, which it is, geographically. Overland movements in China and unimportant water-borne movements of silver in 1930 are not indicated on the insert, which shows only Shanghai's trade with other treaty ports and Hong Kong. The flow of silver between other ports, Hankow and Ichang, for example, could not be shown. The China insert is on a scale approximately one-fifth larger than that of the world map, which also shows China.

The chief point of interest as revealed by the insert map of China is the movement of silver between Shanghai and Hong Kong. The net silver movement on this route was in 1930 almost entirely southward, as proved to be the case also with the trade between Shanghai and Swatow, Amoy, and Foochow. An exception was the net movement between Wenchow and Shanghai, which was toward Shanghai. Similar net movements toward Shanghai occurred from Kiukiang and Antung.

The net westward and northward movement of silver from Shanghai (according to the 1930 figures) proves surprisingly small, con-

sidering the population of the central and northern part of the country. It should be remembered, however, that, under the Chinese Republic, conditions have been such that the offtake of silver from Shanghai is subject to the irregular influences of civil disturbances, floods, drought, and the like. These circumstances, by interfering with the production of goods for exportation, or by interfering with the movement of export goods to seaports, reduce China's purchasing power abroad and hence reduce that country's ability to buy silver. Such events may not be—indeed, are not—nation-wide at any one time, but are localized within certain large areas. In times of disturbance, flood, or drought not only is the ability of certain areas in China to absorb silver limited, but a movement of silver from them to Shanghai and other treaty ports may set in, because of the necessity of paying for much-needed supplies or the desire to put in a safe place the highly concentrated savings of past labor which are represented by hoarded silver. In general, those 1930 movements of silver shown on the insert were away from Shanghai.

SILVER MOVEMENTS OF THE UNITED KINGDOM IN 1930 AND 1931

The following figures for the United Kingdom's imports and exports of silver during 1930 and 1931 are of interest in connection with the flow map, because the latter could not show these details.

The succeeding table shows that British imports were about one-sixth unrefined in 1930 and about one-fourth in 1931. In each year the unrefined silver came principally from British India. The bulk of the unrefined silver reexported goes to Germany. The heavy importation of refined silver from France in 1930 was due to sales of demonetized metal by that country. These sales had practically ended by 1931. It is pointed out that in 1931 Mexico sent to Germany certain quantities of refined silver "which otherwise would have found their way" to London.

The data for the bar diagram in the lower right-hand corner of the large chart appear in the table facing page 35. For the sake of uniformity the table and diagram were based entirely on Handy and Harman's estimates for 1930 and 1931, as published in their Review of the Silver Market for 1931, with one exception: We have included an estimate of 1,000,000 ounces for industrial consumption by Mexico during 1930. The Bureau of the Mint's estimates of mine production, although differing very slightly from the private estimates referred to, were used in calculating the squares shown on the large map, despite the fact that they were not uniform with the latter, for the reason that those estimates do not cover more than three countries individually, while the Mint estimates cover most countries individually. The data for the table are self-explanatory. For the reader's added information percentage figures have been included for all the items. Note the decline in volume of actual silver sold on the market in 1931, compared with 1930. Owing to world economic conditions as reflected in the prices (and, hence, production) of silver, lead, copper, and zinc, mine production of silver recorded a decline. The volume of offerings of demonetized silver was not significantly less in 1931 than in 1930, but Indian and Chinese absorption was decidedly lower.

UNITED KINGDOM'S TRADE IN SILVER, 1930 AND 1931

[In millions of standard ounces, 0.925 fine]

Country	1930					
	Imports			Exports		
	Unrefined	Refined	Total	Unrefined	Refined	Total
British India.....	12.4		12.4		64.3	64.3
Mexico.....		32.9	32.9			
United States.....		16.8	16.8			
France.....	.1	11.0	11.1		3.0	3.0
Canada.....		6.8	6.8			
Germany.....		2.5	2.5	11.5	1.8	12.3
China and Hong Kong.....					7.5	7.5
Netherlands.....	.4		.4		2.6	2.6
Union of Soviet Socialist Republics.....					1.0	1.0
Egypt.....					1.0	1.0
Belgium.....	.8	.1	.9			
Straits Settlements.....						
Other countries.....	.4	1.3	1.7	(?)	2.6	2.6
Total.....	14.1	71.4	85.5	1.5	82.9	84.4

Country	1931					
	Imports			Exports		
	Unrefined	Refined	Total	Unrefined	Refined	Total
British India.....	26.8	0.8	27.6		48.9	48.9
Mexico.....		33.2	33.2			
United States.....		34.3	34.3		3.2	3.2
France.....		.3	.3		3.2	3.2
Canada.....		4.7	4.7			
Germany.....		1.1	1.1	10.4	7.6	18.0
China and Hong Kong.....					13.0	13.0
Netherlands.....				.4	.5	.9
Union of Soviet Socialist Republics.....						
Egypt.....					.4	.4
Belgium.....	.7	.9	1.6		2.2	2.2
Straits Settlements.....					1.0	1.0
Other countries.....	.8	1.7	2.5		5.0	5.0
Total.....	28.3	77.1	105.4	10.8	85.0	95.8

¹ Exports to Germany in 1930 are shown in the source as here given, but were reported by Sharps & Wilkins (London brokers) as about 7,900,000 ounces, made up of unrefined silver (7,100,000 ounces) and refined silver (800,000 ounces). The total as shown by Samuel Montagu & Co. (London brokers) is 2,300,000 ounces.

² 6,750 ounces.

Source: Accounts Relating to Trade and Navigation of the United Kingdom, December, 1931 (pp. 184-187). As the items are abbreviated not all the summations agree with the totals given.

Among the movements of silver as shown on the map and not yet mentioned, the largest is that from British India to the United Kingdom. This flow is made up of silver obtained from the Indian Government's treasury stock of rupees, of which 1930 sales have been estimated at 29,500,000 fine ounces. Of this amount, 4,500,000 ounces are believed to have been sold in India. About 11,500,000 fine ounces were exported from India to the United Kingdom. Indian exports of silver went additionally to Hong Kong and China (about 16,222,000 fine ounces), and to several other countries. The fact that India itself mined about 7,000,000 ounces, mostly in Burma, during 1930, should not be overlooked. The flow lines leading from India

to the Far East include silver exported from India and also silver exports to the Far East from Europe.

The South American exports, especially the Peruvian, go in part to New York and in part to San Francisco, as the flow lines indicate. In these lines it was impracticable to differentiate between refined and unrefined silver; it is known that a large part of the South American silver export consists of the refined metal. The smallness of the flow directly from Canada to the United Kingdom is to be remarked; likewise, Canada's small direct shipments to the Far East, shown on the map by a thin line which includes also shipments from the State of Washington.

The flow of silver (chiefly demonetized metal) from France to the Far East is simply indicated on the map, not measured; likewise the small but interesting flow of Maria Theresa dollars from Austria to Arabia and Ethiopia.

It was not possible to obtain data on the movement of silver from New York directly to India because silver is shipped "on order" and may be switched from one destination to another while en route. That a certain amount of silver does reach India on vessels sailing from New York is well known. Such silver is usually consigned "Bombay, option London" or "London, option Bombay." The destination may be changed from Bombay to London, or vice versa, without extra cost.³⁰

INDIA AND SILVER

The principal points to be noted regarding India's present relation to the silver market are that (1) India, for years the leading consumer of silver, is still the second largest net taker of the metal;³¹ (2) the gross takings of silver by India are reduced, during recent years, by important sales of demonetized metal, India leading all countries in the amount of such sales; (3) India consumes gold as well as silver, at intervals disgoring one or the other metal, and consideration of India's relation to silver involves consideration of its relation to gold;³² and (4) large hoards of silver and gold are held in the country. The simultaneous large-scale purchase and sale of silver by India may be explained by the fact that the purchases are in response to demand from the Indian people (that is, the bazaar demand), while the sales are made chiefly by the Treasury³³.

INDIA'S FOREIGN TRADE IN SILVER

Indian consumption of the precious metals depends on the state of the balance of payments of the country. India's purchasing power abroad, and hence its ability to buy silver from other countries, varies with its exports, visible and invisible. Of the latter two groups, the visible trade—that is, the trade in commodities—is by far the more important. How India's imports of gold and silver vary with the export balance (the latter reflecting crop conditions and domestic prosperity) may be seen from Figure 10 and the supporting figures in the table showing India's foreign trade in merchandise and precious metals, in Appendix 7.

³⁰ Silver shipped directly to London from New York pays three-fourths of 1 per cent, whereas the rate "New York (via London) to Bombay" is only one-half of 1 per cent.

³¹ China is the largest. See table on page 8.

³² See Appendix 7.

³³ For a description of the bullion-bazaar trade, see *The Bombay Bullion Market*, Trade Information Bulletin No. 457, by Don C. Bliss, Jr. This publication may be purchased at 10 cents a copy from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Since India is the second most important consumer of silver, statistics of its imports are of interest. Appendix 7 contains a compilation of India's imports of silver and gold, both gross and net, on private and Government account, during each month since the beginning of 1929.

SEASONAL INDEXES OF SILVER IMPORTS

As India's imports of silver react to crop conditions, export prosperity, the Hindu marriage season, and the like, the table (p. 43) of seasonal indexes of private imports of silver, compiled by Y. S. Leong, is of interest. Naturally there is now no occasion for Government imports of silver into India, and the calculation of indexes for such imports in the past would be without value.

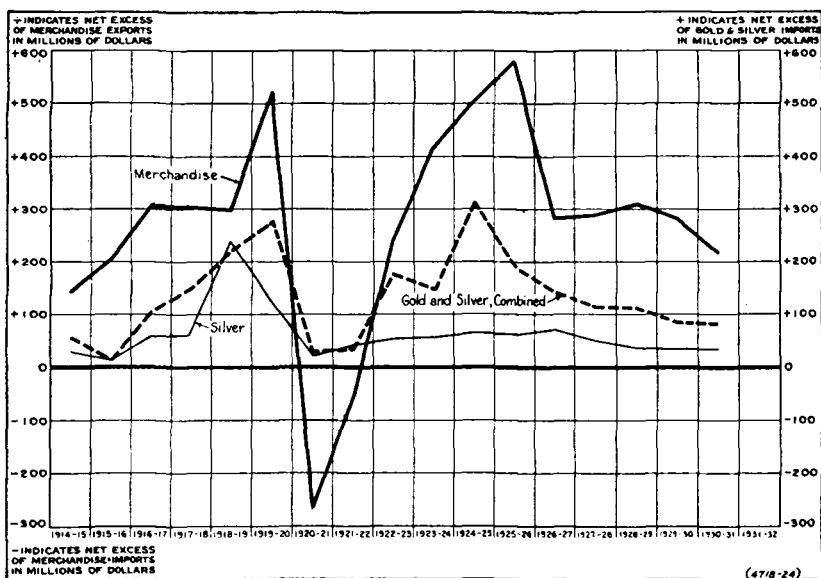


Figure 10.—India's foreign trade in merchandise and precious metals, 1914-1930

The indexes cover two periods—1903 to 1915 and 1921 to 1930. The prewar indexes show that the heaviest monthly importations occurred in May, June, February, and August. The postwar indexes show the chief importations to have occurred in February, April, January, and May.

In 1931 net silver imports showed a greater range of fluctuation than in the preceding years. True to form, the seasonal high occurred in February. The next largest importation took place in January, followed by May and April. In large part the high in February, 1930, was due to heavy imports in anticipation of the imposition of an import and excise duty on silver, while that of February, 1931, was similarly swelled by the increased duties. The highs in May are connected with the Hindu marriage season and consequent general festivity. The gold movement turned outward in June, 1931. July and August showed net exports of silver as well as gold.

SEASONAL INDEXES OF PRIVATE IMPORTATION OF SILVER INTO BRITISH INDIA

Month	1903-1915	1921-1930	Month	1903-1915	1921-1930
January.....	87.9	121.7	July.....	96.0	91.2
February.....	111.2	153.6	August.....	109.4	80.5
March.....	106.0	85.1	September.....	83.8	69.6
April.....	98.0	124.1	October.....	82.1	98.9
May.....	122.1	107.2	November.....	105.6	90.8
June.....	116.1	102.4	December.....	81.9	74.9

NOTE.—In compiling the above indexes, the imports of the Indian Government were disregarded. The import figures covering each of the 2 periods were averaged by a moving average of a 12-month period centered on the seventh month. The imports for any given month were expressed as a relative of the moving average for that particular month. Then the figures for each month were handled as follows, the month of January being taken as an example: All the January relatives were aligned according to size; the 4 median figures then were segregated and their arithmetic average calculated. This arithmetic average represents the unadjusted index for January.

When similar unadjusted indexes for each of the 12 months of the year had been calculated in this manner, an arithmetic average of the 12 unadjusted indexes was taken. Then, the index for each of the 12 months was compared with the arithmetic average of the indexes of all of the 12 months, and expressed as a relative thereof—the result, the adjusted indexes as shown in the two columns of the table.

It will be noted that the silver importations into India were treated in 2 separate groups: The prewar period from 1903 to 1915; and the postwar, 1921 to 1930.

The crops which are most significant in their bearing on India's prosperity and ability to import silver were tabulated by Premchand, Roychand & Sons in 1925 as follows:

INDIA'S CROP CALENDAR

Crop	When sown	Harvest season	Export commences
RABI CROP			
Cotton (part) ¹	October.....	April-May.....	April-May. Do. May. Late March. May. Do. Do. Do.
Tilseed (part) ¹	do.....	March.....	
Rapeseed.....	August-October.....	February-March.....	
Mustard seed.....	do.....	do.....	
Gram.....	September-October.....	do.....	
Lentils.....	October.....	do.....	
Peas and beans.....	do.....	March.....	
Linseed.....	do.....	March-April.....	
Barley.....	October-November.....	April.....	
Wheat.....	do.....	do.....	
KHARIF CROP			
Rice.....	May-June.....	November-December.....	January.
Jute.....	do.....	September-October.....	November.
Cotton (part) ¹	do.....	October-November.....	Do.
Cottonseed ¹	do.....	do.....	December.
Maize.....	July.....	do.....	Do.
Tilseed (part) ¹	do.....	November.....	Do.
Groundnuts.....	August.....	December.....	January.

¹ Cotton and tilseed are both kharif and rabi crops, but mostly kharif.

IMPORT DUTY ON SILVER

An import duty on silver was first levied in India in 1894, at the rate of 5 per cent ad valorem. This was increased in 1910 to 4 annas per fine ounce, and in 1920 was abolished entirely.³⁴

In February, 1930, the Indian Government announced the restoration of an import duty on silver, amounting to 4 annas (then about 9 cents) per ounce troy, without allowance for alloy or impurity. Exported silver was made subject to a drawback of the full duty. The new measure took effect March 1, 1930. The chief object of the

³⁴ Montagu's Annual Bullion Letter, 1930, p. 15.

duty was to raise revenue. At the same time it gave a certain advantage to the Indian Government in the sale in India of silver taken from the currency reserve. On March 17 a bill was introduced, levying on newly mined Indian silver an excise duty equivalent to the import duty. The bill subsequently was passed, and made retroactive as from March 17.

The continued need for additional revenues resulted in an increase in the duty on silver from 4 annas to 6 annas per ounce, effective March 2, 1931. On September 29, 1931, according to reports received by the Foreign Tariffs Division of the Department of Commerce, there was presented to the Indian legislative assembly a bill providing a surcharge of 25 per cent on existing duties, which raised the duty on silver, both the import and excise, from 6 annas to 7½ annas per ounce. The measure became effective provisionally on September 30, pending passage by the assembly and approval by the Governor General. On November 28, 1931, the measure was passed by the assembly and received the approval of the Governor General. It is expected to remain in force until March 31, 1933.

EXPORTS

In connection with the export figures it should be noted that all Indian Government sales of silver are not recorded in the export statistics as shipments by the Government. Some silver is sold within India by the Government and may subsequently be exported privately. As to exports on Government account, there is naturally the month-to-month lag to be considered. A sale of such silver may take place in one month and be recorded as an export in the following month. As the footnote to the table (Appendix 7-B) indicates, the figures as published monthly are subject to revision one year later.

Further light on these statistics, particularly those for 1931 and 1932, may be shed by the following comment which appeared in the *Weekly Market Review* of Premchand, Roychand & Sons (Bombay) under date of March 18, 1932:

The total amount of silver imported into British India from September, 1931, to February, 1932, amounted to only 11,453,000 standard ounces, a part of which has already been reexported, owing to the fact that prices in the local market have persistently remained under import parity. It does seem curious that stocks of Indian-mint silver keep on mounting, particularly in face of the fact that gold exceeding 500,000,000 rupees in value has been exported, which must have relieved at least partly the distress existing among agriculturists. Furthermore, there has been a definite movement upcountry of rupee coins from the treasury, which itself is a sufficient proof that the large quantity of Indian-mint silver accumulated in Bombay is not distress silver. It is obvious from the above that smuggling of silver on an enormous scale continues undetected into British India from various land frontiers, and unless strict vigilance is exercised by the authorities to stop this, the revenue budgeted from this source (about 16,000,000 rupees for 1932-33) will only partly materialize. It is also quite clear that although the upcountry offtake of silver from the local market is very small, the demand is being met from this source.

Sales of silver by the Indian Government are dependent upon the amount of the metal it holds in its treasury. Such silver—in the form of rupee and half-rupee coins, and to a very small extent bullion—has in recent years varied in amount, but so far has never approached the minimum of 250,000,000 rupees³⁵ recommended by the Royal Commission on Indian Currency and Finance in 1926.

³⁵ Rupee figures can be approximately converted into fine ounces by dividing by 3; one rupee contains 0.34375 fine ounce of silver.

In a large country like India the variation in the volume of currency required by the public is considerable and, because paper money is not widely used, it is necessary to hold a fairly large amount of rupee coins in the reserve. But the currency commission found the amount of rupees then in the reserve to be unnecessarily large and recommended its reduction from about 850,000,000 rupees (equivalent to 292,187,500 fine ounces), the amount held on April 30, 1926, to 250,000,000 rupees (equivalent to 85,937,500 fine ounces) through the melting and sale of coin over a 10-year period. This recommendation was adopted as a policy of the Government. But the 22d of September, 1931, just after Great Britain's suspension of the gold standard, found the Indian Treasury with a stock of rupees not only not reduced in accordance with the 10-year plan (although over 100,000,000 fine ounces had been sold), but actually increased from 850,000,000 rupees to over 1,325,400,000 rupees, or by 455,606,000 ounces. Only six months later, however, the figure had declined to 1,106,100,000 rupees.

CHANGES IN GOVERNMENT STOCK OF SILVER

The changes which have been occurring in the Indian Government's stock of silver are of much interest to the silver market because of that country's importance as a seller in recent years.³⁶ These changes may be followed in the next table, which is based on reports of the Indian Controller of the Currency. It illustrates the expansion and contraction of rupees and notes since 1909.

EXPANSION AND CONTRACTION OF CURRENCY IN INDIA, 1909-10 TO 1931-32
[In millions of rupees]

Period	Rupees and half rupees (coins)	Notes	Total	Period	Rupees and half rupees (coins)	Notes	Total
Average for five years, 1909-10 to 1913-14.....	87.7	30.1	117.8	1923-24.....	76.2	79.6	155.8
1914-15.....	¹ -67.0	-60.1	-127.1	1924-25.....	36.5	-25.1	11.4
1915-16.....	104.0	92.3	196.3	1925-26.....	-81.7	11.6	-70.1
1916-17.....	338.1	138.9	477.0	1926-27.....	-197.6	-34.0	-231.6
1917-18.....	278.6	172.2	450.8	1927-28.....	-37.5	102.2	64.7
1918-19.....	450.2	492.9	943.1	1928-29.....	-30.3	35.7	5.4
Average, 1914-15 to 1918-19.....	220.8	167.2	388.0	1929-30.....	-217.1	-188.0	-405.1
1919-20.....	200.9	202.0	402.9	1930-31.....	-215.6	-113.7	-329.5
1920-21.....	-256.8	-59.0	-315.8	1931-32.....	39.4	174.5	213.9
1921-22.....	-104.6	93.5	-11.1	Total 1919-20 to 1931-32.....	-884.0	318.0	-566.0
1922-23.....	-95.6	38.7	-56.9	Average, 1919-20 to 1931-32.....	-68.0	24.5	-43.5

¹ The minus sign in this table indicates a return from circulation.

Source: Report of the Controller of the Currency.

FACTORS CAUSING CHANGE IN VOLUME OF CURRENCY

The factors which make for changes in the volume of Indian currency are not dissimilar from those operating in other countries. Some circumstances are more important and others less important in India than in western countries. For example, India's money market is not well developed except in the larger cities; whereas the demand for credit in western countries is reflected in changes in bank

³⁶ From the commencement of sales in 1927 to the end of March, 1932, inclusive, the Indian Government sales totaled 127,581,564 fine ounces.

credit outstanding, in India expansion or contraction of business is reflected in the currency statistics.

The volume of business, in turn, and the general prosperity of the country are closely identified with crop conditions. India is essentially an agricultural land. A failure of the monsoon means poor crops and poverty. Agricultural conditions on the other side of the world have their repercussions in India as well, and a poor export season in India, whatever the cause, means lower purchasing power, less demand for money, a return of rupees from circulation, a disgorging of hoarded silver, possible Government sales of silver, and like factors adverse to the price of that metal.

Just what will be the chief factors that cause rupees to return from circulation at any time depends upon circumstances. The most recent period of such return was 1929 to 1931, when both notes and silver coins came to the treasury. During that period the following factors operated:

1. General economic distress.
2. Substitution of bullion for rupee coins in hoards.
3. Transfer of capital from India to foreign countries, either to settle the trade balance or for investment.
4. Increased investment of rupees and notes in postal certificates and other forms of saving within India.

No. 1 is self-explanatory, the return of currency from circulation during economic depression being a familiar phenomenon. This has been the most important factor in India. No. 2 may be explained as follows: The price of silver in terms of rupees has been declining for some time, until it reached an all-time low level in the world market. Practically all Indians who have previously hoarded silver rupees (inspired to do so principally by their faith in silver as a precious metal and store of value) must by 1931 have realized that they could appreciably increase the weight of silver in their hoards by buying silver bullion with their hoarded rupees. The holder of a rupee coin, containing 0.34 ounce troy of fine silver, could in 1931 have bought silver in the market at, say, 28.7 cents an ounce, paid in addition the import or excise duty, and still have increased the weight of his hoarded silver 150 per cent.³⁷ Whatever the reasoning, many Indians, including shroffs (native bankers), did substitute silver bullion for rupees in 1931. In the case of certain State treasuries, bullion was similarly substituted for rupees and, in some cases, Government securities for rupees.³⁸

As to No. 3, international trade conditions were adverse to the rupee during the period under consideration. There was thus a heavier demand for foreign exchange than normal and a consequent contraction of currency. In connection with this situation, the transfer of gold from the paper-currency reserve in India to the gold-standard reserve there (as substitute for sterling securities released from the

³⁷ This can be demonstrated by the following calculation: A rupee contains a little over 0.34 fine ounce of silver. During 1931 silver had an average value of 28.7 cents in New York, augmented in India by the amount of the import or excise duty, which on Mar. 2, 1931, was increased to 6 annas per ounce, or about 13½ cents, adding an average of 47 per cent to the cost of silver in India. A rupee thus had a fine silver content worth 9.76 cents (34 per cent of 28.7 cents) plus 47 per cent, or 14.35 cents. Yet it would buy in Bombay 36.5 cents worth of silver.

³⁸ It is true, as has been pointed out by Dr. Frank D. Graham (in *Journal of Political Economy*, August, 1931, p. 430), that there is no apparent object in converting silver rupees into bullion, since each will buy the same amount of commodities. However, such a switch may be inspired by the belief that silver will rise in price; or it may be inspired by nothing more than a traditional regard for bullion. By changing rupees for silver bullion at prevailing low prices, the Indian ryot (peasant) is enabled to acquire a relatively large amount of ornaments for his wife and thereby add to his social prestige among his fellows.

gold-standard fund in London to support the rupee) resulted in contraction of the note issue. Possibly this phenomenon itself, coupled with uncertainty on the part of some individuals as to the financial outlook in India, accounted for some of the flight of capital.

On No. 4 of the factors listed above, Trade Commissioner J. Bartlett Richards wrote from Bombay in December, 1931, that, even during that depression year, investments in postal-savings certificates were on the increase, although the total of such investments equals but a fraction of the estimated hoards of precious metals. Other Indian Government securities appeal only to the wealthier and more enlightened Indians, and have as yet only a limited influence on hoarding of the precious metals there. Investment in securities on the part of State treasuries, however, as in the case of Hyderabad State in 1929-30 and to a smaller degree in Mysore in 1930-31, is also reflected in a return of rupees. However small, the issuance of securities and treasury bills in India has some effect on the volume of currency in circulation.

Referring also to the above-mentioned transfer of gold from the paper-currency reserve to the gold-standard reserve, Trade Commissioner Richards states that this had no connection with the increase in the Government's stock of rupees in 1931. The gold-standard reserve, which is made up of profits on rupee coinage, for several years remained constant at around £40,000,000, generally held in London in the form of British Government securities. In 1931 it had to be used to support the rupee, and, to keep the fund intact, expenditures therefrom in London were counterbalanced by the transfer of gold from the paper-currency reserve in India to the gold-standard reserve in India. In other words, when a buyer of sterling in India bought sterling from the Indian Government with rupee notes, the notes he turned over to the treasury were canceled, and an equal sum in gold released from the paper-currency reserve was transferred to the Indian portion of the gold-standard reserve. Where sterling exchange was purchased from the Government with silver rupees, such a transfer was naturally not possible. The extent of this transfer may be seen from the figures for gold held in the currency reserve. This was on January 7, 1931, approximately 313,616,000 rupees; on September 7, 108,631,000 rupees; and on September 30, 42,083,000 rupees.

An additional factor bearing on the return of rupees is the occasional increase in the demand for bank checks and paper currency. For example, during 1921-22 and the year following, rupees returned from circulation but paper currency in circulation actually increased, although not in sufficient amount to counterbalance the contraction of rupees. In 1924-25 notes contracted slightly and rupees expanded, but in 1925-26, and notably in 1927-28 and 1928-29, the contraction of rupee circulation was accompanied by a considerable expansion in note issue.

There was a small contraction of note issue as well as rupees in 1920-21, a depression year, and in 1926-27, when harvests were poor, but in 1929-30 and 1930-31 this phenomenon was marked, as the figures in the foregoing table reveal.

Taking rupees and notes together, the annual statistics of net contraction and expansion show a definite tendency toward contraction during recent postwar years. As has been pointed out by C. S. Ran-

gaswami in an article in *Indian Finance*, submitted to the Bureau of Foreign and Domestic Commerce by Trade Commissioner George C. Howard, of Calcutta, the returns reveal only the net changes in the currency in circulation. So far as notes are concerned, the quantity in circulation can be fairly closely estimated. But as to rupee coins, no knowledge is available on the amount which the public has melted or lost, while precise information on meltings and sales by the Government is not currently available, and hence the weekly currency returns tell only part of the story.³⁹

PERIODIC CURRENCY STATEMENT

Because the weekly currency statements reveal to some extent changes in the Government's stock of silver and are much consulted in the silver market, examination of one of them should be of interest. The following is a typical weekly statement issued in condensed form by the Currency Department of the Indian Government—in this case on February 7, 1932.

Notes in circulation	Rs. 1, 82, 31, 76, 426
Reserve, coin and bullion:	
In India—	
Silver coin	1, 07, 19, 06, 535
Gold bullion	4, 82, 79, 301
Silver bullion	7, 30, 52, 146
Total coin and bullion	1, 19, 32, 37, 982
Securities (purchase price):	
In India, of the nominal value of Rs. 62, 26, 85, 200	59, 49, 38, 444
Total securities	59, 49, 38, 444
Grand total of reserve	1, 78, 81, 76, 426
Internal bills of exchange held on account of Government under section 20 of the Indian paper currency act, 1923..	3, 50, 00, 000

The items may be briefly identified as follows. The first item represents the total of notes outstanding. As published in India, the figures are shown in crores and lakhs of rupees, the crore equaling 10,000,000 and the lakh 100,000 rupees. The item "1,82,31,76,426 rupees" is thus read as 182 crores and 31.8 lakhs. The figures as we write it in the Occident would appear simply as 1,823,176,426 rupees. While the next three items require no explanation, it is to be noted that sales of silver by the Government, the return of rupees from circulation and their absorption for hand-to-hand use or for hoarding are, all combined, reflected in the item "silver coin." The item "securities" represents what are known in India as "ad hoc" securities. These are all rupee securities of the Indian Government, and in the statement vary in amount according to the demands of trade and the Government's open-market operations. The item of 35,000,000 rupees at the bottom of the statement represents loans to the Imperial Bank of India secured by internal bills of exchange.

As bearing on the changes in currency during 1931 discussed above, the following figures, based on the weekly currency report for the last report date of each month, are of interest.

³⁹ There is a method of estimating the amount of rupees in circulation, as described by G. Findlay Shirras in the *Journal of the Royal Statistical Society*, July, 1920. (See also his book, *Indian Finance and Banking*, p. 462.) Of close to 6,500,000,000 rupees minted from 1835 to 1923, possibly 2,340,000,000 were still in circulation in 1924. C. S. Rangaswami puts the total in August, 1931, at 1,433,100,000 rupees.

SELECTED CONDENSED CURRENCY STATISTICS¹

[In millions of rupees]

End of—	Note issue	Reserve				
		Silver			Gold bullion	Rupee securities
		Coin	Bullion	Total		
1928.....	1,891	963	46	1,009	311	571
1929.....	1,794	1,038	43	1,081	322	391
1930.....	1,613	1,146	54	1,200	317	96
1931:						
January.....	1,582	1,153	58	1,211	262	99
February.....	1,565	1,161	66	1,227	238	101
March.....	1,603	1,179	69	1,248	258	102
April.....	1,601	1,182	72	1,254	275	72
May.....	1,548	1,196	78	1,274	202	71
June.....	1,325	1,224	76	1,300	171	54
July.....	1,556	1,257	69	1,326	166	65
August.....	1,536	1,269	51	1,320	124	92
September.....	1,487	1,268	57	1,325	42	95
October.....	1,598	1,246	69	1,315	43	239
November.....	1,624	1,216	77	1,293	45	285
December.....	1,793	1,150	79	1,229	46	493
1932: ²						
February.....	1,823	1,072	73	1,145	48	595
March.....	1,807	1,029	85	1,114	50	608
July.....	1,717	1,018	109	1,127	108	482

¹ The occasional difference between total note issue and the reserve as herein itemized is made up of internal bills of exchange, against which the Imperial Bank of India has borrowed.

² 1932 figures are for the 7th of the months given, as end-of-month figures are not available.

These figures show that the bulk of the note-issue reserve is made up of silver, a small part of which is in the form of bullion. (Under the latter head comes the "crushed" uncurrent coin which, under section 20 of the Indian paper currency act of 1923 is credited to the paper-currency reserve at 1 rupee per tola of coinage fineness, 0.916%, or at the rate of 165 grains of fine silver per rupee). The outflow of gold in 1931 was compensated for in the reserve by an increase in "ad hoc" securities and, for brief periods, inland bills of exchange. The expansion in the note issue during the last three months of the year was taken care of by expansion in these securities.⁴⁰ During the 3-month period gold in the reserve remained relatively unchanged, rupee coins, however, being absorbed in circulation.

REMARKS ON GOVERNMENT SALES OF SILVER

The following remarks on the Government's sales of silver as they may be followed in official reports are copied from a series of articles written recently by C. S. Rangaswami, managing editor of Indian Finance:

It is next to impossible to unravel the secrets of silver sales from an analysis, however shrewd and penetrating, of the weekly accounts of the currency department. Varied complications are introduced in the currency returns by the inclusion of the results of silver sales in a statement which should only refer to currency transactions. By reference to the annual reports of the Controller of the Currency, the financial and revenue accounts published year by year, and to the "home accounts" of the Government of India published in England, we would be able to make up a more or less complete story about the silver sales; but the story would relate to "ancient" times, as the publications mentioned above appear long after the periods under review come to an end.

⁴⁰ This expansion of notes and rupees in 1931-32 may be accounted for by the outflow of gold and the rise in commodity prices following sterling's departure from the gold standard in September, 1931.

Uncurrent silver coin is usually "crushed" and credited under the head "silver bullion under coinage" in the statement of the paper-currency reserve. Act XXXVI of 1923, amending the paper currency act, provides that silver obtained by such a process could be credited to paper-currency reserve at 1 rupee a standard tola or at the rate of 165 grains of fine silver per rupee. In recent months "Victoria Empress" rupees are being withdrawn in large quantities under executive orders, although these coins have not yet been declared uncurrent. These rupees are perhaps added to the reserve on some occasions; and if and when this is the case, this should account for a part of the increase [shown in the weekly currency statements] under silver coin. When silver is to be withdrawn for sale, these coins might be taken out, crushed, and credited, in the first instance, to silver bullion and subsequently removed from the currency reserve when delivery has to be made against the sales. Any losses during crushing should, of course, be made good from the treasury. When the silver is taken out, "ad hoc" securities should be placed in the reserve for a corresponding amount, which accounts for the increase, under the Indian securities, shown [in recent months] from time to time.

Mr. Rangaswami's remarks on the Government's loss on silver coin melted and sold are of incidental interest:

The Government of India, it would appear, sold about 9,300,000 ounces of fine silver in 1927-28, 26,500,000 ounces in 1928-29, 36,600,000 ounces in 1929-30, and 29,000,000 ounces in 1930-31, making a total of about 101,400,000 ounces. Converted into standard tolas, in which form the accounts are maintained at the mint, the total would thus come to 294,700,000 standard tolas. As the value of the silver in the reserve is on the basis of 1 rupee a standard tola, it follows that the book value of the silver sold since 1927-28 to the end of March 31, 1931, would come to 294,700,000 rupees. We estimate that the silver sold in 1931-32 up to the middle of August would be in the neighborhood of 9,600,000 fine ounces or 28,000,000 standard tolas. Adding this estimate to the previous figure, we arrive at 322,700,000 standard tolas as representing the sales of silver effected by Government since they launched on the disposal of the white metal from the reserve.

The total losses on the sale of silver should now be in the neighborhood of 170,000,000 rupees. The losses as recorded in the finance and revenue accounts for 1927-28, 1928-29, and 1929-30 are 12,400,000 rupees, 34,200,000 rupees, and 61,900,000 rupees, respectively. The losses in 1930-31 would work out to more than 60,000,000 rupees, owing to the catastrophic fall in the price of silver in that year. The "home accounts" of the Government of India published in England shows the realized proceeds of silver sold at £1,078,798, £2,594,227, and £3,905,759 for the three years 1927-28, 1928-29, and 1929-30, respectively; and the estimate for 1930-31 is £2,482,000. The point to be noted here is that while realization from sales of silver since 1927-28 would be about £11,000,000, the loss on account of the difference between the book value of the silver and the realized value would be over 170,000,000 rupees.

INDIA'S SILVER HOARDING AND CONSUMPTION IN ARTS

The silver and gold in India's hoards consists of articles of personal adornment, coin, and bullion. Numerous large hoards belonging to princes, landlords, rich merchant families, and the like have in some cases been kept intact for generations. But hoarded metal is not limited to the holdings of the wealthy. The great masses of India, merchants and agriculturalists, including even the very poor, all hold some silver, and their holdings form the major part of India's hoards. What their total is, no one knows. A few years ago, E. Kann, of Shanghai, estimated India's stock of silver at 4,300,000,000 fine ounces, much of which is undoubtedly lost and will never be seen again.⁴¹

Why do Indians hoard silver and gold? Trade Commissioner Bliss has stated four principal reasons—hereditary custom, social organization, seasonal harvests, and inadequate banking facilities.⁴²

⁴¹ As of 1919, G. Findlay Shirras estimated India's stock of silver at 3,729,000,000 ounces. See Trade Information Bulletin No. 457, p. 44.

⁴² *Ibid.*, p. 41.

The consumption of silver and gold is merely one phase of the hoarding of metal in India. Only about 10 per cent of the hoarded silver is believed to be in the form of bullion (commercial bars and sections of bars) and an unknown, but also small fraction, in the form of coin. The major part of the hoards is in the form of jewelry. Silver and gold are used in the manufacture of wire, thread, and cloth—little, if any, of which is ever recovered—and in the manufacture of necklaces, anklets, bracelets, finger rings, toe rings, earrings, nose rings, bangles, and the like, worn chiefly by the women. Nine-tenths of the bullion importation of India, states Mr. Bliss, eventually becomes jewelry, and in such form is available for the melting pot whenever economic pressure dictates. Melted ornaments cast into bars come on the market as "country" silver. While such silver has been known to form as much as 80 per cent of the market supply in Bombay, it usually (stated Mr. Bliss in 1927) forms only about 25 to 30 per cent of the supply. It is from sources such as these that India obtains most of the gold and silver it from time to time exports to the Occident.

RECENT INDIAN GOLD MOVEMENTS

As in the case of silver, no one knows how much gold there is in India. While estimates range from \$2,500,000,000 to \$3,000,000,000, it is known that between 1873-74 and 1930-31 the net recorded imports were approximately \$2,800,000,000. Whether unrecorded movements of gold add to or detract from the figure can not be stated. Since, unlike silver, gold has been permitted full freedom of movement without the imposition of any duty, it appears unlikely that there were any larger, unrecorded imports or exports of this metal.

During 1931-32 a heavy outflow of gold occurred. This occasioned considerable comment, since it followed the rather widespread suspension of the gold standard in Europe and elsewhere after September 21, 1931. Being on the sterling-exchange standard, India, by England's action of that date, was taken off the gold standard, yet interposed no obstacles to the outflow of the yellow metal.⁴³ The net outward movement of gold from India from June, 1931, through February, 1932, amounted to 6,789,200 fine ounces, or over \$140,000,000.

Since this phenomenon is not an entirely new one, except in degree, and since it has a definite relation to the position of silver in India, certain aspects of it are of interest here. India has been called "the sink of the precious metals" because it has absorbed so heavily both gold and silver. Since the war, it will be noted, India's imports of gold have varied considerably, whereas, in contrast thereto, the dollar value of its imports of silver has relatively been remarkably stable. (See fig. 10.) This stability of silver imports is only relative; a closer examination thereof reveals considerable variation from year to year.

During years of crop failure and economic depression in India the imports of the precious metals are naturally much reduced. It is in such imports that the surplus savings of India are chiefly invested.

⁴³ The Nationalist Party in India has raised objection to the unimpeded outflow of gold, but the Government has held that the outflow has been to India's advantage, has been small compared to India's probable total stock, that the Indian Government could not afford to acquire the gold offered, even if it desired to so speculate. See paragraphs 69-75 of The Speech by the Honorable Finance Member on Introducing the Budget Proposals for 1932-33, The Gazette of India, Extraordinary, Mar. 7, 1932.

Thus, during 1915-16 and 1920-1922, the imports of gold and silver fell away to a very small total. Yet, with all the fluctuation here noted, it will be remarked that the more variable of the two metals in India's trade is gold. Gold is India's greater luxury, and hence is the more sensitive to conditions in that country.

The silver-gold ratio in the open market plays an important part in India's purchases of bullion. The precious metals can be acquired only as a result of the Indian's savings, and he quite naturally tends to put his savings in that precious metal which happens to be the more readily and advantageously obtainable. This is always a relative matter, which is determined by the saver in comparison with conditions in the immediate past. For example, if gold should to-day increase in value in terms of silver, silver has then become cheaper in the eyes of the Indian hoarder, and he will invest any savings that accrue to him in silver rather than in gold. If, however, gold should decline in value as compared with silver, the reverse will tend to occur, and the Indian hoarder will tend to invest more of his savings in gold than in silver. If at any time there appears to be a preference in India for silver rather than gold, it can only be explained in the light of the fact that most British Indians are very poor and their savings are so small that it is not practical to invest them in gold. True, certain kinds of gold leaf are sometimes manufactured to accommodate the small hoarder of gold. But one can not make any display with gold leaf, whereas silver, manufactured into jewelry, serves both to please the women and to provide a readily portable, easily convertible, form of savings; hence, the small hoarders' preference for silver. Yet, as a whole, India does not show a preference for silver. From 1914-15 to 1930-31, inclusive, net imports of silver were valued at \$1,060,000,000 and net imports of gold at \$1,171,000,000.

The primary object of saving is to have something in hand against the proverbial "rainy day," which in India would really be a day of drought, of disappointing monsoon, and of crop failure. In times of depression Indians draw on their hoards to tide themselves over. Precious metals withdrawn from hoarding are sold—perhaps only within India, perhaps eventually abroad. The latter occurs only in extreme cases, or for arbitrage reasons. Usually a severe depression results, not in the shipment of metal abroad, but in the reduction of imports of the precious metals. (See fig. 10.)

The large outflow of gold in 1931 and 1932 was a result largely of distress selling of the metal in certain parts of India. (This selling of gold commenced before England's suspension on September 21.) In other portions of the country it was a result of deliberate and entirely voluntary operations designed to yield a profit because of the high price obtainable for the gold abroad. That the metal actually left the country in large amounts is probably explained in large part by the profit which bullion dealers, banks, and others were enabled to make, and is also connected with the transfer of funds to England.

Private individuals shipping unrefined silver bullion from India to London in 1931, other than in connection with arbitrage transactions, must have lost thereby, because the price of silver in India now includes, in large percentage, the import or excise duty.⁴⁴ The import

⁴⁴ The duty of 7½ annas per ounce, was in October, 1931, with the rupee worth less than 29 cents gold, equivalent to 13½ cents, or about 46 per cent of the New York price of silver in that month.

duty is returnable only in case adequate proof can be shown that the silver being exported is the same as that on which import duty has been paid. Naturally, "country" silver returning to the market by way of the melting pot is not in this class. In the case of gold exports from India, no such loss is incurred, for there is no duty on gold. It follows that anyone possessing gold in India had an advantage over anyone holding silver, for he could send the gold abroad to considerable advantage, purchasing silver with the proceeds or investing the money in Indian or foreign securities.⁴⁵

INDIA AS A SILVER PRODUCER

Although important as a seller of demonetized silver, India is not a large producer of the metal; nevertheless its production should be noted in passing. India's production has in recent years been from 2 to 3 per cent of the world total, amounting to 5,000,000 to 7,000,000 fine ounces annually since 1925. This silver is practically all refined in India. The silver production of India comes chiefly from the Baldwin silver-lead-zinc district of Upper Burma. The mines in that region were worked on a small scale by the Chinese for centuries, but in 1910, after the advent of foreign mining methods, the production increased markedly.

THE BOMBAY MINT'S ELECTROLYTIC REFINERY

India has two mints, both of which are branches of the Royal Mint. One is located at Calcutta and to-day does practically all the coining. The other is at Bombay, and it now concentrates chiefly on the refining of gold and of demonetized silver, as well as such duties as the census of current coin, and examination of uncurrent coin.

The Bombay Mint was sanctioned by the East India Co. in 1824 and was completed in 1829. During the free-coinage period the largest output was 110,000,000 rupees, in 1877-78. During 1918-19 and 1919-20 there was an exceptional demand for coin, and both Indian mints operated under heavy pressure. In the former year Bombay produced of silver coin alone, close to 265,000,000 pieces, and Calcutta over 314,000,000 pieces, said to be a record for any mint of the world.

The refining of gold is done at Bombay by the chlorine process. The electrolytic silver refinery was constructed only in 1928-29, and commenced refining Government silver on April 1, 1929. It produces bars 0.999 fine, or better. In addition to its refining work, the Bombay mint in 1929-30 coined 9,500,000 Hong Kong dollars and 9,500,000 "1-pice" coins.⁴⁶

CHINA AND SILVER

China occupies a key position in the silver market, having displaced India in 1928 as the leading consumer. Of the total supplies of silver sold, China took 38.9 per cent in 1930 and 23.1 per cent in 1931. (See table on page 8.) Although only recently become the chief consumer, China has been of great significance to the silver market for generations, its importance, like that of India, growing with the gradual spread of the gold standard in the Occident since 1871.

⁴⁵ The Mysore Economic Journal of April, 1932, contains five articles on "The Exodus of Gold." See also, the Midland Bank [London] Monthly Review for January-February, 1932.

⁴⁶ The foregoing data are taken from the Times of India of Mar. 17, 1932.

In view of the fact that the Chinese masses are not given to the ostentatious display of silver in the form of jewelry as are the British Indians, it is perhaps somewhat strange that there should come from China so heavy a demand for the metal. Silver in China serves principally as currency and as a store of value. The Chinese have regarded it as wealth since time immemorial. Although prizing gold, as well, the small Chinese saver finds it too concentrated in value; silver suits him better for hoarding⁴⁷. Furthermore, silver by long usage has been China's chief money for wholesale business and fiscal affairs, and, as the population and the economic life of the country have grown, a larger quantity of money has been required. For these reasons, China has been a heavy buyer of silver throughout modern times.

Examination of the tables on China's foreign trade in silver and gold from 1888 to 1930, inclusive (see Appendix 8), reveals net im-

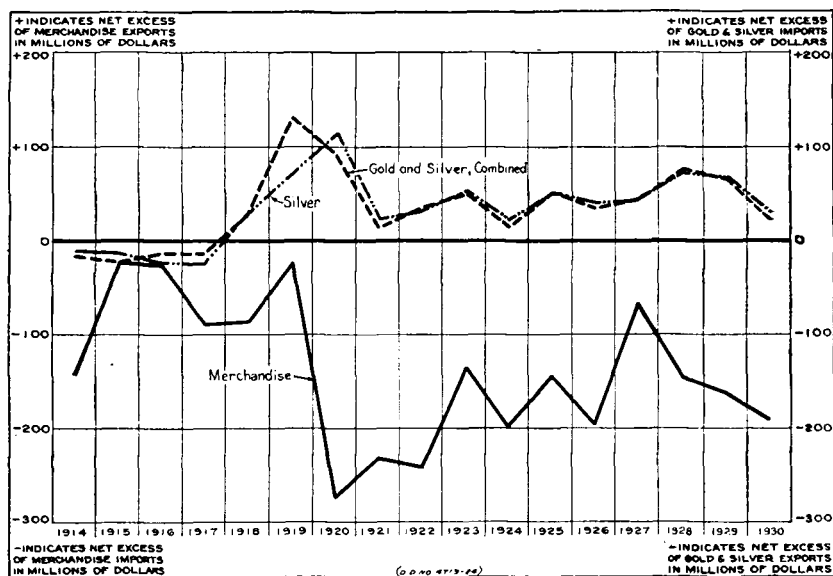


Figure 11.—China's foreign trade in merchandise and precious metals, 1914-1930

ports of silver in 27 years and net exports in 16 years. The net exports were recorded in 1888, 1890-1892, 1901-1908, and 1914-1917. The trade in gold was less regular as regards occurrence of net imports. The latter took place in 13 years, and net exports in 30 different years. During the 43 years covered by the statistics, net exports of gold exceeded the net imports.

The table covering 1914 to 1930 (p. 87), is illustrated by Figure 11, in which the bullion figures are compared with China's merchandise trade. Since for the silver it imports China must pay by means of exports, it is not surprising to find that changes in the value of the merchandise trade are accompanied by a tendency toward similar changes in the value of bullion imports from year to year. The value of China's gold exports and imports is extremely small compared with that of the silver, and the chart shows that practically the entire bullion trade of China in recent years has been in silver.

⁴⁷ Unlike India, China is not known to contain large individual hoards of the precious metals. The holdings of silver and gold seem to be more generally distributed among the people, and almost the humblest peasant is likely to have some silver hidden in holes in the floor, behind a loose brick in the wall, sewed in mattresses or matting, or contained in jars buried under water, the roots of trees, or in the ground.

While Chinese customs statistics are carefully compiled and are reliable, certain features of the habitually adverse balance of merchandise trade require comment. Clearly, if China had a net balance due abroad each year, there would be no surplus to invest in silver. But, since China does buy rather heavily of silver, we know that there must be such a surplus. The latter arises not out of the merchandise trade, which is adverse, but out of the invisible items in China's balance of payments,⁴⁸ such being emigrant remittances, charitable and missionary donations, tourist expenditures, and the like. It is from these receipts, plus the proceeds of merchandise exports, that China meets its foreign obligations and purchases silver overseas.

The merchandise trade, which forms the chief item in China's balance of payments, can not be entirely measured by customs statistics published by China. In the first place, the existence of an export duty on merchandise is believed to result in some undervaluation of declared exports. The import figures, on the other hand, are not closely comparable with those of exports, because the former include freight and insurance. These two items, however, are in the long run payable by Chinese importers and must be met before that country can import silver.

Although Hong Kong is politically separate from China, in most other respects it may be regarded as economically part of that country. When reference is made to China's imports of silver, Hong Kong is usually considered as part of China; but Hong Kong's customs statistics are not included in the records of the Chinese Maritime Customs. This may make some of the statistics misleading. For example, in 1902, as Dr. C. F. Remer has shown,⁴⁹ there was a recorded excess of exports of silver amounting to 13,800,000 fine ounces; that same year heavy shipments went from China to Hong Kong and remained there.

Doctor Remer further points out that there is undoubtedly an unrecorded movement of silver toward China on the persons or in the baggage of returning emigrants, and on boats not passing through the customs. (The same is probably true of gold, particularly exports in 1931 and 1932, when an export embargo existed.) He concludes that we can not be certain of the significance of the bullion figures unless the movement they portray is large and persists beyond a single year.

PURCHASING POWER AND SILVER IMPORTS

Occasionally the statement is made that the price of silver having declined, and the gold value of the currency of silver-standard countries having declined correspondingly, those countries find their ability to import foreign goods greatly impaired. Such a statement may be considered as referring chiefly to China and Hong Kong, these being the last full silver-standard countries. (India, it will be recalled, is on the sterling-exchange standard, the exchange value of the rupee having no connection with the price of silver.)

China buys silver with the proceeds of Chinese goods and services sold abroad. In China's foreign trade, silver is a thing bought, and not the means of payment. As money, silver is a useful counter for the conduct of China's business. But money is not the source of demand for goods, and the purchasing power of a nation does not lie

⁴⁸ For Chinese balance-of-payments estimates see Nankai Weekly Statistical Service, Sept. 22, 1930.

⁴⁹ Quarterly Journal of Economics, August, 1926, p. 631.

in the value of its medium of exchange. Were the statement true that a decline in the price of silver implies a reduction in a nation's purchasing power abroad, one should expect to find some verification thereof in the statistics of China's trade during the years since silver started its recent price decline. But no such verification can be found. In 1930 and in 1931 our merchandise imports from China (including Hong Kong) declined 38 and 35 per cent, respectively, or 8 and 4 per cent more than our imports from the world as a whole. Yet our exports to China (including Hong Kong) not only kept pace with those to the world as a whole, but in 1931 showed an increase of over 1 per cent during a year when our gross exports to all countries declined 37 per cent. The following are the figures:

ANNUAL PERCENTAGE CHANGE IN UNITED STATES TRADE WITH CHINA AND ALL COUNTRIES, 1927-1931

Period	Exports, including re-exports, to—		General imports from—		Price of silver
	China (including Hong Kong and Kwan-tung)	All countries (including China)	China (including Hong Kong and Kwan-tung)	All countries (including China)	
1927.....	-16	+1	+8	-6	-9
1928.....	+52	+5	-8	-2	+3
1929.....	-6	+2	+17	+8	-9
1930.....	-27	-27	-38	-30	-28
1931.....	+1	-37	-35	-31	-25

The foregoing table does not eliminate China and Hong Kong from the "all countries" totals. When this is done, the percentage changes during 1931, as given above, are changed as follows:

Decline in price of silver.....	25.0
Increase in United States merchandise exports to China.....	1.2
Decline in United States merchandise exports to all other countries.....	38.1
Decline in United States merchandise imports from China....	34.9
Decline in United States merchandise imports from all other countries.....	31.4

From the conditions depicted by either of the last two pairs of percentages it can be said that we have done better in our trade with China than would have been expected.⁵⁰

Covering only the United States trade with China, the above table is of interest principally to American exporters. The following table shows the changes in the gold value of China's total foreign trade with all countries during the years 1927 to 1931. This table shows that a declining price of silver was accompanied by changes in China's imports which were less adverse to foreigners than were to China the concurrent changes in China's exports. These changes in the last two years, moreover, took place in the face of large increases in China's import duties.

⁵⁰ China's visible and invisible trade with the United States is usually much in China's favor. The changes occurring in the period since 1929 have served to convert the merchandise balance from one favorable to China to one unfavorable to China.

ANNUAL PERCENTAGE CHANGES IN GOLD VALUE OF CHINA'S TRADE AND PRICE OF SILVER

Year	Mer- chandise imports	Exports	Price of silver
1927.....	+6	-3½	-9
1928.....	+20	+11	+3
1929.....	-4	-8	-9
1930.....	-27	-37	-28
1931.....	-18	-25	-25

From this table an examination may be made as to (a) direction and (b) degree of the relationship which may exist between changes in the gold price of silver, on the one hand, and changes in the gold value of China's foreign trade, on the other. This table shows as to (a), that a similarity of movement did prevail during the five years from 1926 to 1931. As to (b), no generalization can be made, for exports of merchandise account for only part of China's income from abroad, available for silver purchases. Were it true that China's imports of merchandise vary with the price of silver, and in like degree, this relationship should appear in the statistics. But this is not evident, in the matter of degree, in any of the five years, and in 1926 did not obtain even in the matter of direction.

DATA ON TRADE OF CERTAIN SILVER-USING COUNTRIES

The position of the two leading silver-consuming countries in world trade may be seen from the following résumé, which shows their trade and that of 90 countries in 1929 and 1930. Hong Kong being principally a gateway to China, it is not separately shown in these figures.

Item	Exports (in millions of United States dollars)		Imports (in millions of United States dollars)	
	1929	1930	1929	1930
British India.....	1,190.6	927.3	900.0	666.5
Ceylon.....	154.2	115.0	147.1	110.3
China.....	660.0	420.1	820.0	611.0
Total.....	2,004.8	1,462.4	1,867.1	1,387.8
90 countries.....	32,101.7	25,537.0	34,842.5	28,191.4
Total for British India, Ceylon, and China as per cent of total for 90 countries.....	6.2	5.7	5.4	4.9

It is estimated that there are 13 countries and colonies in which silver forms the leading monetary medium, even though not the standard of value.⁵¹ Of the world's merchandise imports, these countries accounted for 7.6 per cent in 1930 and 7.7 per cent in 1931; of the world's exports, 9.5 per cent in 1930 and 9.4 per cent in 1931. They are more important as sellers of merchandise than as buyers.

⁵¹ These 13 countries are Anglo-Egyptian Sudan, British India, China, Eritrea, French Indo-China, Honduras, Hong Kong, Iraq, Mexico, Netherland East Indies, Nyasaland, Persia, and Siam. Hong Kong is included, although its trade is largely covered by the Chinese figures.

IMPORTANCE OF SHANGHAI STOCK

The changes in the stock of silver held in Shanghai are regarded in the silver market somewhat as a barometer of future demand, Shanghai being China's most important commercial city, and China being so important in the world demand for silver. Whereas the Indian Treasury's stock of silver is studied for what it may reveal concerning future sales of silver, Shanghai's stock is studied as an indicator of the possible volume of future purchases.⁵² For, although Shanghai's stock is occasionally swelled by an inflow from the interior of the country, it is usually replenished from abroad. The inflow mentioned is a phenomenon that becomes marked in times of political unrest in the interior; natives seek safety for their wealth within the borders of the foreign-protected treaty ports, and there is a flight of capital to such refuges.

Business prosperity and depression are additional causes of changes in Shanghai's silver stock. When banks are financing prosperous trade, more money is outstanding. When trade is dull, bank deposits in Shanghai swell.

In another way, also, Shanghai's silver stock is a gauge of the Chinese demand for silver, for the precise causes of the accumulation of silver in Shanghai are such events as interfere with China's production of goods for export, or with the movement of such goods to ports of exportation. Such interference touches the pulse of China's purchasing power abroad and, ipso facto, its purchases of occidental silver.

ESTIMATES OF SHANGHAI'S STOCK OF SILVER SINCE 1924

January 1—	Sycee, in millions of fine ounces ¹	Mexican dollars (millions)	Bars	Total, converted to fine ounces (millions)
1924.....	21	32		45.8
1925.....	54	39	3,770	87.9
1926.....	50	67	370	101.3
1927.....	66	70	3,020	123.9
1928.....	49	74	1,460	107.9
1929.....	62	101	5,740	147.2
1930.....	86	126	7,620	192.4
1931.....	92	153	2,760	214.9
1932.....	56	168	3,660	190.9

¹ "Sycee" is silver bullion cast in the form of ingots, or "shoes." The former name connotes silken fineness.

Source: Yearbook of the American Bureau of Metal Statistics, 1931.

SHANGHAI'S SILVER IMPORTS IN 1931

Considerable fluctuation from month to month is evident in silver imported into Shanghai. These imports are compiled by principal sources for 1931 in the following table. The chief source was the United States, and next in importance was Great Britain. Shipments from Great Britain, as also those from Japan and Hong Kong, are reexports.

⁵² Much the greater part of the Indian Treasury stock nowadays is regarded as awaiting sale. The same can not be said of Shanghai's stock, for it is in large part in use as the basis of China's monetary and banking systems.

SILVER IMPORTS INTO SHANGHAI IN 1931

[In thousands of fine ounces]

Month	United States	Canada	Great Britain	British India	Japan	Hong Kong	Total, all sources
January.....	4, 773		541		224	55	5, 593
February.....					186	35	221
March.....	563				155	57	775
April.....	1, 804	199			163	26	2, 192
May.....	9, 122	798	2, 985		99	10	13, 014
June.....	723				207	9	939
July.....	1, 650			1, 000	122	13	2, 785
August.....	755	250	111	12	179	40	1, 347
September.....	251		334		259	53	877
October.....	381	248			226	187	1, 042
November.....					253	71	304
December.....	286		5, 469		116	148	6, 019
Total, 1931.....	20, 308	1, 495	9, 440	1, 012	2, 169	684	35, 108

Source: American consulate at Shanghai.*

NOTE.—Other figures on China's trade in silver appear in Appendix 8.

HONG KONG CURRENCY COMMISSION OF 1931

The Hong Kong Currency Commission of 1931, consisting of three members, rendered its report on May 10, 1931. As stated in the concluding portion of the report, the purpose of the commission was to examine the following questions:

1. Whether it would be desirable to change the basis of Hong Kong currency from silver to gold.
2. If it is not both desirable and practicable to make this change now or in the immediate future, what reforms, if any, in the existing currency system should be adopted.
3. What steps, if any, should be taken in preparation for a change-over to gold in the future, if, for instance, China "went gold," or for any other reason.

In regard to (1) the commission considered the general arguments put forward in favor of stabilization and concluded that the most important point requiring determination was the desirability or undesirability of changing Hong Kong's currency from the silver standard to the gold standard; also the effect such change might be expected to produce on the trade and financial business of the colony. Upon examining the business of Hong Kong the commission on this point concluded that "while stabilization would facilitate the conduct of certain classes of business within the colony, it would gravely prejudice the import and export trade of South China conducted or financed through Hong Kong, which is the sheet anchor of the colony's prosperity, and would affect injuriously many other branches of business; and we therefore advise against it."

The commission pointed out that Hong Kong's currency must be considered in its relation to the currency of China. After remarking on the use of Hong Kong currency in China, the report of the commission outlined the functions of the Hong Kong dollar as an exchange currency, drawing special attention to the fact that it supplies the lack of a fully developed exchange currency in parts of South China. The following proposals for the reform of Hong Kong's currency system were made by the commission:

1. The legal-tender status of the dollar coin to be limited to \$10.
2. Bank notes to be made unlimited legal tender.

3. Notes to be convertible into silver bullion.
4. Notes to be obtainable for silver bullion.
5. Government to take charge of the silver reserves of the note issues.
6. Silver bullion presented in future in exchange for notes to be handed to the Government.
7. A Hong Kong Currency Board to be set up.

In addition to the above the commission suggested that the existing issue of silver subsidiary coins be "replaced by an issue of base-metal token coins." [By "token" the commission obviously means "subsidiary."] Another recommendation was for the accumulation by the proposed currency board of a pound-sterling fund, with the object of preparing for the ultimate conversion of Hong Kong currency to the gold basis, if and when that appears desirable.

Finally, the commission in its report offered some miscellaneous observations on the rate at which the Hong Kong dollar should ultimately be stabilized, on the question of a parallel sterling note issue, on the need for banking legislation, and on the fixation of bullion points under the commission's scheme and its effects on exchange speculation.

SILVER AS CURRENCY

Although the full silver standard, embracing free coinage and freedom of importation and exportation of silver, exists only in China and Hong Kong, silver still has its monetary uses in most parts of the world.⁵³ A table presented in Appendix 9 shows that 2,111,600,000 fine ounces of silver were coined by the mints of the world from 1900 to 1929, inclusive. During that period British India minted 863,400,000 fine ounces; the United States, 236,000,000; Russia, 151,700,000; Mexico, 150,400,000; Germany, 135,900,000; and Japan, 132,400,000. China is not separately listed.

A second table shows the gold and silver holdings of leading central banks at the end of each year from 1900 to 1930. It will be seen that the central bank stock of silver money has decreased greatly during the present century, notably since 1921. The silver holdings of the 18 banks listed had a value of \$316,400,000 in 1921 and only \$232,900,000 in 1929. The Bank of Spain silver stock of \$134,900,000 was the largest listed. (India does not appear on the list, having no central bank. The Indian Treasury holdings are shown on page 84.)

CHANGES IN FINENESS OF COINS

Beginning in 1920 a number of nations lowered the fineness of their silver coinage. The first important nation to do so was the United Kingdom. The following table shows the dates and details of debasement of silver coinage in various countries.

⁵³ China, it is true, has an embargo on the importation of silver coins, but this is not important, since bar silver may be freely imported. China has "free coinage" of silver in the sense that the Chinese people treat silver in any form as money, qualified only by weight and fineness.

LATEST CHANGES IN FINENESS OF EUROPEAN SILVER COINS SINCE 1919

Country	Present fineness	Date of legislation	Previous fineness
Austria	0.640	December, 1924	0.900, 0.835, 0.500, and 0.400.
Belgium	No silver coins	October, 1926	0.900 and 0.835.
Bulgaria	0.500	December, 1928	0.900 and 0.835.
Czechoslovakia	0.700 and 0.500	July, 1931	0.900, 0.835, 0.500, and 0.400.
Danzig	0.500	November, 1929	0.750 (established 1923).
Denmark	No silver coins	February, 1932	0.800, 0.600, and 0.400.
Estonia	0.500	February, 1924	0.900 and 0.500.
Finland	No silver coins	May, 1927	0.868 and 0.750.
France	0.680 ¹	December, 1925	0.800 and 0.835.
Germany	0.500	June, 1928	0.900.
Greece	0.500	August, 1924	0.900 and 0.835.
Hungary	0.640	May, 1928	0.900, 0.835, 0.500, and 0.400.
Irish Free State	0.750	November, 1925 ²	Same as United Kingdom.
Italy	0.835 and 0.900	April, 1926	0.900 and 0.835.
Latvia	0.835	June, 1927	0.900 and 0.500.
Lithuania	0.500	September, 1925	0.900 and 0.500.
Netherlands	0.720 and 0.640	August, 1922	0.945 and 0.640.
Norway	No silver coins	June, 1924	0.800, 0.600, and 0.400.
Poland	0.750 and 0.500	November, 1919	0.900 and 0.835.
Portugal	0.835 ³ and 0.650	April, 1928	0.900 and 0.835. ⁴
Rumania	No silver coins	October, 1927	0.900 and 0.835.
Switzerland	0.835	June, 1931	0.900 and 0.835.
United Kingdom	0.500	—, 1932	0.925.
Yugoslavia	0.500	June, 1931	0.900 and 0.835.

¹ Coins not yet issued but, according to law, must be put into circulation during 1932.

² Effective Jan. 1, 1927.

³ No coins 0.835 fine had been issued up to March, 1932.

⁴ Law of February, 1929, did not provide for any silver coins, but law of Dec. 19, 1931, authorizes minting of 100-let silver coins 0.500 fine. Up to the end of June, 1932, these had not been put into circulation.

NOTE.—Compiled by J. A. Pennington, Specialties Division, Bureau of Foreign and Domestic Commerce.

SALES OF DEMONETIZED SILVER

The following table shows the estimated total sales of demonetized silver, in millions of fine ounces, from 1920 to 1931, inclusive.

ESTIMATED SALES OF DEMONETIZED SILVER, 1920-1931, ACCORDING TO COUNTRY OF ORIGIN

[In millions of fine ounces]

Year	United Kingdom	Europe	India	French Indo-China	Other countries	All countries
1920		27.0				27.0
1921	6.5	130.0				36.5
1922	24.0	19.0				43.0
1923	25.0	20.0				45.0
1924	2.0	18.0				20.0
1925	7.0	23.0				30.0
1926	.7	27.0				7.7
1927	1.2	18.0	9.2			18.4
1928	5.5	32.0	22.5			60.0
1929	10.0	10.0	35.0	12.0		67.0
1930	(¹)	22.0	29.5	20.0		71.5
1931	(²)		35.0	6.4	27.4	68.8
Total	81.9	216.0	131.2	38.4	27.4	494.9

¹ Germany accounted for 8,000,000 of this total.

² Of the 79,000,000 ounces reported as sold by Europe from 1926 to 1930, inclusive, 66,000,000 came from France and 13,000,000 from Belgium.

³ In 1930 and 1931 additional supplies came to London from Europe and from the debasement of British coinage. These were all used in the manufacture of coin for other countries and are not shown in this table.

⁴ 20,000,000 ounces from Siam, 4,500,000 from Mexico, and 2,900,000 from Egypt.

Source: Handy and Harman.

RECENT LEGISLATION

Some recent legislative measures which relate to the use of silver as currency should be noted.

Canada in 1931 issued 2,294,000 10-cent pieces; 60,000 half dollars; and minted 848,000 25-cent pieces.

Colombia in October, 1931, decided to mint from the Government's stock of bar silver 4,000,000 half-peso coins. The act of June, 1931, authorizes the Government to contract with the Bank of the Republic for the issuance of silver certificates against legal silver coin held by the bank. Commercial banks may hold silver certificates instead of silver coins as their silver reserve up to the percentage allowed by law.

Cuba, it was reported in April, 1932, called for bids for the minting of 3,550,000 silver dollars and some \$36,860 in 25-cent pieces. The minting of these new coins brought Cuba's silver coinage up to the limit of \$12,000,000 authorized by the currency law of October 29, 1914.

Egypt in 1931 sold £E800,000 of silver in London, or about 2,940,000 fine ounces.

Ethiopia, it is reported, on March 30, 1931, levied an excise tax on certain articles, both imported and domestic, with the object of raising funds to take over the Bank of Abyssinia and establish a gold-standard currency known as the Ethiopian gold pound. The unit is planned to have the same par value as the pound sterling, to be divided into 10 silver dollars. The silver dollar will be divided into 20 besas. What progress has been made toward the gold standard is not known.

France has for some time been coining silver; no purchases on the open market are necessary, however. In March, 1932, Samuel Montagu & Co. reported that the French mint had completed delivery to the Bank of France of 100,000,000 silver 10-franc pieces, which under the existing law must be put into circulation in 1932. Some 20-franc pieces of silver are also being prepared. These new coins are intended to replace the present 5-franc, 10-franc, and 20-franc notes, which will cease to be legal tender after 1932.

French Indo-China abandoned the silver standard at the beginning of 1930, placing the piaster on a franc-exchange basis.⁵⁴

Germany increased its silver coinage considerably in 1931. In July the amount of small change permitted to be issued was raised from 20 to 30 reichmarks per capita—a maximum of about 1,800,000,000 reichmarks. (At par, 1 reichmark equals \$0.2382.) The Reichsrat of July 30 approved the coinage of 100,000,000 reichmarks in 5-reichmark pieces. In October the German Government again was considering new silver coinage, to replace some of the 10-reichmark notes of the Reichsbank. Up to about December 15 about 19,200,000 fine ounces of silver had been purchased by the German mints during 1931. The increase in silver coinage by the end of 1931 was reported as 332,900,000 reichmarks, which compares with 50,335,000 reichmarks in 1930; 78,270,000 in 1929; and 153,228,000 in 1928.

On April 14, 1932, the Federal Council approved the further minting of 100,000,000 reichmarks of silver, thus raising the total silver in circulation to over 1,500,000,000 reichmarks.

⁵⁴ See Annual Report of the Director of the Mint (U. S.), 1931, p. 196.

Utilizing the silver coinage as a means of keeping down the gold-reserve requirements, the German Government encourages the employment of silver in the payment of the salaries of public servants. Since July, 1932, the railways have been under instruction to use silver only, in all payments of 10 marks or less.

As shown in reports of the Director of the United States Mint and United States consular reports, silver in monetary use in Germany has steadily increased:

	Reichsmarks
1924.....	262, 300, 000
1925.....	448, 900, 000
1926.....	634, 000, 000
1927 (does not include silver held by private banks).....	721, 800, 000
1928.....	872, 900, 000
1929.....	915, 500, 000
1930.....	964, 900, 000
1931.....	1, 371, 600, 000
1932 (May 31).....	1, 659, 100, 000

Honduras in March, 1931, adopted a decree-law providing for the issuance of new lempira silver coins⁵⁵ (par value \$0.50) backed by a gold reserve of 50 per cent. Provisions were made for withdrawal of the old peso currency within one year. After several delays in inaugurating the new monetary system, a conference of bankers and industrialists, held under Government auspices on November 10, 1931, decided on the "immediate conversion from the silver to the gold standard."

Since that time, the Government has been retiring its peso currency and substituting lempiras therefor, having planned originally to complete the operation by June 10, 1932. On June 10 the date was prorogued for 90 days. In September the monetary commission decided that, after the elections on October 30, the circulation of silver lempiras would be increased by 800,000, so as to make the total circulation 3,000,000 lempiras. Thus, considerable progress has been made toward the transition to the gold standard.

Manchuria now has a new note-issuing bank, the Central Bank of Manchukuo, organized June 15, 1932, and opened for business July 1. Its notes, issued on behalf of "the central government of Manchukuo," are based on a silver yuan of 23.91 grams of fine silver, and are intended ultimately to replace all other paper currency previously issued in Manchuria. Reserve against the central bank's note issue, according to a Manchukuo ordinance, must consist of reliable foreign currencies, or silver or gold bars, or silver and gold deposits with any foreign banks. Such security must amount to 30 per cent of the issue; the remaining 70 per cent may consist of certain bonds, commercial bills, etc.

The decimal system is adopted for the new currency. One yuan is divided into 10 chiao; 1 chiao equals 10 fen; 1 fen equals 10 li. No silver coins are mentioned in the law, subsidiary money being either of paper (5 chiao) or of copper.

Mexico, by its action in demonetizing gold on July 25, 1931, limits the currency of that country to silver pesos, fractional coins, and Bank of Mexico notes. But this action has not placed Mexico on a silver basis. Free coinage is not permitted, and Mexican silver coins may not be imported from abroad. The exchange value of Mexican currency does not fluctuate with the price of silver, but is determined

⁵⁵ Previously authorized by the gold-standard law of December, 1926.

solely by supply of and demand for exchange. During 1931 Mexico is estimated to have sold something over 4,000,000 fine ounces of silver with the object of converting into foreign exchange certain Government supplies of obsolete coins and metal disks then being held for possible future coinage. In March, 1932, the Mexican Government concluded arrangements to purchase and coin some 23,500,000 fine ounces of silver over a 12-month period.

The Mexican *Diario Oficial* of March 10, 1932, carried an amendment to the currency law of 1931. Article 13 of the last-mentioned law is amended to read as follows:

The minting of silver coins of 1 peso or larger denominations may be ordered only by the Banco de Mexico, in accordance with the law authorizing its establishment, by resolution taken by the board of directors in secret vote, by a majority of at least 7 votes, such resolution remaining subject to veto by the Secretary of Finance and Public Credit. The difference between the cost and the monetary value of the coins of 1 peso or larger denominations that may be minted shall be held by the Banco de Mexico for the exclusive purpose of augmenting as much as necessary the legal reserves covering the emission of bank notes, as long as it is not applied, by definite provision of law, to the monetary reserve. The bank shall periodically pay to the State interest at the average rate that it charges on its rediscount operations, on the quantities that it utilizes from this difference for the increment of the legal reserves against note issue, as long as such quantities are availed of by it and form an integral part of said reserves.

The minting of silver or bronze coins of less than 1 peso can only be done under the conditions indicated in the preceding paragraph, and necessarily in exchange for silver coins of 1 peso, which must be minted for this purpose.

The 1932 legislation further provides:

For this one time, the Ministry of Finance and Public Credit shall order the minting of silver coins of 1 peso of the legal stamp, in the quantity that may be strictly indispensable, in the judgment of the board of directors of the Banco de Mexico, in order to correct the present insufficiency of media of exchange. The total liquid product of this minting shall be delivered to the Banco de Mexico to be held and applied to increasing the legal reserves against its note issue, and to the formation of the monetary reserve, in the same manner as provided in Article 1 of this law for the application of funds from coinage ordered by the Banco de Mexico.

Persia in 1930 took steps toward the ultimate abandonment of silver and the adoption of gold. The general economic depression since then has prevented *Persia* from establishing itself on a gold basis, although a few new gold coins and some new silver rial coins made their appearance in March, 1932. The country, however, is not on the full silver standard, because free coinage and free importation and exportation of silver do not exist.

Peru passed a law on May 29, 1932, amending the organic act of the Central Reserve Bank to provide that notes issued by that institution should be backed by not less than 50 per cent in gold and 20 per cent in silver money.

Rumania, according to press reports from Bucharest in 1931, is to substitute silver coins for existing 20-lei coins and 100-lei notes, to the amount of 1,700,000,000 lei (\$10,200,000 face value).

Spain is not known to have been active in the silver market, although the country has a large stock of silver. Prof. Charles Rist of France recently estimated Spain's silver (held in the central bank and in the hands of the public) at 1,000,000,000 pesetas. (The peseta has a par value of \$0.193; on June 20, 1932, it was quoted at \$0.0824.) The stock of silver in the country does not vary greatly. Fluctuations in the amount of silver held by the Bank of Spain are

attributed to absorption by hoarding. The latter phenomenon was reflected in a demand for bank notes. To prevent—at least, in part—this tendency of the note issue to increase, the Bank of Spain in 1931 initiated a policy of making one-tenth of its out-payments in the form of silver pesetas. In the light of this fact, the following figures on that institution's holdings of silver are of interest.

	<i>Silver holdings, in millions of pesetas</i>
1928.....	698
1929.....	705
1930.....	701
1931:	
January.....	711
March.....	717
December.....	517
1932:	
January.....	526
February.....	534
July.....	580

Turkey, early in 1932, was reported to have decided upon reinstating silver coinage, suspended in 1914.

Union of Soviet Socialist Republics in April, 1932, was reported to have decided upon the issuance of new nickel coins for circulation on the same basis as the present nickel coins.

Yugoslavia on November 28, 1931, passed a law providing for the minting of 450,000,000 dinars of silver 10 and 20 dinar pieces (0.750 fine). In August a law was passed to provide for the minting of 550,000,000 dinars additional in silver coins of 50-dinar denomination. Negotiations for the purchase of 160,000 kilos of silver were reported late in August. It is said the Government intends to withdraw from circulation 450,000,000 dinars of 10-dinar bank notes.

APPENDIXES

APPENDIX 1.—SILVER PRODUCTION

A. SUMMARIZED DATA OF WORLD SILVER PRODUCTION SINCE 1493

[In millions of fine ounces]

Period	Mexico		United States		Canada		All North America		Peru		All South America		Total, New World		Australia		World total ¹
	Quantity	Per cent of world total	Quantity	Per cent of world total	Quantity	Per cent of world total	Quantity	Per cent of world total	Quantity	Per cent of world total	Quantity	Per cent of world total	Quantity	Per cent of world total	Quantity	Per cent of world total	
1493-1600	90	12					90	12	94	12	454	61	544	73			747
1601-1700	307	24					307	24	332	26	801	63	1,108	87			1,272
1701-1800	1,045	57					1,045	57	360	20	598	32	1,643	89			1,833
1801-1850	605	57	0.4				605	57	159	15	305	20	910	86			1,064
Total, ¹ 1493-1850	2,047	42	1.4				2,047	42	945	19	2,158	44	4,205	86			4,916
1851-1855	75	48	.2				75	48	12	8	49	31	124	79			155
1856-1860	72	49	.3				72	50	11	8	39	27	111	77			146
1861-1865	76	43	29.0	16			105	59	12	7	40	22	145	81	0.01		179
1866-1870	84	38	49.0	22	0.2		133	60	11	5	44	20	177	80	.02		222
1871-1875	97	29	121.0	36	2.0		220	66	11	3	69	21	289	87	.37		334
Total, ¹ 1851-1875	403	39	200.0	19	2.2		605	58	58	6	240	23	845	81	.41		1,035
Total, ¹ 1493-1875	2,450	42	200.0	3	2.2		2,652	45	1,003	17	2,308	40	5,050	85	.41		5,951
1876	18		30.0		.2		48		2		9		57		.06		67
1877	21		31.0		.1		52		1		9		61		.04		74
1878	21		35.0		.8		57		2		9		66		.05		78
1879	19		32.0		.1		51		2		15		66		.16		79
1880	19		30.0		.1		50		2		15		65		.16		78
1881	21		33.0		.1		55		2		15		70		.1		84
1882	23		36.0		.1		59		1		15		74		.1		88
1883	23		36.0		.2		59		1		20		79		.1		90
1884	21		38.0		.2		59		1		15		74		.1		82
1885	25		40.0		.2		65		2		17		82		.8		92
1886	26		39.0		.2		67		3		18		85		.9		95
1887	29		41.0		.3		72		2		14		86		.2		97
1888	32		46.0		.3		80		2		17		97		4.0		110
1889	37		50.0		.4		89		2		16		105		7.0		127
1890	39		55.0		.4		95		2		15		110		8.0		134
1891	35		58.0		.3		95		2		17		112		10.0		138
1892	40		63.0		.3		105		2		18		123		13.0		154
1893	44		60.0		.2		106		2		21		127		20.0		166

1894.....	47		50.0		.8		99		3		31		130		18.0		165
1895.....	47		56.0		1.8		106		3		32		138		12.0		168
1896.....	46		59.0		3.2		109		4		17		126		12.0		157
1897.....	54		54.0		5.6		114		3		20		134		12.0		161
1898.....	57		54.0		4.5		116		5		27		143		10.0		170
1899.....	56		55.0		3.4		115		7		25		140		13.0		169
1900.....	57		58.0		4.4		121		7		24		145		13.0		174
Total, ¹ 1876-1900.....	856	29	1,138.0	38	28.0	1	2,042	08	68	2	453	15	2,495	83	154.0	5	2,999
Total, ¹ 1493-1900.....	3,306	37	1,338.0	15	28.0	3	4,694	52	1,071	12	2,851	32	7,545	84	159.0	2	8,950
1901.....	58		55.0		5.0		119		4		28		147		10.0		173
1902.....	60		56.0		4.0		121		4		17		138		7.0		163
1903.....	70		54.0		3.0		130		2		10		140		9.0		168
1904.....	61		58.0		4.0		123		3		9		132		13.0		164
1905.....	65		56.0		6.0		128		6		10		138		14.0		172
1906.....	55		57.0		9.0		122		7		12		134		13.0		166
1907.....	61		57.0		13.0		132		10		16		148		16.0		185
1908.....	74		52.0		22.0		150		10		18		168		15.0		204
1909.....	74		55.0		28.0		158		10		17		175		15.0		213
1910.....	71		57.0		33.0		163		7		14		177		20.0		221
1911.....	79		60.0		33.0		173		8		15		188		15.0		227
1912.....	75		64.0		32.0		173		8		15		188		14.0		226
1913.....	71		67.0		32.0		171		10		16		187		17.0		228
1914.....	28		72.0		28.0		131		9		13		144		10.0		177
1915.....	40		75.0		27.0		144		9		13		157		8.0		189
1916.....	23		74.0		25.0		125		11		16		141		10.0		175
1917.....	35		72.0		22.0		131		11		15		146		9.0		180
1918.....	63		68.0		21.0		155		10		15		170		9.0		203
1919.....	66		57.0		16.0		141		10		15		156		7.0		180
1920.....	67		55.0		13.0		137		9		15		152		2.0		173
1921.....	64		53.0		13.0		133		10		16		149		5.0		172
1922.....	81		56.0		19.0		158		13		21		179		11.0		210
1923.....	91		73.0		18.0		184		19		27		211		13.0		246
1924.....	91		65.0		20.0		179		19		27		206		10.0		240
1925.....	93		60.0		22.0		182		20		28		210		10.0		245
1926.....	98	39	63.0	25	22.0	9	187	74	21	8	30	12	217	86	11.0	4	254
1927.....	105	42	60.0	24	23.0	9	191	76	18	7	27	11	218	87	7.0	3	251
1928.....	109	42	58.0	22	22.0	9	191	74	22	9	29	11	220	85	10.0	4	258
1929.....	109	42	61.0	23	23.0	9	196	75	21	8	27	10	223	85	9.0	3	261
1930 ²	105	42	51.0	21	26.0	10	186	75	16	7	24	10	210	85	9.0	4	248
Total, ¹ 1900-1930.....	2,142	35	1,827.0	29	584.0	9	4,614	75	337	6	555	9	5,169	84	328.0	5	6,172
Total, ¹ 1493-1930.....	5,448	36	3,165.0	21	612.0	4	9,308	62	1,408	9	3,406	23	12,714	84	487.0	3	15,122
1931.....	86		32.0				143		9		16		159		9.0		196

¹ All the items being abbreviated, not all the summations agree precisely with the totals.

² 1831-1850 only.

³ Estimated.

Source: Data for 1493 to 1927 from Bureau of Mines Economic Paper 8, Summarized Data of Silver Production; later figures from Bureau of the Mint, which in its annual report publishes this information in more detail, and other sources; 1931 figures based on 1931 Yearbook of the American Bureau of Metal Statistics.

THE SILVER MARKET

B. WORLD PRODUCTION OF REFINED SILVER, 1921-1931

Year	Millions of fine ounces ¹					Per cent of world production ¹			
	World	United States	Mexico	Germany	Canada	United States	Mexico	Germany	Canada
1921.....	182.0	103.2	39.2	13.9	10.2	56.7	21.5	7.6	5.6
1922.....	205.3	112.0	49.1	14.9	10.5	54.6	23.9	7.3	5.1
1923.....	237.4	136.7	54.2	11.5	11.8	57.6	22.8	4.8	5.0
1924.....	235.2	133.7	51.6	12.7	12.0	56.8	21.9	5.4	5.1
1925.....	234.0	124.7	54.3	15.4	12.0	53.3	23.2	6.6	5.1
1926.....	247.7	132.3	59.6	13.8	15.0	53.4	24.1	5.6	6.1
1927.....	246.1	122.7	61.1	17.1	15.3	49.9	24.8	6.9	6.2
1928.....	269.4	139.5	63.3	23.3	13.5	51.8	23.5	8.6	5.0
1929.....	282.8	147.3	61.4	28.6	14.5	52.1	21.7	10.1	5.1
1930.....	264.4	134.0	59.4	25.7	15.0	50.6	22.7	9.7	5.7
Total, 1921-1930.....	2,404.6	1,286.1	553.8	176.9	129.8	53.68	23.01	7.26	5.4
Average, 1921-1930.....	240.46	128.61	55.38	17.69	12.98	53.68	23.01	7.26	5.4
1931.....	213.8	99.9	48.6	22.5	14.7	46.7	22.7	10.5	6.9

¹ From yearbooks of the American Bureau of Metal Statistics.

² Compiled by Y. S. Leong.

C. DISTRIBUTION OF SILVER PRODUCTION OF THE UNITED STATES, IN 1930 AND 1931

(In thousands of fine ounces)

State	1930				Total, 1931
	Dry and siliceous ore ¹	Lead ores ²	Copper ore	Total	
Alaska.....	129		280	409	355
Arizona.....	186	385	4,969	5,541	4,304
California.....	836	316	471	1,623	710
Colorado.....	1,321	1,500	1,470	4,291	2,148
Idaho.....	37	9,357	26	9,421	7,390
Illinois.....		2		2	
Michigan.....			8	8	1
Missouri.....		170		170	13
Montana.....	658	1,812	4,584	7,053	4,120
Nevada.....	2,479	1,470	271	4,220	2,413
New Mexico.....	57	764	270	1,091	1,030
North Carolina.....	(³)		30	30	11
Oregon.....	8	(⁴)	1	9	7
Pennsylvania.....			6	6	2
South Dakota.....	105			105	114
Tennessee.....			84	84	52
Texas.....	389		(⁵)	389	(⁶)
Utah.....	2,216	9,969	944	13,129	8,173
Vermont.....			4	4	
Washington.....	2	3	28	33	22
Total ⁷	8,422	25,750	13,445	47,618	30,863

¹ Includes small quantity of silver from placer mines (less than 50,000 ounces).

² Includes silver in lead, silver-lead, lead-zinc, copper-lead, copper-lead-zinc, and zinc ores.

³ 54 ounces.

⁴ 102 ounces.

⁵ 411 ounces.

⁶ 250 ounces.

⁷ Does not include Philippines, 110,270 ounces in 1930 and 104,004 in 1931 from lode mines; nor details of insignificant items for Alabama, Georgia, and Wyoming.

NOTE.—Because of abbreviations in the items, slight discrepancies may be found in the summations.

Source: Data for 1930 from Report of the Director of the Mint, 1931, p. 38; 1931, from a mimeographed release of the Treasury Department, Jan. 5, 1932.

APPENDIX 2.—INDUSTRIAL CONSUMPTION OF UNITED STATES AND CANADA

The industrial consumption of silver in the United States and Canada is estimated annually by Handy and Harman and was as shown in the following table covering the period 1920 to 1931, inclusive. Using the index numbers given therein and applying them to the Bureau of the Mint's estimates of silver furnished for industrial use in the United States alone, the results shown in the second table are obtained.

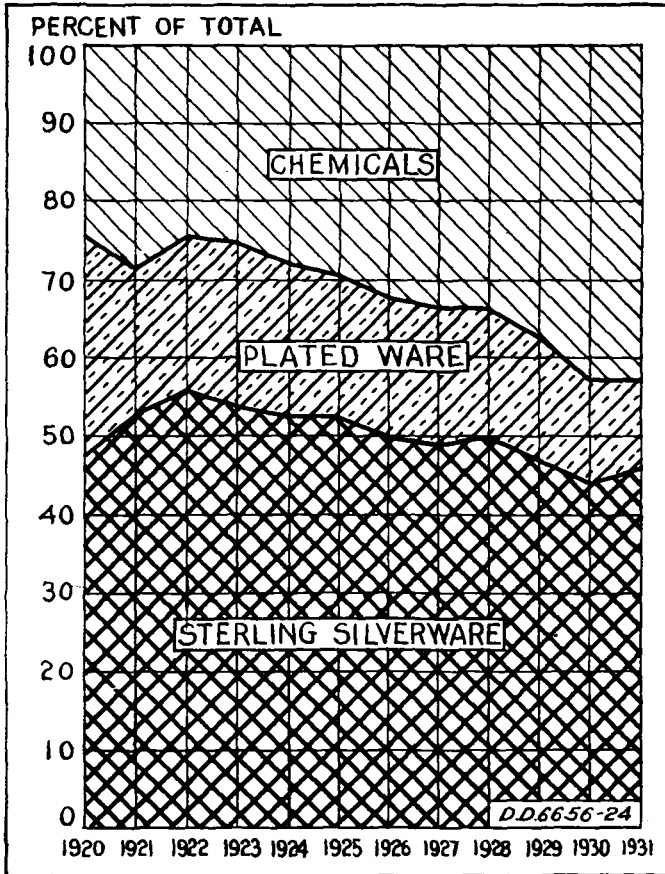


Figure 12.—Percentage distribution of estimated industrial consumption of silver in the United States and Canada, 1920-1931

The Handy and Harman indexes show that in recent years the proportion of industrial consumption accounted for by the chemical industry (chiefly in connection with photography) has been on the increase, and to-day almost equals in importance the consumption of the sterling-silverware industry.¹ The consumption of silver for plated ware has declined and occupies a relatively minor position.

There is a difference each year between the estimate of industrial consumption of silver issued by the Mint and that made by Handy and Harman. The former's estimate ostensibly covers only the

¹ In the United States Daily of Aug. 4, 1930, Dr. Burt H. Carroll, of the Bureau of Standards, stated that the photographic industry of the United States consumes over 150 tons of silver a year—that is, about 4,375,000 fine ounces. It is believed this figure is too low.

United States, while Handy and Harman's include the United States and Canada. However, for practical purposes, both may be regarded as covering the United States and Canada, because the Mint takes cognizance only of the place of sale and not the place of consumption. Canadian industrial consumption of silver is supplied largely by American refiners.

That the Mint's estimates are always larger than Handy and Harman's may be due in part to better sources of information being available to the Government. The Mint estimate is based on a questionnaire sent out each year. The information on gold and silver consumption in industry which its estimates embrace is described in the 1931 annual report (p. 62) as follows

These estimates comprise bar sales by the mints and assay offices for industrial uses (partly estimated) plus similar items issued by private refiners, dealers (and manufacturers), as reported to the Mint Bureau, plus an estimate of domestic coin melted for industrial use; from the total of these is deducted the old jewelry, plate, scrap, etc., received by the same concerns, giving net new materials consumed.

From the following table it will be noted that the Mint estimates separately industrial consumption of new and old material. By "old material" is meant silver previously used in the arts and industry, but not silver previously used as currency. The latter is classified as "new material." Naturally, no precise information is obtainable on the origin of bar silver. A single bar may quite likely contain both "new" and "old" material. Industrial consumers of silver constantly have scrap silver to sell, and such scrap, returning to a refinery, Government assay office or mint, later reappears on the market and is again consumed by industry.

A. INDUSTRIAL CONSUMPTION OF SILVER IN THE UNITED STATES AND CANADA, 1920-1931

[Estimates based on a table of index numbers prepared by Handy and Harman]

Year	Millions of ounces ¹				Per cent of total			Handy and Harman indexes ²				Estimates ³ (millions of fine ounces)
	Sterling silver-ware	Chemicals	Plated ware	Total	Sterling silver-ware	Chemicals	Plated ware	Sterling silver-ware	Chemicals	Plated ware	Total	
1920.....	10.2	5.2	6.0	21.4	47.7	24.3	28.0	100.0	51.0	58.9	209.9	23.0
1921.....	9.2	5.0	3.3	17.5	52.6	28.6	18.8	89.5	49.0	31.8	170.3	18.0
1922.....	13.1	5.7	4.7	23.5	55.7	24.3	20.0	128.1	55.6	45.7	229.4	24.0
1923.....	14.6	6.9	5.9	27.4	53.3	25.2	21.5	142.8	66.9	57.4	267.1	29.2
1924.....	14.3	7.7	5.4	27.4	52.2	28.1	19.7	139.1	74.9	52.7	266.7	28.0
1925.....	16.3	9.2	5.7	31.2	52.2	29.5	18.3	159.5	89.6	55.9	305.0	31.0
1926.....	16.8	11.1	6.0	33.9	49.6	32.7	17.7	163.6	108.7	58.3	330.6	33.5
1927.....	16.4	11.2	5.9	33.5	49.0	33.4	17.6	160.1	109.2	57.7	327.0	33.5
1928.....	16.9	11.4	5.6	33.9	49.9	33.6	16.5	165.0	111.1	54.8	330.9	33.5
1929.....	16.8	13.6	5.8	36.2	46.4	37.6	16.0	164.0	132.9	57.1	354.0	37.0
1930.....	12.5	12.0	3.9	28.4	44.0	42.3	13.7	121.6	117.0	37.8	276.4	29.5
1931.....	13.8	12.9	3.5	30.2	45.8	42.7	11.5	135.1	126.0	33.9	295.0	30.5

¹ The 33.5 million fine ounces reported as consumed in the arts and manufactures in 1927 are used as a basis for the present calculations. The total of 33.5 million ounces is assumed to be distributed among the three industries (sterling silverware, chemicals, and plated ware) in accordance with the Handy and Harman indexes for 1927, which are in turn based on 1920. Thus, 1927: Sterling silverware index, 160.1; chemical index, 109.2; plated-ware index, 57.7; total, 327.0=33.5 million fine ounces; therefore, 100.0=10.2446 million fine ounces.

² For the figures in these four columns, 100 equals the total ounces of fine silver consumed in the manufacture of sterling silverware (both flatware and hollow ware) in 1920. This has been used as an index basis for all other figures. It will be noted that the computed estimates in the column showing total consumption in millions of ounces approximated Handy and Harman's published estimates given in the last column of the table.

³ Of silver consumption in arts and manufactures in United States and Canada, as taken from annual reports of Handy and Harman.

THE SILVER MARKET

B. ESTIMATED DISTRIBUTION¹ OF SILVER FURNISHED FOR INDUSTRIAL USE IN THE UNITED STATES, 1920-1930

[In millions of fine ounces]

Year	New material				Old material				New and old material combined			
	Sterling silver-ware	Chemicals	Plated ware	Total	Sterling silver-ware	Chemicals	Plated ware	Total	Sterling silver-ware	Chemicals	Plated ware	Grand total
1920.....	9.2	4.7	5.4	19.3	4.2	2.1	2.4	8.7	13.4	6.8	7.8	28.0
1921.....	15.2	8.2	5.4	28.8	3.7	2.0	1.3	7.0	18.9	10.2	6.7	35.9
1922.....	17.4	7.6	6.3	31.3	3.7	1.6	1.3	6.6	21.1	9.2	7.6	37.9
1923.....	15.1	7.2	6.1	28.4	4.5	2.1	1.8	8.5	19.6	9.3	7.9	36.8
1924.....	12.9	6.9	4.9	24.7	4.6	2.5	1.8	8.9	17.5	9.4	6.7	33.6
1925.....	15.6	8.8	5.5	29.9	5.2	2.9	1.8	9.9	20.8	11.7	7.3	39.8
1926.....	14.6	9.6	5.2	29.4	5.0	3.3	1.8	10.0	19.6	12.9	7.0	39.6
1927.....	14.0	9.5	5.0	28.5	5.0	3.4	1.8	10.2	19.0	12.9	6.8	38.6
1928.....	12.4	8.4	4.1	24.9	5.3	3.6	1.7	10.6	17.7	12.0	5.8	35.5
1929.....	14.4	11.7	4.9	31.0	5.3	4.3	1.8	11.4	19.7	16.0	6.7	42.4
1930.....	11.8	11.4	3.7	26.9	4.2	4.0	1.3	9.5	16.0	15.4	5.0	36.3

¹ Obtained by applying Handy and Harman percentages to Mint Bureau estimates.

² The difference of 0.1 in the summation is due to abbreviation of the items.

Source: Annual Report of the Director of the Mint, 1931, p. 40, and percentages calculated from graph privately circulated by Handy and Harman.

APPENDIX 3.—NEW YORK PRICE OF SILVER, 1913-1932

MONTHLY AVERAGE OF NEW YORK PRICE PER FINE OUNCE OF BAR SILVER (OFFICIAL PRICE)¹

Month	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922
January.....	\$0.62937	\$0.57572	\$0.48855	\$0.56775	\$0.75601	\$0.88702	\$1.01125	\$1.32826	\$0.65950	\$0.65450
February.....	.61642	.57505	.48477	.56755	.77585	.85716	1.01125	1.31295	.59233	.65290
March.....	.57870	.58067	.50241	.57935	.73824	.88082	1.01125	1.25551	.56023	.64440
April.....	.69490	.58519	.50250	.64415	.73875	.95342	1.01125	1.19778	.59337	.66657
May.....	.60360	.58175	.51994	.74269	.74745	.99548	1.01135	1.02585	.59810	.71154
June.....	.58990	.56471	.49033	.65062	.76971	.99500	1.10430	.90957	.58510	.71149
July.....	.58721	.54677	.47519	.62940	.79010	.99525	1.06394	.91971	.60260	.70245
August.....	.59293	.54452	.47163	.66083	.85598	1.00291	1.11370	.96168	.61597	.69417
September.....	.60640	.53290	.48640	.68515	1.00730	1.00125	1.14540	.93675	.66160	.69515
October.....	.60793	.50653	.49385	.67855	.87331	1.01125	1.19192	.83480	.70970	.68015
November.....	.58994	.49081	.51713	.71604	.85890	1.01125	1.27924	.77734	.68234	.65177
December.....	.57759	.49380	.54971	.75765	.85960	1.01125	1.31976	.64774	.65760	.63825
Average.....	.59791	.54820	.49853	.65664	.81426	.96776	1.11122	1.00900	.62654	.67521

Month	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932
January.....	\$0.65668	\$0.63447	\$0.68447	\$0.67795	\$0.55795	\$0.57135	\$0.57019	\$0.45000	\$0.29423	\$0.29780
February.....	.64313	.64359	.68471	.66773	.57898	.57016	.56210	.43193	.26773	.30136
March.....	.67556	.63957	.67808	.65880	.55306	.57245	.56346	.41654	.29192	.29822
April.....	.66855	.64139	.66899	.64409	.56399	.57395	.55668	.42428	.28279	.28298
May.....	.67043	.65524	.67580	.65075	.56280	.60298	.54125	.40736	.27650	.27755
June.....	.64861	.66690	.69106	.65481	.56769	.60019	.52415	.34595	.27250	.27466
July.....	.63015	.67159	.69442	.64793	.56360	.59215	.52510	.34346	.28255	.26700
August.....	.62793	.68519	.70240	.62380	.54718	.58880	.52579	.35192	.27524	.27986
September.....	.64203	.69350	.71570	.60580	.55445	.57536	.51042	.36315	.28180	.28182
October.....	.63649	.70827	.71106	.54505	.56035	.59087	.49913	.35846	.29538	.....
November.....	.63818	.69299	.69223	.54141	.57474	.57953	.49614	.35908	.32223	.....
December.....	.64705	.68096	.68889	.53466	.57957	.57335	.48475	.32635	.30120	.....
Average.....	.64873	.66781	.69065	.62107	.56370	.58176	.52993	.38154	.28701	.....

¹ See p. 20 for definition.

Source: Handy and Harman; March to September, 1932, calculated by Bureau of the Mint.

APPENDIX 4.—NATIONAL METAL EXCHANGE RULES GOVERNING SILVER TRADING

The rules and by-laws of the National Metal Exchange (Inc.), of New York, governing trading in silver futures were as follows in June, 1932:

Tenderable Silver

SEC. 40-D. In fulfillment of every contract of silver, the seller must deliver 25,000 ounces (2 per cent more or less) of bar silver in usual commercial large bars only, assaying not less than 99.9 fineness and made up of one or more of the officially listed brands or markings as provided in section 42-B of these by-laws, current at the date of delivery of such silver.

Official List of Brands or Markings of Silver Bars

SEC. 42-B. There shall be on file in the office of the secretary of the exchange descriptions and/or replicas of the brands or markings of silver bars which may be delivered against National Metal Exchange silver contract, and said official list shall at all times be available to members for inspection.

Removal of Silver Brand or Marking from Official List

SEC. 43-B. If a majority of the board of governors shall at any time determine that the metallurgical assay of any silver bars bearing a brand or marking on the official list (as provided in section 42-B of these by-laws), has depreciated below 99.9 fineness, thereupon the board of governors may exclude said brand or marking from the official list unless deliveries of bars bearing said brand or markings are accompanied by certificates of analysis of one of the official assayers of the exchange showing a silver fineness of 99.9. Any brand or marking so affected by decision of the board of governors shall be posted upon the bulletin board of the exchange and the official list shall indicate the limitation upon deliveries of said brand or marking. The limitation upon deliveries of such brand or marking shall not be deemed to affect the amount of money to be paid or the grade or quality of silver to be delivered under the silver contract, and shall be binding upon all such contracts entered into before, as well as after, the adoption of such changes, anything in these by-laws to the contrary notwithstanding.

Assayers

SEC. 44. The board of governors of the exchange shall appoint three assayers, who shall be designated as advisory assayers for the exchange. Said advisory assayers shall assist the board of governors in determining the maintenance of the integrity of the brands of tin, silver, and copper tenderable against exchange contracts and the metallurgical assay of said brands. In the event that the metallurgical assay of any of the tenderable brands shall be questioned, the board of governors shall refer the matter to said advisory assayers for a report to assist the board in its determination.

The board of governors of the exchange shall appoint one or more other assayers whose duties shall be fixed by the by-laws, rules, and regulations of the exchange. Such assayers shall be designated as official assayers for the exchange.

Licensed Warehouses and Vaults

SEC. 45. Warehouses and vaults may be licensed and/or designated for the storage of metals upon the recommendation of the committee on warehousing and with the approval of the board of governors.

Warehouses and vaults licensed and/or designated shall give such bonds to the exchange as may be required by the board of governors and shall pay to the exchange such annual fee as the board of governors may fix in its discretion.

A license granted to or a designation of a warehouse and vault may be canceled at any time by a written notice of intention to cancel served upon said warehouse and vault at least 30 days before the date therein specified as the date of cancellation, whereupon the pro rata amount of the fee paid, if any, shall be refunded.

Each licensed or designated warehouse shall on demand furnish to the secretary of the exchange daily a list of all tin and copper delivered to and removed from the warehouse on the previous day.

Warehouse or Vault Receipts for Silver

SEC. 47-B. After silver has been placed in licensed or designated warehouse or vault, negotiable warehouse or vault receipts stating the brand or markings, serial numbers, and the number of bars, shall be issued to its owners. Receipts shall be lettered or numbered consecutively by each warehouse or vault and no two receipts shall bear the same letter or number.

Storage of Tin, Silver, and Copper

SEC. 48. For purposes of delivery of tin, silver, and copper upon contract by warehouse or vault receipts, one warehouse or vault shall be understood to mean a single warehouse or vault; or, a number of contiguous warehouses or vaults comprising one system of warehouses or vaults under one name or management; or warehouses or vaults or systems of warehouses or vaults that are in juxtaposition to each other, though bearing different names, when such warehouses or vaults are adjoining and contiguous to each other and are all managed or operated by one firm or warehouseman.

Delivery of Silver

SEC. 49-D. (a) Silver may be delivered on the National Metal Exchange (Inc.) silver contract from any warehouse or vault in the Borough of Manhattan, city of New York, licensed and/or designated by the exchange specifically for the storage of silver, and may not be delivered except from such warehouse or vault. Each contract unit shall be delivered from a single warehouse or vault. Only whole bars may be delivered.

(b) Negotiable warehouse or vault receipts as provided in these by-laws, signed by the warehouseman, indorsed by the member in whose favor they are drawn (each indorsement shall be witnessed) and accompanied by invoice, shall be a good delivery in fulfillment of contract for future delivery and shall be deemed a liquidation of the contract on which such delivery is made. The member receiving the same shall return the transferable notice to the member making delivery. The delivery of silver shall be considered complete when warehouse or vault receipt and invoice as above provided shall have been delivered to the receiver. All silver must be delivered to the receiver with handling and storage charges paid up to and including the day of delivery.

(c) Written notice of the holding of a transferable notice shall be given by the holder thereof, before 4 o'clock p. m. on the day the transferable notice is issued, to the member issuing the transferable notice, and shall be accepted as a legal demand for the silver. The issuer of the notice, shall before 2 o'clock p. m. on the day of delivery, tender to the member holding said transferable notice the warehouse or vault receipt in the manner and form hereinbefore provided. An invoice for the silver stating brand or markings, serial numbers of the bars, weights stamped thereon, and the name of the warehouse or vault in which same are stored, shall be rendered before 11 o'clock a. m. on that day, provided, however, that when the delivery of documents become due upon the last delivery day of any month, bills shall be rendered for same at or before 1 o'clock p. m. on that day and payment shall be made as hereinafter provided by 2.30 o'clock p. m. of the same day.

(d) The member receiving the warehouse or vault receipt shall at once make payment to the member presenting the same, by a certified check drawn upon a bank in the city of New York.

(e) The receiver shall not be required to accept any tender varying more than 2 per cent above or below 25,000 ounces.

(f) Payment shall be made upon the basis of the weight stamped upon the bars delivered. Any claim for weight shortage must be made within 24 hours after delivery is completed.

Form of Contract for Silver

SEC. 51-B. All contracts for the future delivery of silver shall be in the following form:

NATIONAL METAL EXCHANGE (INC.) SILVER CONTRACT,

New York, N. Y. 19

A. B. & Co. have this day bought and agreed to deliver to sold receive from C. D. 25,000 ounces (2 per cent more or less) of bar silver in usual commercial large bars assaying not less than 99.9 fineness and bearing one of

the brands or markings listed upon the official list of the exchange, at the price of ----- cents per ounce in accordance with the provisions of the by-laws, rules and regulations of the National Metal Exchange (Inc.), deliverable from licensed or designated warehouse or vault in the Borough of Manhattan, city of New York, between the first and last delivery days of ----- inclusive, the delivery within such time to be at seller's option, upon notice to buyer as provided in accordance with the by-laws, rules, and regulations of the National Metal Exchange (Inc.).

Either party may call for a margin, as the variations of the market for like deliveries may warrant, which margin shall be kept good.

For and in consideration of \$1 to the undersigned, in hand paid, receipt whereof is hereby acknowledged, the undersigned accepts this contract with all its obligations and conditions.

Verbal [oral] contracts (which shall always be presumed to have been made in the approved form) shall have the same standing, force and effect as written ones, if notice in writing of such contracts shall have been given by one of the parties thereto to the other party during the day on which such contract is made.

Contract Slips

SEC. 52. Each seller and buyer shall, on the day upon which the transaction takes place, sign a contract or slip therefor and deliver the same to the other party to the transaction.

All contracts or slips shall be signed by members themselves or by their firms, or by attorneys having requisite authority under these by-laws.

A member of his firm may give power of attorney authorizing signature of his or the firm's name to contracts or slips which power shall be duly executed in such form as may be prescribed by the board of governors, and shall be valid and binding upon said member or his firm until formally revoked.

All contracts or slips shall be signed with the full name of the member or his firm, and, when signed by attorney, his name shall be written in full and as attorney.

All powers given shall be filed with and retained by the secretary, and the person to whom the power is given shall attach his signature to it.

All powers given shall be announced from the rostrum by the secretary at the close of the exchange on the day the power is executed and posted on the bulletin for five days thereafter. The same procedure shall apply to the revocation of any power.

Commission Law for Silver

SEC. 53-B. The following rates of commission are the lowest that may be charged on each contract for future delivery of silver:

(a) For each 25,000 ounces bought or sold for any person residing in the United States or Canada, who is not a member of the exchange, \$12.50 when the price of such transaction does not exceed 40 cents per ounce; and when the price of such transaction exceeds 40 cents per ounce, an additional \$2.50 for each 10 cents or portion of 10 cents of such excess in price up to a price of 60 cents per ounce; for all transactions in excess of 60 cents per ounce, the commission shall be \$20.¹

(b) For members of the exchange residing within the United States and Canada one-half of the above rates of commission shall be charged.

(c) For members and nonmembers residing outside of the United States and Canada a charge equal to the actual cost of cables and telegrams with a minimum charge of \$1.25 shall be made, in addition to the above rates.

(d) For each 25,000 ounces bought or sold by one member for another, giving up his principal on the day of the transaction, \$1.50 when the price of such transaction does not exceed 40 cents per ounce; and when the price of such transaction exceeds 40 cents per ounce, an additional 25 cents for each 10 cents or portion of 10 cents of such excess in price; for all transactions in excess of 60 cents per ounce the rate shall be \$2.25.

(e) \$1.50 for each contract bought and sold where one member clears for another member transactions made or initiated during the day by him personally or for his account while present on the floor of the exchange. No member shall be entitled to the privilege of clearance of contracts for his account, unless the purchase and sale were personally made by him, or the transactions were initiated

¹ In the open market in New York the commission charged is \$30 per 100,000 ounces, payable according to arrangement.

and the orders both of purchase and sale were given by him while actually present on the floor of the exchange. The foregoing clearance charge is exclusive of floor brokerage.

(f) Upon the delivery or receipt of silver or when a contract is settled by giving or receiving a transferable notice in fulfillment thereof, and no financing is done, a commission charge is not compulsory.

(g) Where silver is delivered or received in fulfillment of a contract for future delivery for account of a customer and where advances are made in connection therewith against such transactions, an additional charge of not less than \$25 per contract shall be made for such financing over and above interest and other costs.

The above-mentioned rate shall be in each case the minimum commission that may be charged by any member of the exchange and shall be absolutely net and free of all and any rebate, in any way, shape, or manner; nor shall any bonus or pro rata percentage of commission be given or allowed to any clerk or individual for business procured or sought for any member of the exchange.

For violating or evading, or seeking, offering, proposing, promising or agreeing to violate or evade the provisions of this section in any way, shape, or manner whatsoever, whether by an agreement, arrangement, or understanding, expressed or implied, either directly or indirectly, in person or through any firm of which a member may be or may appear to be a partner or officer, or through any agent or agents or otherwise, the penalty shall be upon conviction for the first offense, suspension, and for the second offense, expulsion.

Import Duties and Taxes

SEC. 54. Whenever an import duty of internal tax is levied upon metal, such duty or tax shall be assumed and be payable by the buyer.

Transfer Notices

Every notice of delivery for silver issued by the seller pursuant to a contract for future delivery shall be issued to the buyer before the opening of the exchange on the first business day prior to the day of delivery, except that notices may be issued on Fridays for delivery on Mondays and that when delivery is to be made on the last delivery day of the month, notice of delivery shall be issued by the seller not later than 10 minutes after 12 o'clock noon on the first business day prior to the day of delivery.

Every notice of delivery issued by the seller pursuant to National Metal Exchange Silver Contract, shall be for 25,000 ounces (2 per cent more or less) and shall be in form as follows:

TRANSFERABLE NOTICE FOR SILVER

NEW YORK, ----- 19----

(0:00 o'clock)

To -----

Take notice that on ----- 19---- we shall deliver to you 25,000 ounces (2 per cent more or less) of bar silver assaying not less than 99.9 fineness, bearing the brand or marking of ----- from warehouse or vault ----- located at ----- at the transferable notice price of ----- cents per ounce in accordance with the terms of our silver contract sale to you.

We pledge ourselves to deliver on the day specified for delivery, to the last holder hereof, documents as provided in the by-laws and rules of the exchange, upon written notice of the holding of this notice, given to us by the last acceptor hereof before 4 o'clock p. m. on the day this notice is issued, except that the transferee who becomes the last acceptor of this notice after 4 o'clock p. m. on the last notice day for delivery in the current month must notify us before 9 o'clock a. m. on the next business day.

This notice is to be delivered to us simultaneously with our delivery of the documents referred to above, to the last acceptor hereof.

(L. Bros.)

CONDITIONS

Each of the acceptors hereto agrees that the last acceptor hereof will, before 4 o'clock p. m. on the day this notice is issued, or as otherwise required, give written notice of the holding of this notice to the issuer hereof, and will on the day specified for delivery, receive from the said issuer the documents as provided

in the by-laws and rules, and make payment against them all in accordance with the provisions of the by-laws and rules of the National Metal Exchange (Inc.).

It is further agreed that each acceptor hereto shall continue all his (or their) liability to each other for the fulfillment of the contract until all documents required by the by-laws and rules of the exchange for the delivery of silver against silver contract shall have been received by the last acceptor hereto from the issuer, and this notice shall have been returned to the issuer, at which time all responsibilities of intermediate parties shall cease.

(H. BROS.)

* * * * *

The difference between the price of every contract on which such notice is tendered and the price at which the notice is issued shall be paid on the day following the date of the notice.

The failure on the part of the holder of any notice to notify the issuer thereof, as provided therein, shall subject him to a penalty of \$50 for each notice, to be paid to the issuer thereof, the contract to remain in full force.

The secretary shall, at the close of the exchange on the day previous to each notice day, post upon the bulletin of the exchange the price at which transferable notices shall be issued on the following day. The transferable notice price shall be the approximate closing price of the current month on the day previous to notice day. Metal shall be paid for at the transferable notice price plus or minus the difference between said price and the settlement price of the day previous to delivery as determined by the National Metal Clearing Association (Inc.).

APPENDIX 5.—UNITED STATES FOREIGN TRADE IN SILVER

The following tables show United States foreign trade in silver, by years, since 1873; United States exports to the United Kingdom and Asia since 1900; United States foreign trade in 1930 by leading customs districts and principal countries; and United States foreign trade in silver since the beginning of 1929, by months.

A. VALUE OF UNITED STATES FOREIGN TRADE IN SILVER, 1873-1931 [In millions of dollars]

Calendar year	Exports			Imports	Calendar year	Exports			Imports
	Domestic	Foreign	Total ¹			Domestic	Foreign	Total ¹	
1873.....	32	7	38	9	1904.....	40	10	50	26
1874.....	25	5	30	8	1905.....	43	14	58	36
1875.....	22	4	26	9	1906.....	52	9	61	44
1876.....	19	6	25	11	1907.....	50	11	62	46
1877.....	23	6	29	12	1908.....	51	1	52	42
1878.....	13	5	18	18	1909.....	56	2	58	46
1879.....	15	7	22	14	1910.....	54	4	57	46
1880.....	7	5	12	12	1911.....	60	6	66	44
1881.....	13	4	17	9	1912.....	67	5	72	48
1882.....	12	6	17	9	1913.....	60	3	63	36
1883.....	15	10	25	13	1914.....	48	4	52	26
1884.....	18	11	30	16	1915.....	47	6	54	34
1885.....	22	11	33	18	1916.....	65	6	71	32
1886.....	16	11	27	17	1917.....	78	6	84	53
1887.....	20	8	28	17	1918.....	240	13	253	71
1888.....	23	7	30	16	1919.....	208	31	239	89
1889.....	27	14	41	19	1920.....	85	29	114	88
1890.....	16	10	27	22	1921.....	25	27	52	63
1891.....	13	15	28	18	1922.....	25	37	63	71
1892.....	20	16	36	22	1923.....	40	32	72	74
1893.....	32	15	46	18	1924.....	91	19	110	74
1894.....	39	8	47	10	1925.....	82	17	99	65
1895.....	47	7	54	25	1926.....	75	18	92	70
1896.....	57	7	64	30	1927.....	60	15	76	55
1897.....	51	8	59	33	1928.....	64	23	87	68
1898.....	48	6	54	29	1929.....	63	21	83	64
1899.....	51	3	53	31	1930.....	44	11	54	43
1900.....	59	7	66	40	1931.....	22	5	26	27
1901.....	52	4	56	31					
1902.....	45	4	49	26					
1903.....	33	7	41	24					
					Total.....	2,779	628	3,405	2,069

¹ The items being abbreviated, their summation does not in all cases agree with the totals.

THE SILVER MARKET

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B. UNITED STATES EXPORTS OF REFINED SILVER COMPARED WITH TOTAL SILVER EXPORTS TO UNITED KINGDOM AND ASIA, 1900-1931

(In millions of dollars)

Calendar year	Refined silver				All silver	Calendar year	Refined silver				All silver
	United Kingdom	Asia	All other countries	Total			United Kingdom	Asia	All other countries	Total	
1900	52	6	1	58	66	1917	27	50	3	80	84
1901	45	5	2	51	56	1918	31	203	9	242	253
1902	34	7	4	45	49	1919	14	182	14	210	239
1903	33	2	4	39	41	1920	5	83	6	94	114
1904	39	5	2	46	50	1921	12	30	3	45	52
1905	43	6	2	51	58	1922	11	45	1	57	63
1906	44	4	1	50	61	1923	6	62	1	69	72
1907	43	3	6	51	62	1924	23	80	2	105	110
1908	40	6	5	51	52	1925	8	80	6	95	99
1909	44	8	4	56	58	1926	4	81	4	89	92
1910	45	7	3	56	57	1927	2	55	3	60	76
1911	51	9	4	65	66	1928	1	80	4	85	87
1912	51	11	8	71	72	1929	2	60	3	63	83
1913	41	13	8	62	63	1930	2	47	2	51	54
1914	35	6	8	49	52	1931	6	16	2	24	26
1915	39	8	3	50	54						
1916	52	12	3	67	71						
						Total..	885	1,272	129	2,285	2,492

¹ The items being abbreviated, their summation does not in all cases agree with the totals.

Source: Annual Report of the Director of the Mint for the fiscal year ended June 30, 1931, pp. 114 and 86.

C. UNITED STATES FOREIGN TRADE IN SILVER IN 1930, BY CUSTOMS DISTRICTS

[All figures in thousands]

IMPORTS

Country of origin	New York		San Francisco		San Antonio		All United States		
	Ounces ¹	Total recorded value ²	Ounces ¹	Total recorded value ³	Ounces ¹	Total recorded value ⁴	Ounces ¹	Value of silver imported in form of ore or bullion	Total recorded value of silver imported
Mexico	12,005		1,431		27,254	\$10,516	60,414	\$23,415	\$24,897
Canada	3		214				11,883	4,695	6,117
Peru	12,906		1,573				14,520	5,908	5,908
Chile	3,166		1,066				4,848	1,829	1,831
Honduras	2,690						2,691	1,026	1,026
Belgian Congo	1,687						1,839	726	726
Bolivia	1,702						1,802	678	678
Java			1,160				1,161	492	492
France	151						154	57	64
Ecuador	117						115	47	55
Other countries	622		261				776	304	967
Total	35,049	\$14,340	5,705	\$2,378	27,254	10,516	100,203	39,177	42,761

¹ Includes silver in form of ore and base bullion, and refined bullion, but does not include coin, which is not recorded on the basis of the value of its silver content.

² Includes ore and bullion to value of \$13,706,000 and coin at face value.

³ Includes ore and bullion to value of \$2,368,000 and coin at face value.

⁴ Includes ore and bullion to value of \$10,490,000 and coin at face value.

THE SILVER MARKET

C. UNITED STATES FOREIGN TRADE IN SILVER IN 1930, BY CUSTOMS DISTRICTS—
Continued

EXPORTS

Country of destination	New York			San Francisco			All United States		
	Ounces ¹	Value of other than coin	Total recorded value	Ounces ¹	Value of other than coin	Total recorded value	Ounces ¹	Value of exported silver other than coin	Total recorded value of silver exported
China:									
Domestic ²	46,598			22,053			68,651	\$26,560	\$26,560
Foreign.....	4,977			8,042			13,180	5,309	5,309
Total.....	51,575			30,095			81,831	31,869	31,869
Hong Kong:									
Domestic ²				13,033			13,033	5,010	5,010
Foreign.....				2,234			2,203	888	888
Total.....				15,297			15,236	5,898	5,898
China and Hong Kong:									
Domestic ²	46,598			35,086			81,864	31,570	31,570
Foreign.....	4,977			10,306			15,383	6,197	6,197
Total.....	51,575			45,392			97,067	37,767	37,767
British India:									
Domestic ²	22,169			606			22,774	8,660	8,660
Foreign.....	2,386			101			2,386	889	889
Total.....	24,555			707			25,160	9,549	9,549
United Kingdom:									
Domestic ²	4,437			1			4,439	1,747	1,747
Foreign.....	853						854	307	307
Total.....	5,290			1			5,293	2,054	2,054
Germany:									
Domestic ²	2,639						2,637	973	973
Foreign.....									
Total.....	2,639						2,637	973	973
All countries:									
Domestic ²	75,931	\$29,068	\$29,103	35,693	\$13,918	\$13,918	112,901	43,504	43,550
Foreign.....	8,216	3,074	3,618	10,407	4,319	4,319	18,623	7,393	10,607
Grand total.....	84,147	32,142	32,721	46,100	18,237	18,237	131,524	50,897	54,157

¹ Includes silver in form of ore and base bullion, and refined bullion, but does not include coin, which is not recorded on the basis of the value of its silver content.

² "Domestic" silver is silver manufactured into bars in the United States, but is not necessarily silver mined in the United States.

NOTE.—Not shown in the table, but of considerable importance, are the imports through the Arizona customs district, 4,505,000 ounces, and the El Paso district, 2,615,000 ounces.

Source: Foreign Commerce and Navigation of the United States. Calendar Year 1930, pp. 2 and 3.

D. UNITED STATES FOREIGN TRADE IN SILVER, BY MONTHS, SINCE JANUARY, 1929
 (In millions of United States dollars)

Year and month	Imports		Exports			
	Mexico	All countries	China	Hong Kong	British India	All countries
1929						
January	5.5	8.3	7.0		0.8	8.3
February	3.1	4.5	5.4		.6	6.6
March	4.4	6.4	6.7		.3	7.8
April	2.4	4.0	3.9		.9	5.8
May	2.8	4.6	4.6		1.5	7.5
June	3.2	5.0	4.5		.4	5.4
July	3.2	4.7	4.0	1.7	.6	6.8
August	4.3	7.3	5.5	.5	.8	8.5
September	2.2	4.1	2.7	.6	.7	4.4
October	3.0	5.4	3.8		1.8	7.3
November	3.4	5.1	7.7		.7	8.7
December	2.9	4.5	6.0			6.4
Total	40.5	63.9	61.8	2.8	8.9	8.34
Monthly average	3.39	5.33	5.15	.23	.74	6.95
1930						
January	2.8	4.8	2.6	.1	2.5	5.9
February	2.8	3.9	4.3	.4	.3	5.3
March	3.1	4.8	3.3	1.0	.5	5.8
April	2.2	3.6	2.8	1.2	.2	4.6
May	2.2	3.5	3.4	.3	1.0	4.9
June	1.7	2.7	1.9	.3	.5	3.3
July	1.7	4.0	1.7	.4	1.0	3.7
August	1.7	3.5	2.7	.3	.9	4.5
September	1.8	3.5	2.9	.4	.1	3.9
October	1.8	3.3	2.4	1.1	.2	4.4
November	1.7	2.7	3.0	.3	.3	4.1
December	1.4	2.7	.8	.2	2.1	3.5
Total	24.9	42.8	31.8	5.9	9.6	54.2
Monthly average	2.08	3.57	2.65	.50	.80	4.52
1931						
January	1.8	2.9	.2		1.3	3.6
February	1.2	1.9	.4	.1	.2	1.6
March	1.1	1.8	.3			2.3
April	1.5	2.4	2.8		.1	3.2
May	1.1	2.6	1.0	.2	1.0	2.1
June	1.3	2.4	.8	.4	.7	1.9
July	1.0	1.6	1.2	.2	.5	2.3
August	2.0	2.7	.2	.1	.5	2.0
September	1.0	2.4	.2		.5	2.2
October	1.2	2.6	.6		.1	2.2
November	1.2	2.1			.5	.9
December	1.7	3.2	1.0		.4	2.2
Total	16.1	28.6	9.5	.9	6.1	26.5
Monthly average	1.34	2.38	.79	.08	.51	2.22
1932						
January	1.3	2.1	.5			1.6
February	1.2	2.0	.3		.1	.9
March	.9	1.8				1.0
April	.9	1.9	1.3	.1		1.6
May	.6	1.5	1.1			1.9
June	1.0	1.4	.9		.1	1.3
July	.7	1.3	.7			.8

Source: Compiled from Monthly Summary of Foreign Commerce of the United States, Part II. Slight discrepancies in some of the summations are due to abbreviation of the items. The figures for the latest 16 months in the table are subject to revision.

APPENDIX 6.—ADJUSTED PRICE OF SILVER

The following table, used as the basis for Figures 6, 7, and 8, on pages 28 and 29, shows the price of silver in cents per fine ounce since 1833. The first column of the table gives the level of wholesale prices of all commodities in the United States, expressed as a percentage of the 1926 price level. The second column carries the absolute price of silver in cents per fine ounce. The third column shows the value, in cents, of the commodities which an ounce of silver would buy. Thus, taking the 1833 figures, wholesale prices in the United States were 70.4 per cent of 1926 prices. In other words, a

dollar in 1833 bought 42 per cent more than in 1926. Hence, \$1.297, the 1833 price of an ounce of silver, in that year bought 42 per cent more of commodities than in 1926; 142 per cent of \$1.297 is \$1.842, as shown in the last column of the table.

PRICE OF SILVER ADJUSTED TO REFLECT CHANGES IN THE PURCHASING POWER OF THE GOLD DOLLAR, 1833-1931

Year	Index number of wholesale commodity prices in the United States ¹ (1926=100)	Price of silver in New York in cents per fine ounce ²	Adjusted price of silver, cents per fine ounce	Year	Index number of wholesale commodity prices in the United States ¹ (1926=100)	Price of silver in New York in cents per fine ounce ²	Adjusted price of silver, cents per fine ounce
1833	70.4	129.7	184.2	1883	64.6	110.9	171.7
1834	65.6	131.3	200.2	1884	60.5	111.2	183.8
1835	74.6	130.8	175.4	1885	56.6	106.4	187.9
1836	83.5	131.5	157.5	1886	56.0	99.9	178.5
1837	82.8	130.5	157.6	1887	56.4	97.9	173.5
1838	79.4	130.4	164.2	1888	57.4	94.3	164.2
1839	83.5	132.3	158.4	1889	57.4	93.6	163.0
1840	71.1	132.3	186.2	1890	56.2	105.5	187.4
1841	70.5	131.6	186.7	1891	55.8	99.0	177.4
1842	65.7	130.3	198.4	1892	52.2	87.6	167.8
1843	61.8	129.7	210.0	1893	53.4	78.2	146.4
1844	62.1	130.4	210.0	1894	47.9	64.0	133.4
1845	62.6	129.8	207.3	1895	48.8	66.3	135.8
1846	64.8	130.0	200.7	1896	46.5	68.2	146.6
1847	64.9	130.8	201.6	1897	46.6	60.8	130.4
1848	61.8	130.4	211.0	1898	48.5	59.1	121.8
1849	60.1	130.9	217.8	1899	52.2	60.5	115.9
1850	62.3	131.6	211.2	1900	56.1	62.1	110.7
1851	64.5	133.7	207.3	1901	55.3	59.7	107.9
1852	62.5	132.6	212.3	1902	58.9	52.8	89.6
1853	66.4	134.8	203.0	1903	59.6	54.2	91.0
1854	68.8	134.8	195.9	1904	59.7	57.8	96.8
1855	68.9	134.4	195.0	1905	60.1	61.0	101.5
1856	68.9	134.4	195.0	1906	61.8	67.4	109.0
1857	68.5	135.3	197.5	1907	65.2	66.0	101.2
1858	62.0	134.4	216.8	1908	62.9	53.5	85.0
1859	61.0	136.0	223.0	1909	67.6	52.2	77.2
1860	60.9	135.2	222.1	1910	70.4	54.2	77.0
1861	61.3	133.3	217.4	1911	64.9	54.0	83.2
1862	70.0	134.6	192.4	1912	69.1	62.0	89.7
1863	62.4	134.5	215.6	1913	69.8	61.2	87.7
1864	74.6	134.5	180.3	1914	68.1	56.3	82.7
1865	61.1	133.8	219.0	1915	69.5	51.1	73.5
1866	83.0	133.9	161.3	1916	85.5	67.2	78.6
1867	77.9	132.8	170.5	1917	117.5	84.0	71.5
1868	70.5	132.6	188.1	1918	131.3	98.4	74.9
1869	69.0	132.5	192.0	1919	138.6	112.1	80.9
1870	71.5	132.8	185.7	1920	154.4	101.9	66.0
1871	74.8	132.6	177.3	1921	97.6	63.1	64.7
1872	77.5	132.2	170.6	1922	96.7	67.9	70.2
1873	74.3	129.8	174.7	1923	100.6	65.2	64.8
1874	72.7	127.2	174.9	1924	98.1	67.1	68.4
1875	69.1	123.9	179.3	1925	103.5	69.4	67.1
1876	63.8	115.0	180.2	1926	100.0	62.4	62.4
1877	63.6	119.4	187.7	1927	95.4	56.7	59.4
1878	60.8	115.4	189.8	1928	97.7	58.5	59.9
1879	58.8	112.1	190.7	1929	96.5	53.3	55.2
1880	65.1	113.9	174.9	1930	86.3	38.5	44.4
1881	64.4	112.8	175.1	1931	71.1	28.7	40.4
1882	66.1	113.9	172.3				

¹ The index numbers from 1890 to 1931 are a continuous series computed by the same method throughout and kept up to date by the Bureau of Labor Statistics of the United States Department of Labor. The numbers here given for the years 1840 to 1889 are from Wholesale Prices, Wages, and Transportation (Senate Report No. 1394, Finance Committee, 2d sess., 52d Cong., Pt. 1, p. 99). As originally published, these figures were computed with 1860 as 100. They are here changed to 1926 as 100 through the figure for 1890, which is the first year included in both series of index numbers. In using these index numbers it should be borne in mind that the figures for 1840 to 1899 are unweighted, while those for later years are the regular weighted series of the Bureau of Labor Statistics. The index numbers for the years 1833 to 1839, inclusive, are taken from Bureau of Labor Statistics Bulletin No. 543. The index numbers for the period 1862-1878 are based on the gold equivalent of commodity prices.

² From Annual Report of the Director of the Mint, 1931, pp. 125-128. The price from 1833 to 1873, inclusive, is the equivalent in United States gold coin per fine ounce (1.000 fine) of the average price of bar silver in London per standard ounce (0.925 fine) taken at par of exchange. The price recorded by the Director of the Mint is at present the "official" price "fixed" daily by Handy and Harman, New York bullion dealers. It is generally, although not always, $\frac{1}{16}$ to $\frac{1}{4}$ cent below the actual market price. (See p. 20.)

APPENDIX 7.—BRITISH INDIAN SILVER STATISTICS

A. INDIA'S FOREIGN TRADE IN GOLD AND SILVER (COIN AND BULLION)
1873-74 TO 1931-32

[Gold, 1873-74 to 1886-87 in millions of standard ounces, and thereafter in millions of fine ounces; silver throughout in millions of standard ounces 0.925 fine]

Fiscal year ended March 31	Gold			Silver		
	Im-ports	Ex-ports	Net imports	Im-ports	Ex-ports	Net imports
1874			0.3			8.7
1875			.4			16.3
1876			.4			5.5
1877			.1			25.2
1878			.1			51.4
1879			.2			13.9
1880			.4			27.6
1881			.8			13.6
1882			1.0			18.9
1883			1.0			26.2
1884			1.1			22.4
1885			1.0			25.4
1886			.5			40.7
1887			.4			25.1
1888	0.6	(1)	.5	37.9	6.0	32.8
1889	.5	0.1	.5	37.8	5.4	32.4
1890	.9	.1	.8	43.9	5.3	38.6
1891	1.2	.2	1.0	56.2	4.7	51.5
1892	.7	.3	.4	38.2	5.8	32.3
1893	.3	.7	-.5	54.2	8.7	45.5
1894	.5	.4	.1	60.3	6.0	54.3
1895	.2	.9	-.7	32.6	5.6	27.0
1896	.7	.4	.3	34.1	7.1	27.0
1897	.7	.3	.3	37.5	11.6	25.9
1898	1.1	.4	.7	68.5	24.3	44.3
1899	1.4	.4	1.0	49.2	26.1	23.2
1900	1.9	.4	1.6	50.7	32.0	18.6
1901	2.0	1.9	.1	64.7	15.3	49.4
1902	1.4	1.1	.3	66.7	27.7	39.0
1903	2.2	.8	1.4	75.6	32.3	42.3
1904	3.3	1.8	1.6	104.3	25.1	79.2
1905	3.6	2.1	1.5	98.1	23.8	74.3
1906	2.4	2.5	-.1	88.9	4.5	84.3
1907	3.0	.6	2.4	125.9	7.7	118.2
1908	3.4	.6	2.8	106.4	8.4	97.9
1909	1.3	.7	.6	85.0	11.3	73.7
1910	4.1	.6	3.5	75.5	14.5	61.0
1911	4.5	.7	3.8	69.3	14.4	54.9
1912	6.9	.6	6.2	70.4	38.1	32.2
1913	6.8	1.3	5.6	107.2	16.1	91.1
1914	4.6	.8	3.7	79.8	8.7	71.1
1915	1.7	.5	1.2	64.2	8.4	55.8
1916	.8	1.1	-.3	39.8	6.9	32.9
1917	2.3	(2)	2.3	117.0	24.8	92.2
1918	4.9	.7	4.2	88.8	14.3	74.5
1919	.4	1.3	-.9	241.7	4.7	237.0
1920	7.8	2.2	5.6	101.1	4.1	96.9
1921	3.7	2.9	.8	43.2	21.0	22.2
1922	1.8	2.0	-.3	73.8	9.7	64.1
1923	5.9	(3)	5.9	96.5	10.4	86.1
1924	4.3	(4)	4.3	107.8	14.6	93.3
1925	12.0	.1	11.9	122.3	20.0	102.4
1926	6.2	.1	6.1	108.3	15.0	93.4
1927	3.4	(5)	3.4	134.0	9.8	124.2
1928	3.2	(6)	3.2	107.7	14.8	93.8
1929	3.8	(7)	3.8	103.7	39.9	63.8
1930	2.5	(8)	2.5	97.5	35.0	62.5
1931	2.3	.1	2.2	111.2	30.7	80.5
1932	.5	8.1	7.6	32.4	43.5	11.1

¹ 41,646 ounces.

³ 19,040 ounces.

⁵ 17,000 ounces.

⁷ 3,144 ounces.

² 17,523 ounces.

⁴ 10,000 ounces.

⁶ 6,000 ounces.

⁸ 1,685 ounces.

NOTE.—The quantities in the column "net imports" for both gold and silver for the years 1873-74 to 1886-87 are estimated only, deduced from the declared values of the trade for those years by the following process: For gold, the rupee value of the monthly net imports was converted into sterling at the average rate of exchange in each month, and this sterling value was then divided by the English mint price of gold (£3 17s. 10½d.). For silver, the average price of 107 rupees per 100 tolas, or 285.33 rupees per 100 ounces, was taken as the basis of the value of the annual imports.

The items being abbreviated, not all the summations agree exactly with the totals shown.

Source: Commission of Gold and Silver Inquiry, U. S. Senate, Serial 3, rev., p. 155; Statistical Abstract for British India from 1919-20 to 1928-29; and thereafter from monthly Accounts Relating to Trade and Navigation of British India. In the first-mentioned source the gold statistics for 1887-88 to 1921-22 are stated to be in British standard ounces. This is apparently in error, as the published monthly returns show the gold movements in fine ounces and the silver in standard ounces.

B. INDIA'S FOREIGN TRADE IN SILVER AND GOLD, 1929-1932¹

Date	Silver (thousands of standard ounces)			Gold (thousands of fine ounces)		
	Imports	Exports	Net imports	Imports	Exports	Net imports
1929						
January:						
Private.....	7,379.6	807.8	} 6,571.7	{ 238.0	0.1	237.9
Government.....						
February:						
Private.....	8,339.3	56.4	} 8,282.8	{ 380.5		380.5
Government.....						
March:						
Private.....	3,782.1	183.7	} 1,650.0	{ 652.5	.6	651.9
Government.....	.2	1,948.5				
April:						
Private.....	5,695.9	102.1	} 276.5	{ 320.4	.8	319.6
Government.....		5,317.2				
May:						
Private.....	7,855.3	205.0	} 6,136.0	{ 305.8		305.8
Government.....	.2	1,514.5				
June:						
Private.....	8,953.3	578.8	} 5,650.9	{ 177.8		177.8
Government.....		2,723.7				
July:						
Private.....	6,476.6	408.5	} 4,943.8	{ 205.6		205.6
Government.....		1,124.3				
August:						
Private.....	7,435.9	181.4	} 5,690.0	{ 137.7	.6	137.1
Government.....		1,564.4				
September:						
Private.....	5,509.1	757.4	} 3,376.3	{ 167.0		167.0
Government.....		1,375.5				
October:						
Private.....	6,457.8	377.7	} 4,988.5	{ 153.8		153.8
Government.....		1,091.6				
November:						
Private.....	7,176.7	1,085.4	} 3,991.0	{ 215.6		215.6
Government.....	18.6	2,118.8				
December:						
Private.....	4,691.9	3,544.9	} -1,165.7	{ 224.4	.1	224.3
Government.....		2,312.7				
Total, 1929:						
Private.....	79,753.5	8,289.1	} 71,464.1	{ 3,179.1	2.2	3,176.9
Government.....	19.0	21,091.2				
Grand total, 1929	79,772.5	29,380.3	50,391.9	3,179.1	2.2	3,176.9
1930						
January:						
Private.....	8,521.4	1,950.4	} 5,771.3	{ 260.5	.2	260.3
Government.....		799.7				
February:						
Private.....	19,704.7	244.6	} 17,606.4	{ 190.3		190.3
Government.....		1,853.7				
March:						
Private.....	8,091.2	14.1	} 5,246.2	{ 166.5		166.5
Government.....	189.1	3,730.0				
April:						
Private.....	10,026.2	1,129.6	} 8,242.7	{ 285.4	.5	284.9
Government.....		653.8				
May:						
Private.....	11,296.4	594.1	} 10,733.8	{ 312.3		312.3
Government.....	31.5					
June:						
Private.....	10,456.7	37.9	} 10,418.8	{ 433.6		433.6
Government.....						
July:						
Private.....	7,802.8	41.6	} 7,761.2	{ 165.9		165.9
Government.....						
August:						
Private.....	13,012.4	5,422.6	} 5,930.2	{ 646.1	.1	646.0
Government.....		1,659.6				
September:						
Private.....	5,520.0	3,867.6	} 1,652.4	{ 176.0		176.0
Government.....						
October:						
Private.....	990.2	2,520.1	} -3,692.6	{ 47.6		47.6
Government.....		2,162.7				
November:						
Private.....	3,396.1	.1	} 1,772.5	{ 65.0		65.0
Government.....		1,623.5				

¹ The figures through January, 1931, are revised. Subsequent figures are preliminary.² There is an undisclosed error of 800,000 ounces in the March, 1930, figures.

B. INDIA'S FOREIGN TRADE IN SILVER AND GOLD, 1929-1932—Continued

Date	Silver (thousands of standard ounces)			Gold (thousands of fine ounces)		
	Imports	Exports	Net imports	Imports	Exports	Net imports
1930						
December:						
Private.....	3,557.3	1,645.6	-2,696.7	41.5	8.0	33.5
Government.....		3,804.3				
Total, 1930:						
Private.....	102,285.4	17,468.3	68,751.2	2,790.7	8.8	2,781.9
Government.....	220.6	16,287.3				
Grand total, 1930.....	102,506.0	33,755.6	68,751.2	2,790.7	8.8	2,781.9
1931						
January:						
Private.....	9,626.6	21.7	7,112.8	43.9	57.1	-13.2
Government.....	4	1,892.5				
February:						
Private.....	32,724.6	3.0	30,851.0	42.4		42.4
Government.....		1,870.6				
March:						
Private.....	4,152.3	2.5	2,413.8	70.2	21.4	48.8
Government.....		1,736.0				
April:						
Private.....	3,006.9	10.4	2,996.5	29.6		29.6
Government.....						
May:						
Private.....	4,163.9	9.9	4,181.3	33.4		33.4
Government.....	27.4					
June:						
Private.....	4,591.7	37.8	2,390.7	28.2	113.7	-85.5
Government.....		2,163.3				
July:						
Private.....	2,682.0	5,443.5	-4,943.0	37.8	75.3	-37.5
Government.....		2,181.5				
August:						
Private.....	2,297.6	2,038.4	-5,302.0	40.6	51.1	-10.5
Government.....		5,561.2				
September:						
Private.....	4,778.3	1,906.5	-5,295.0	59.2	50.7	8.4
Government.....		8,166.7				
October:						
Private.....	2,743.0	586.3	2,156.7	75.3	1,339.1	-1,263.8
Government.....						
November:						
Private.....	2,006.3	335.6	1,670.8	38.9	1,210.4	-1,171.5
Government.....						
December:						
Private.....	6,795.7	360.8	4,272.9	40.1	2,251.6	-2,211.5
Government.....		2,162.0				
Total, 1931:						
Private.....	78,968.9	10,756.4	42,506.5	539.6	5,170.4	-4,630.9
Government.....	27.8	25,733.8				
Grand total, 1931.....	78,996.7	36,490.2	42,506.5	539.6	5,170.4	-4,630.9
1932						
January:						
Private.....	1,074.4	776.8	-5,145.9	26.9	1,189.3	-1,162.4
Government.....		5,443.5				
February:						
Private.....	345.5	1,220.4	-5,239.0	19.6	874.5	-854.9
Government.....		4,364.1				
March:						
Private.....	263.1	748.0	-508.6	20.5	923.7	-903.2
Government.....		23.7				
April:						
Private.....	409.8	540.0	-135.0	15.7	587.2	-571.4
Government.....						
May:						
Private.....	1,018.2	344.9	668.3	9.9	442.2	-432.2
Government.....						
June:						
Private.....	1,496.1	365.0	-490.4	12.1	651.9	-639.8
Government.....		1,621.5				

Source: The Department of Commercial Intelligence and Statistics, India (monthly). Accounts Relating to the Trade and Navigation of British India. (The figures above are abbreviated and small discrepancies therefore appear in some of the summations.)

THE SILVER MARKET

C. INDIA'S FOREIGN TRADE IN MERCHANDISE AND PRECIOUS METALS,
1914-15 TO 1930-31

[In millions of dollars]

Year	Net excess of merchandise exports (+) or imports (-)	Net imports (+) or exports (-) of gold and silver	Net imports (+) or exports (-) of silver alone	Year	Net excess of merchandise exports (+) or imports (-)	Net imports (+) or exports (-) of gold and silver	Net imports (+) or exports (-) of silver alone
1914-15.....	+142.6	+54	+29	1923-24.....	+412.8	+147	+57
1915-16.....	+205.8	+12	+15	1924-25.....	+502.6	+310	+67
1916-17.....	+305.8	+102	+60	1925-26.....	+581.0	+190	+63
1917-18.....	+301.8	+144	+62	1926-27.....	+283.2	+142	+72
1918-19.....	+299.7	+220	+240	1927-28.....	+286.7	+116	+50
1919-20.....	+524.1	+277	+125	1928-29.....	+309.4	+113	+36
1920-21.....	-263.8	+29	+22	1929-30.....	+281.6	+83	+31
1921-22.....	-55.1	+32	+40	1930-31.....	+216.3	+84	+37
1922-23.....	+242.2	+176	+54				

NOTE.—The data in this table are shown graphically in fig. 10, on p. 42.

Source: Commerce Yearbook, 1931, Vol. II, p. 528.

D. SILVER HOLDINGS OF INDIAN TREASURY AT END OF EACH YEAR SINCE 1914

[In millions of rupees]

End of—	Holdings of coin and bullion	Net annual change	End of—	Holdings of coin and bullion	Net annual change
1914.....	298.7	.....	1923.....	866.1	+6.1
1915.....	294.2	-4.5	1924.....	807.6	-58.5
1916.....	173.6	-120.6	1925.....	833.3	+25.7
1917.....	190.5	+16.9	1926.....	1,035.2	+202.9
1918.....	321.3	+130.8	1927.....	1,085.3	+50.1
1919.....	436.7	+115.4	1928.....	1,008.8	-76.5
1920.....	610.9	+174.2	1929.....	1,080.5	+71.7
1921.....	739.7	+128.8	1930.....	1,199.9	+118.4
1922.....	860.0	+120.3	1931.....	1,229.9	+30.0

E. WHOLE RUPEES COINED AND ISSUED FROM THE INDIAN MINTS FROM 1835

[In millions of rupees]

Year	Amount ¹	Year	Amount ¹	Year	Amount ¹
1835	164.0	1888	70.8	1909	¹³ 22.3
1840	1,078.2	1889	74.7	1910	17.7
1862	706.9	1890	117.6	1911	15.3
1874	43.5	1891	64.2	1912	¹⁴ 142.2
1875	31.0	1892	104.7	1913	¹⁴ 163.3
1876	41.0	1893	² 78.7	1914	48.4
1877	134.8	1897	³ 1.5	1915	15.3
1878	96.6	1898	⁴ 7.5	1916	212.9
1879	88.7	1900	⁵ 118.1	1917	264.8
1880	72.2	1901	⁶ 109.1	1918	413.7
1881	5.6	1902	⁷ 93.1	1919	427.6
1882	71.5	1903	⁸ 102.4	1920	108.9
1883	23.1	1904	⁹ 160.3	1921	11.5
1884	48.5	1905	¹⁰ 127.5	1922	2.6
1885	99.0	1906	¹¹ 263.8	1923	4.9
1886	52.0	1907	¹² 252.2		
1887	88.6	1908	¹² 30.9	Total	6,475.7

¹ Coins bearing the stamp of a year earlier than that in which they were coined have been here counted under the year in which they were coined. The figures are here abbreviated, accounting for any discrepancy in the summation.

² Includes 590,000 rupees coined for the Bikaner state.

³ On account of Kashmir and Bhopal recoinage.

⁴ Includes 20,902,414 rupees coined for Indian states.

⁵ Includes 19,034,904 rupees coined for Indian states.

⁶ Includes 29,886,014 rupees coined for Indian states.

⁷ Includes 1,166,451 rupees coined for Indian states.

⁸ Includes 594,221 rupees coined for Indian states.

⁹ Includes 328,000 rupees coined for Indian states.

¹⁰ Includes 390,310 rupees coined for Indian states and 16,700,000 rupees (Calcutta 3,200,000 rupees and Bombay 13,500,000 rupees) coined from gold-standard-reserve silver.

¹¹ Includes 94,766 rupees coined for Indian states and 43,300,000 rupees (Calcutta 16,800,000 rupees and Bombay 26,500,000 rupees) coined from gold-standard-reserve silver.

¹² Includes 101,459 rupees coined for Indian states.

¹³ Includes 1,656,250 rupees coined for Indian states.

¹⁴ Includes 1,278,441 rupees coined for Indian states.

Source: Report of the Controller of the Currency for the year 1929-30 (Calcutta, 1930), pp. 80-81.

APPENDIX 8.—CHINESE SILVER STATISTICS

NOTE.—Apart from the following statistics, additional information on China's trade in silver appears on pp. 53-59 and on p. 8.

A. CHINA'S FOREIGN TRADE IN SILVER AND GOLD, 1888-1900

[In millions of haikwan taels]

Year	Silver		Gold	
	Net imports	Net exports	Net imports	Net exports
1888		1.9		1.7
1889	6.0			1.6
1890		3.6		1.8
1891		3.1		3.7
1892		4.8		7.3
1893	10.8			7.5
1894	26.4			12.8
1895	36.7			6.6
1896	1.7			8.1
1897	1.6			8.5
1898	4.7			7.7
1899	1.3		1.2	7.6
1900	15.4			
Total	104.6	13.4	1.2	74.4

Source: C. F. Remer, in Quarterly Journal of Economics, August, 1926, p. 630.

B. CHINA'S FOREIGN TRADE IN SILVER AND GOLD, 1901-1931

[In millions of haikwan taels¹]

SILVER

Year	Imports				Exports			
	Bars and sycee	Coin	Total	Net imports	Bars and sycee	Coin	Total	Net exports
1901	6.7	7.6	14.4	.....	0.3	20.1	20.5	6.1
1902	4.8	13.6	18.4	.....	5.8	26.5	32.3	13.8
1903	6.8	16.2	23.0	.....	4.2	24.9	29.0	6.0
1904	4.7	18.8	23.5	.....	9.2	27.9	37.1	13.6
1905	7.8	23.6	31.4	.....	4.8	33.8	38.6	7.2
1906	5.6	13.8	19.3	.....	7.5	30.5	38.0	18.7
1907	4	6.6	7.1	.....	13.5	24.8	38.3	31.2
1908	10.5	9.6	20.1	.....	3.7	28.7	32.4	12.3
1909	22.1	8.8	30.9	6.8	3.7	20.3	24.0	.....
1910	30.6	14.0	44.6	21.8	6.9	15.9	22.8	.....
1911	35.1	25.9	61.1	38.3	3.5	19.2	22.8	.....
1912	28.4	16.7	45.1	19.2	11.1	14.7	25.8	.....
1913	46.6	9.1	55.7	36.0	6.1	13.6	19.7	.....
1914	7.7	8.8	16.5	.....	5.7	24.4	30.1	13.6
1915	11.6	9.2	20.7	.....	10.1	28.1	39.1	18.9
1916	13.3	23.8	37.1	.....	42.8	23.0	65.8	28.7
1917	16.2	11.3	27.5	.....	33.1	15.4	48.5	21.0
1918	22.6	13.5	36.1	23.5	5.5	7.2	12.6	.....
1919	49.0	13.1	62.1	53.1	2.0	7.0	9.0	.....
1920	100.6	25.8	126.4	92.6	10.0	23.7	33.7	.....
1921	73.5	14.1	89.5	32.4	23.6	33.5	57.1	.....
1922	59.5	16.2	75.7	39.6	6.6	29.5	36.1	.....
1923	70.8	23.1	93.9	67.2	3.7	23.1	26.7	.....
1924	34.3	15.2	49.5	26.0	5.5	18.0	23.5	.....
1925	96.3	4.7	73.9	62.5	1.8	9.6	11.4	.....
1926	75.6	3.2	78.8	53.2	9.9	15.7	25.6	.....
1927	75.4	6.5	81.9	65.1	6.5	10.3	16.8	.....
1928	106.4	5.3	111.7	106.4	1.8	3.5	5.3	.....
1929	116.2	5.3	121.4	105.8	4.0	11.6	15.6	.....
1930	78.1	24.5	102.6	67.0	11.2	24.4	35.6	.....
1931	63.2	11.7	74.9	40.5	10.9	23.6	34.4	.....

GOLD

Year	Imports				Exports			
	Bars and dust	Coin	Total	Net imports	Bars and dust	Coin	Total	Net exports
1901	0.1	0.8	0.9	.....	5.5	2.0	7.5	6.6
1902	(⁴)	.2	.2	.....	9.3	.3	9.6	9.4
1903	1.0	3.0	4.0	0.1	3.7	.2	3.9	.....
1904	(²)	9.9	9.9	8.4	1.4	.1	1.5	.....
1905	(²)	11.1	11.1	7.1	2.4	1.6	4.1	.....
1906	(³)	7.0	7.0	3.8	2.3	.9	3.2	.....
1907	1.2	7.1	8.3	2.5	5.4	.5	5.8	.....
1908	.1	1.4	1.5	.....	10.6	2.4	13.0	11.5
1909	(²)	1.0	1.0	.....	7.2	.6	7.8	6.8
1910	(²)	3.6	3.6	.....	4.1	.5	4.5	1.0
1911	(²)	4.0	4.0	1.5	2.1	.4	2.5	.....
1912	.3	9.0	9.3	7.5	1.8	(²)	.....	.....
1913	.1	3.0	3.1	.....	2.7	1.7	4.5	1.4
1914	(²)	.9	.9	.....	12.8	1.1	13.9	13.0
1915	(³)	.8	.8	.....	1.3	.3	1.6	17.4
1916	8.4	11.5	19.9	11.8	18.0	.3	18.2	.....
1917	.7	13.2	13.9	8.8	4.7	.1	4.8	.....
1918	.4	.8	1.2	.....	2.3	(²)	2.3	.....
1919	32.9	18.2	51.1	41.2	5.0	4.9	9.9	1.1
1920	23.0	27.0	50.1	.....	35.2	33.2	68.5	17.5
1921	3.1	26.4	29.5	.....	36.0	10.0	46.0	19.5
1922	1.5	8.3	9.8	4.1	1.4	4.3	5.7	.....
1923	1.0	9.1	10.1	.....	8.2	7.6	15.8	5.7
1924	.3	1.8	2.0	.....	7.9	3.9	11.8	9.7
1925	.8	1.1	1.8	.....	2.7	.1	2.8	1.0
1926	.9	.6	1.6	.....	8.8	.4	9.2	7.6
1927	1.6	.5	2.1	.....	3.3	.1	3.4	1.3
1928	3.1	3.2	6.3	6.0	.1	.2	.3	.....
1929	.5	.5	1.0	.....	2.9	(²)	3.0	2.0
1930	1.7	.9	2.6	.....	18.5	.....	19.1	16.5
1931	1.9	8.0	9.9	.....	22.5	.6	23.1	12.6

¹ The haikwan tael, according to the U. S. Bureau of the Mint, contains 579.198 grains. This compares with 480 grains, the content of 1 fine ounce troy.

² Items of less than 50,000 taels are omitted.

³ The source gives these data in customs gold units. Conversions into haikwan taels are here made at \$0.40 per c. g. u. and \$0.3521 per haikwan tael (the latter being the U. S. Bureau of the Mint valuation for 1931).

Source: 1901 to 1927 from China Year Book (1929 to 1930); 1928 to 1930 figures from Foreign Trade of China; 1931, from Monthly Trade Returns of the Foreign Trade of China, December, 1931.

C. CHINA'S FOREIGN TRADE IN MERCHANDISE AND PRECIOUS METALS, 1914-1931
[In millions of dollars]

Year	Net excess of merchandise exports (+) or imports (-) ¹	Net imports (+) or exports (-) of gold and silver	Net imports (+) or exports (-) of silver alone	Year	Net excess of merchandise exports (+) or imports (-) ¹	Net imports (+) or exports (-) of gold and silver	Net imports (+) or exports (-) of silver alone
1914	-142.7	-17.8	-9.1	1923	-136.4	+49.2	+53.8
1915	-22.1	-22.2	-11.4	1924	-199.6	+13.2	+21.1
1916	-27.3	-13.3	-22.7	1925	-144.1	-51.6	+52.5
1917	-89.2	-12.5	-21.6	1926	-197.5	+34.7	+40.4
1918	-86.9	+28.3	+29.6	1927	-65.1	+44.0	+44.9
1919	-22.5	+131.1	+73.8	1928	-145.3	+79.8	+75.5
1920	-273.6	+93.2	+114.9	1929	-160.1	+66.5	+67.7
1921	-231.7	+12.1	+24.6	1930	-190.9	+23.2	+30.8
1922	-240.8	+36.3	+32.8	1931 ²	-190.2	+9.8	+14.3

¹ In connection with the habitually adverse balance of China's commodity trade, it is believed by Commercial Attaché Julian Arnold that the existence of an export duty has given rise to considerable under-valuation of declared exports of Chinese merchandise. Another factor is the valuation of imports c. i. f.

² Values here given are converted from haikwan taels at 80.3521 per haikwan tael, this being the U. S. Bureau of the Mint valuation for 1931.

Note.—The data in this table are shown graphically in fig. 11, on p. 54.

Source: Commerce Yearbook, 1931, Vol. II, p. 513; 1931, from Monthly Trade Returns of the Foreign Trade of China, December, 1931.

D. FLOW OF SILVER INTO AND OUT OF SHANGHAI DURING 1930
[In thousands of haikwan taels¹]

Origin and destination	Bars and sycee	Coin	Total	Origin and destination	Bars and sycee	Coin	Total
IMPORTS				EXPORTS			
Foreign countries:				Foreign countries:			
Europe	3,149		3,149	Europe	1,043		1,043
America	40,729		40,729	America		(²)	(¹)
Asia—				Asia—			
India	1,728		1,728	India	1,773		1,773
French Indo-China		18,292	18,292	Singapore, Straits, etc.	757		757
Hong Kong	272	284	556	French Indo-China	473		473
Japan	2,616	13	2,629	Hong Kong	6,340	20,838	27,178
Total, Asia	4,616	18,590	23,206	Netherlands East Indies	58		58
Total, foreign countries	48,493	18,590	67,083	Japan	609	11	620
China:				Philippine Islands		141	141
Antung	333		333	Total, Asia	10,010	20,990	31,000
Dairen	380		380	Total, foreign countries	11,053	20,991	32,044
Chinwangtao		133	133	China:			
Tientsin		108	108	Dairen	180	4,429	4,609
Chefoo		15	15	Tientsin		667	667
Weihaiwei		929	929	Lungkow		33	33
Kiaochow		190	190	Chefoo	16	1,173	1,190
Shasi		20	20	Weihaiwei		33	33
Changsha		10	10	Kiaochow		2,787	2,787
Hankow		401	401	Chungking		400	400
Kiukiang	34	1,188	1,223	Ichang		198	198
Wuhu		4,439	4,439	Shasi		710	710
Chinkiang		64	64	Changsha		267	267
Wenchow		1,305	1,305	Hankow	481	3,102	3,583
Foochow	46	1	46	Kiukiang		390	390
Amoy		23	23	Wuhu		100	100
Swatow	245	31	276	Foochow	13	1,670	1,683
Canton	4		4	Amoy		9,631	9,631
Total, China	1,042	8,858	9,900	Swatow		10,683	10,683
Grand total, imports	49,535	27,448	76,984	Total, China	691	36,273	36,964
				Grand total, exports	11,744	57,264	69,008

¹ 1 haikwan tael equals 1.2066625 troy ounces of silver.

² 256 haikwan taels.

Note.—The items being abbreviated, not all the summations agree with the totals.

Source: China, The Maritime Customs; Shanghai Annual Trade Returns, 1930, p. 85-86.

APPENDIX 9.—SOME SILVER MONETARY STATISTICS

A. NET COINAGE¹ OF SILVER BY PRINCIPAL COUNTRIES, 1900-1929
(In millions of fine ounces)

Calendar year	United States ²	Austria Hungary	Austria	Hungary	Australia	Canada ²	France ²	Germany	Great Britain ²
1900	24.9	4.8				0.4	0.1	(³)	5.9
1901	21.0	2.3				.3	.1	(³)	2.2
1902	20.3	5.6				.2	(³)	(³)	2.4
1903	12.7	3.3				.2	(³)	(³)	.9
1904	10.2	.4				.2	(³)	(³)	(³)
1905	3.4	.2				.3	(³)	(³)	- .4
1906	7.0	.4				.6	(³)	(³)	4.0
1907	8.6	(³)				.8	(³)	(³)	4.5
1908	8.3	6.0			(³)	.2	(³)	8.4	2.5
1909	5.3	10.6			(³)	.4	8.2	8.6	1.6
1910	2.2	4.2			1.2	1.2	(³)	7.4	7.3
1911	4.3	6.3			1.2	.6	.1	6.5	5.3
1912	4.9	2.7			.7	.1	2.7	5.5	5.1
1913	1.9	6.2			.6	.7	(³)	8.2	3.9
1914	3.9	5.7			.9	.3	1.5	10.8	10.1
1915	2.5	7.6			.3	.1	7.1	6.9	25.6
1916	1.3	(³)			2.0	.7	15.1	1.9	27.8
1917	19.6	(³)			(³)	1.4	11.6	(³)	13.1
1918	-110.9	(³)			1.5	1.6	12.4	(³)	30.7
1919	-66.2				.8	2.2	10.3	(³)	10.9
1920	17.6		(³)	(³)	4	1.2	-5.7	(³)	- .8
1921	67.8		(³)	(³)	1.1	.4	(³)	(³)	-3.4
1922	62.6		(³)	(³)	.5	-1	(³)	(³)	-17.7
1923	49.1		0.4	(³)	(³)	-2	(³)	(³)	-18.2
1924	14.5		5.0	(³)	.2	-1	(³)	21.0	-5.7
1925	13.3		19.0	(³)	.6	-1	(³)	14.5	-5.4
1926	13.1		8.3	2.4	1.0	-2	(³)	15.2	-2.3
1927	6.0		9.1	1.8	1.5	-1	(³)	7.0	-6.5
1928	3.3		4.6	(³)	.5	.4	-43.2	9.6	-9.4
1929	3.5		2.7	1.0	(³)	.6	4.9	4.4	-8.1
Total	236.0	66.3	49.1	5.2	15.0	14.3	25.2	135.9	75.9

Calendar year	Italy ²	India ²	Indo-China	Japan ²	Mexico ²	Netherlands ²	Persia	Russia ²	Total, all countries ²
1900	0.1	48.4	10.9	0.6	13.4	-0.2		3.8	113.1
1901	.4	14.0	2.9	.5	19.5	- .3		1.1	64.0
1902	(³)	12.3	3.6	.3	5.8	(³)		- .3	50.2
1903	(³)	43.4	8.0	.4	21.4	(³)		1.9	92.2
1904	(³)	30.3	4.5	.8	8.0	(³)		65.9	48.5
1905	(³)	43.8	2.8	5.1	(³)	- .6		-5.2	49.4
1906	(³)	61.0	8.0	4.2	-4.1	- .8		2.4	82.7
1907	-1.1	54.5	11.0	6.6	2.3	(³)		2.6	89.8
1908	.7	4.7	11.0	4.7	-4	(³)		1.4	47.5
1909	.5	(³)	7.3	2.4	2.5	-1.4	(³)	1.8	47.8
1910	1.0	(³)	.8	(³)	(³)	(³)	7.6	.6	33.5
1911	.5	1.9	.5	1.1	(³)	.7	.8	1.6	31.4
1912	.9	44.7	.2	2.6	.9	(³)	.4	3.9	75.3
1913	2.1	46.8	4.7	.9	3.1	.1	1.9	2.7	83.8
1914	2.8	10.7	.6	-4.5	(³)	5.3	3.3	7.1	58.5
1915	2.0	5.9	1.0	.2	(³)	2.3	1.6	22.2	85.3
1916	3.1	71.5	.3	.8	.2	1.7	3.8	43.1	173.3
1917	1.6	91.4	(³)	67.2	9.8	(³)	(³)	(³)	215.7
1918	(³)	146.2	(³)	4.9	2.4	1.0	(³)	(³)	89.8
1919	(³)	150.5	.1	2.6	.5	1.8	1.3	(³)	114.8
1920	(³)	37.3	.6	(³)	14.2	(³)	.3	(³)	65.1
1921	(³)	.1	6.7	(³)	6.1	.9	.3	1.7	71.7
1922	(³)	-2.2	7.5	11.9	9.7	2.1	1.7	(³)	76.0
1923	(³)	-2.0	2.8	13.4	11.0	.2	1.1	8.7	66.3
1924	(³)	-3.3	2.5	5.6	11.2	1.0	1.3	22.1	74.3
1925	(³)	-3.0	2.3	-2	2.3	.1	1.8	22.6	67.8
1926	- .8	-3.6	4.5	.4	1.8	- .3	3.9	11.8	55.2
1927	-6.8	- .3	6.7	-1	.1	.1	3.8	(³)	22.3
1928	-4.5	-13.4	6.8	-6	-1.4	1.2	7.7	(³)	-38.2
1929	4.6	-28.2	.4	.6	10.1	3.5	4.7	(³)	4.5
Total	7.1	863.4	119.0	132.4	150.4	18.4	46.3	151.7	2,111.6

¹ To obtain the net coinage figures, the amount of domestic coin withdrawn from monetary use was subtracted from the total annual domestic coinage of each country. The coins struck and the coins withdrawn were converted into fine ounces on the basis of their legal content, at the average price of silver in London for the year concerned. Very useful data on the legal contents of the coins of the principal countries of the world are to be found in The Monetary Systems of the Principal Countries of the World (1912 and 1916) and Monetary Units and Coinage Systems of the Principal Countries of the World (1929), published by the Office of the Director of the Mint, Washington, D. C.

² The minus sign indicates that the amount of coins withdrawn from monetary use was greater than the amount struck for that year.

³ Coinage balanced by withdrawals.

Source: Compiled by Y. S. Leong, of the Brookings Institution, from the annual reports of Director of the Mint.

B. METALLIC HOLDINGS OF PRINCIPAL BANKS OF ISSUE, 1900-1930¹

[In millions of dollars]

Year	Austro-Hungarian Bank ²			National Bank of Belgium ³			National Bank of Bulgaria ⁴			National Bank of Denmark ⁵		
	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic
1900	186.3	48.3	234.6	17.6	2.3	19.9	1.4	1.0	2.4	19.7		19.7
1901	226.1	55.0	281.1	16.6	4.0	20.6	1.4	1.2	2.6	19.5		19.5
1902	224.4	60.3	284.7	16.0	5.6	21.6	1.0	2.9	3.9	19.9		19.9
1903	224.8	59.3	284.1	17.6	5.0	22.6	1.4	1.5	2.9	21.4		21.4
1904	233.6	59.7	293.3	18.3	4.8	23.1	2.1	1.5	3.6	22.2		22.2
1905	217.6	58.9	276.5	18.9	4.1	23.0	4.0	2.0	6.0	25.1		25.1
1906	225.4	49.5	274.9	20.1	3.9	24.0	5.3	2.1	7.4	26.1		26.1
1907	222.7	57.0	279.7	20.6	5.1	25.7	5.3	2.8	8.1	19.3		19.3
1908	239.6	59.4	299.0	21.7	8.8	30.5	4.8	2.9	7.7	17.9	1.5	19.4
1909	274.3	58.9	333.2	21.1	9.6	30.7	6.0	3.3	9.3	18.1	1.7	19.8
1910	267.5	56.9	324.4	24.3	12.4	36.7	6.1	2.6	8.7	19.7	1.8	21.5
1911	261.7	55.9	317.6	36.5	8.7	45.2	7.7	3.7	11.4	19.8	1.7	21.5
1912	245.1	46.5	291.6	41.5	10.4	51.9	9.8	3.2	13.0	20.4	1.7	22.1
1913	251.4	50.7	302.1	48.1	10.8	58.9	10.7	4.5	15.2	19.7	1.6	21.3
1914	213.7	25.4	239.1	51.0	5.7	56.7	10.6	4.4	15.0	24.5	.7	25.2
1915	138.8	13.4	152.2	50.7	1.2	51.9	11.9	4.3	16.2	29.8	.8	30.6
1916	58.8	11.9	70.7	50.7	1.2	51.9	13.1	4.1	17.2	42.9	.4	43.3
1917	53.7	11.4	65.1	50.7	1.4	52.1	12.2	3.9	16.1	46.6	.7	47.3
1918	53.1	11.0	64.1	51.1	2.7	53.8	12.4	3.7	16.1	52.1	.6	52.7
1919	45.1	10.0	55.1	51.4	2.8	54.2	7.1	3.3	10.4	60.8	.9	61.7
1920				51.4	3.4	54.8	7.2	3.3	10.5	61.0	.7	61.7
1921				51.4	4.1	55.5	7.3	4.0	11.3	61.2	1.0	62.2
1922				51.9	4.2	56.1	7.4	3.6	11.0	61.2	1.0	62.2
1923				52.2	4.2	56.4	7.6	3.3	10.9	56.2	3.9	60.1
1924				52.6	4.9	57.5	7.8	3.3	11.1	56.2	5.0	61.2
1925				52.9	8.0	60.9	8.0	3.4	11.4	56.1	5.5	61.6
1926	67.4	6.5	73.9	86.2	16.4	102.6	8.5	3.4	11.9	56.0	4.0	60.0
1927	11.9	.2	12.1	99.9	.1	100.0	9.3	3.5	12.8	48.8	2.9	51.7
1928	23.7	.3	24.0	125.6	.3	125.9	9.5	3.6	13.1	46.3	2.1	48.4
1929	23.7	.4	24.1	163.3	.3	163.6	10.0	1.2	11.2	46.2	1.6	47.8
1930	30.2	.4	30.6	188.3	.5	188.8	10.5	1.1	11.6	40.1		

Year	Bank of Finland ⁷			Bank of France ⁸			Banks of Italy, Naples, and Sicily ⁹			Bank of Japan ¹⁰		
	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic
1900	4.1	0.5	4.6	450.2	211.9	662.1	77.8	11.8	89.6	32.9	1.0	33.9
1901	4.1	.6	4.7	472.7	211.7	684.4	80.7	13.0	93.7	34.3	1.2	35.5
1902	4.1	.6	4.7	486.2	212.0	698.2	86.9	13.4	100.3	53.9	.5	54.4
1903	4.1	.6	4.7	455.7	212.5	668.2	116.4	21.1	137.5	58.3		58.3
1904	4.4	.4	4.8	513.1	212.7	725.8	120.8	18.5	139.3	41.6	1.8	43.4
1905	4.5	.3	4.8	555.5	207.5	763.0	155.5	20.9	176.4	59.4	.3	59.7
1906	5.1	.3	5.4	522.2	192.7	714.9	179.3	25.9	205.2	73.4	.1	73.5
1907	4.9	.3	5.2	519.3	178.4	697.7	217.4	27.2	244.6	80.6		80.6
1908	4.6	.5	5.1	673.2	170.4	843.6	227.5	25.5	253.0	84.5	.2	84.7
1909	3.2	.6	3.8	673.0	168.5	841.5	232.3	24.0	256.3	110.0	.4	110.4
1910	4.2	.6	4.8	632.9	159.4	792.3	238.5	20.2	258.7	110.9	.2	111.1
1911	6.9	.5	7.4	615.7	155.4	771.1	244.7	24.3	269.0	114.2	.2	114.4
1912	6.8	.4	7.2	616.6	129.5	746.1	248.3	27.9	276.2	123.7	.1	123.8
1913	7.0	.4	7.4	678.9	123.5	802.4	265.5	22.3	287.8	112.0	.2	112.2
1914	8.2	.3	8.5	802.6	68.7	871.3	269.6	25.2	294.8	109.4		109.4
1915	8.2	.3	8.5	968.0	60.9	1,028.9	263.3	24.6	287.9	123.8	.1	123.9
1916	8.2	.2	8.4	652.9	56.9	709.8	223.4	21.8	245.2	204.7	.1	204.8
1917	8.2	.2	8.4	639.7	47.6	687.3	206.7	24.5	231.2	323.8		323.8
1918	8.2	.1	8.3	664.0	61.4	725.4	202.4	22.6	225.0	357.3		357.3
1919	8.2	.1	8.3	694.8	51.7	746.5	200.1	22.2	222.3	475.2		475.2
1920	8.2	.1	8.3	685.5	51.4	736.9	204.3	22.1	226.4	622.3		622.3
1921	8.2	1.7	9.9	690.1	54.0	744.1	210.7	22.0	232.7	621.6		621.6
1922	8.4	1.6	10.0	708.4	55.8	764.2	217.3	22.3	239.6	531.1	15.4	546.5
1923	8.2	1.9	10.1	709.4	57.2	766.6	215.7	24.1	239.8	527.8	27.8	555.6
1924	8.4	2.3	10.7	710.4	59.0	769.4	218.4	23.9	242.3	528.8	12.2	541.0
1925	8.4	1.9	10.3	711.0	61.8	772.8	218.8	24.1	242.9	526.9	14.6	541.5
1926	8.3		8.3	711.1	65.8	776.9	220.7	20.3	241.0	527.5	16.0	543.5
1927	8.0		8.0	954.0	66.2	1,020.2	239.2	25.0	264.2	529.8	11.8	541.6
1928	7.7		7.7	1,253.5		1,253.5	265.7	5.4	271.1	529.2	13.1	542.3
1929	7.6		7.6	1,633.4	8.7	1,642.1	273.0	10.4	283.4	534.5	11.0	545.5
1930	7.6		7.6	2,105.4	23.0	2,128.4				301.7	0.1	301.8

See footnotes on pp. 91 and 92.

B. METALLIC HOLDINGS OF PRINCIPAL BANKS OF ISSUE, 1900 TO 1930—Con.

[In millions of dollars]

Year	Bank of Java ¹¹			Bank of Netherlands ¹¹			National Bank of Norway ¹²			Bank of Portugal ¹³		
	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic
1900				23.6	27.1	50.7	7.8		7.8	5.2	9.1	14.3
1901				27.7	30.4	58.1	8.2		8.2	5.2	7.8	13.0
1902				23.7	32.0	55.7	8.3		8.3	5.2	6.5	11.7
1903				20.2	31.4	51.6	6.7		6.7	5.2	7.1	12.3
1904				27.2	30.6	57.8	6.8		6.8	5.2	6.8	12.0
1905				31.9	29.7	61.6	7.6		7.6	5.2	7.7	12.9
1906				26.7	27.8	54.5	8.3		8.3	5.4	6.8	12.2
1907				36.9	22.0	58.9	7.3		7.3	5.5	5.2	10.7
1908				40.6	19.7	60.3	7.9		7.9	5.7	4.4	10.1
1909				48.6	14.3	62.9	8.1		8.1	5.8	7.2	13.0
1910	7.3	12.4	19.7	50.2	10.1	60.3	9.2	0.4	9.6	6.6	5.1	11.7
1911	10.6	11.0	21.6	56.4	4.7	61.1	16.2	2	16.4	6.5	6.0	12.5
1912	16.1	6.8	22.9	65.0	3.3	68.3	10.2		10.2	8.6	34.3	42.9
1913	10.4	11.0	21.4	60.9	3.9	64.8	11.9	4	12.3	8.1	9.4	17.5
1914	15.1	10.3	25.4	83.7	1.0	84.7	10.3	3	10.6	8.6	6.0	14.6
1915	12.1	12.8	24.9	172.5	2.5	175.0	13.8		13.8	9.2	3.7	12.9
1916	29.5	9.6	39.1	236.2	2.8	239.0	33.0		33.0	9.3	3.6	12.9
1917	31.5	7.4	38.9	280.7	2.8	283.5	31.2		31.2	9.3	13.6	22.9
1918	43.4	5.8	49.2	277.2	3.9	281.1	32.7	3	33.0	9.3	18.6	27.9
1919	69.1	1.2	70.3	256.2	4.2	260.4	39.6	3	39.9	9.3	19.9	29.2
1920	88.2	3.8	92.0	255.7	6.6	262.3	39.5	2	39.7	9.3	20.5	29.8
1921	58.7	11.9	70.6	243.6	2.3	245.9	39.5	2	39.7	9.3	20.2	29.5
1922	61.3	22.8	84.1	233.9	2.7	236.6	39.5	2	39.7	9.3	19.7	29.0
1923	62.9	25.0	87.9	233.9	3.7	237.6	39.5	7.9	47.4	9.3	5.1	14.4
1924	53.7	21.0	74.7	202.9	8.3	211.2	39.5	6.3	45.8	9.3	1.0	10.3
1925	76.3	16.2	92.5	178.1	8.2	186.3	39.5	2.0	41.5	9.3	1.9	11.2
1926	79.3	11.6	90.9	166.2	11.1	177.3	39.5		39.5	9.3	1.2	10.5
1927	71.6	7.2	78.8	160.8	11.1	171.9	39.5		39.5	9.3	.6	9.9
1928	68.3	8.3	76.6	174.7	8.8	183.5	39.4		39.4	9.3	1.0	10.3
1929	56.1	11.8	67.9	179.9	9.8	189.7	39.3		39.3	9.3		9.3
1930	55.7	16.3	72.0	171.3	9.6	180.9	39.3		39.3	9.3		9.3

Year	Reichsbank ¹⁴			National Bank of Rumania ¹⁵			Imperial Bank of Russia ¹⁶			Bank of Spain ¹⁷		
	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic
1900	119.2	54.6	173.8	7.7	0.9	8.6	353.9	23.8	377.7	67.6	79.6	147.2
1901	150.6	55.3	205.9	9.5	.8	10.3	341.1	26.1	367.2	67.6	83.3	150.9
1902	130.2	56.2	186.4	14.3	.7	15.0	351.4	26.9	378.3	69.4	95.0	164.4
1903	132.9	55.6	188.5	14.3	.6	14.9	362.7	29.5	392.2	70.3	92.1	162.4
1904	168.8	51.8	220.6	10.8	.6	11.4	447.8	32.4	480.2	71.9	78.7	150.6
1905	142.0	49.2	191.2	15.1	.2	15.3	379.4	16.8	396.2	72.5	110.2	182.7
1906	114.7	43.8	158.5	16.1	.1	16.2	609.0	14.6	623.6	74.4	116.8	191.2
1907	120.0	49.9	169.9	18.7	.2	18.9	488.0	28.0	516.0	75.5	123.9	199.4
1908	193.0	50.5	233.5	17.6	.1	17.7	555.3	36.2	591.5	76.3	156.4	232.7
1909	162.2	54.9	217.1	18.6		18.6	587.0	38.4	625.4	77.8	148.6	226.4
1910	157.5	62.2	219.7	27.8		27.8	633.0	31.6	664.6	89.6	148.1	237.7
1911	175.6	67.6	243.2	30.5		30.5	646.9	33.0	679.9	108.2	145.5	253.7
1912	185.0	60.8	245.8	30.3	.2	30.5	683.2	34.4	717.6	123.6	142.3	265.9
1913	278.7	65.9	344.6	29.2	.3	29.5	872.4	31.9	904.3	92.6	138.8	231.4
1914	498.5	8.3	506.8	29.7		29.7	891.5	23.3	914.8	110.6	136.8	247.4
1915	582.4	6.4	588.8	42.6		42.6	830.6	18.9	849.5	167.4	145.3	312.7
1916	600.4	3.9	604.3	95.3		95.3	759.0	60.7	819.7	241.4	143.0	384.4
1917	573.2	35.7	608.9	34.5		34.5	666.5	79.8	746.3	379.6	127.9	507.5
1918	538.9	4.8	543.7	34.5		34.5				430.1	124.3	554.4
1919	259.5	4.9	264.4	34.5		34.5				472.1	122.0	594.1
1920	260.0	1.4	261.4	34.8		34.8				474.2	111.1	585.3
1921	237.1	2.8	239.9	34.8		34.8				485.0	120.9	605.9
1922	239.4	16.5	255.9	42.1	.1	42.2	¹⁸ 2.6		¹⁹ 2.6	487.3	125.0	612.3
1923	111.2		111.2	46.4	.1	46.5	45.0	¹⁹ 6	45.6	487.8	125.5	613.3
1924	180.9	11.1	192.0	47.8	2.6	50.4	73.0		73.0	489.3	126.0	615.3
1925	287.8	15.7	303.5	48.5	.9	49.4	93.9		93.9	489.6	126.2	615.8
1926	436.2	3.8	440.0	49.6	3.2	52.8	84.6		84.6	493.5	130.3	623.8
1927	444.2	7.5	451.7	50.8	2.0	52.8	97.0	¹⁹ 10.7	107.7	502.5	132.2	634.7
1928	650.1	15.2	665.3	49.3	.7	50.0	91.9	¹⁹ 22.8	114.7	493.9	134.7	628.6
1929	543.8	18.8	562.6	55.1		55.1	147.0	¹⁹ 17.8	164.8	495.2	135.9	631.1
1930	474.9	30.9	505.8	32.1		32.1	248.9	¹⁹ 11.5	260.4	470.7	135.3	606.0

See footnotes on pp. 91 and 92.

B. METALLIC HOLDINGS OF PRINCIPAL BANKS OF ISSUE, 1900-1930—Contd.

[In millions of dollars]

Year	Bank of Sweden ¹¹			National Bank of Switzerland ²⁰			Total, all banks		
	Gold	Silver	Total metallic	Gold	Silver	Total metallic	Gold	Silver	Total metallic
1900	12.5	1.1	13.6	19.3	2.2	21.5	1,406.8	475.2	1,882.0
1901	14.2	1.1	15.3	21.1	2.1	23.2	1,500.6	493.6	1,994.2
1902	12.8	1.4	14.2	20.2	1.7	21.9	1,527.9	515.7	2,043.6
1903	15.9	2.0	17.9	20.8	2.3	23.1	1,548.7	520.6	2,069.3
1904	17.0	1.1	18.1	20.7	1.6	22.3	1,732.3	503.0	2,235.3
1905	18.4	1.1	19.5	20.6	1.8	22.4	1,733.2	510.7	2,243.9
1906	19.4	.8	20.2	21.2	1.8	23.0	1,952.1	487.0	2,439.1
1907	18.9	.9	19.8	25.5	1.7	27.2	1,886.4	502.6	2,389.0
1908	21.0	1.2	22.2	28.9	1.8	30.7	2,210.1	530.5	2,749.6
1909	21.6	1.2	22.8	26.3	3.1	29.4	2,294.0	534.7	2,828.7
1910	21.5	1.4	22.9	30.0	2.0	32.0	2,336.8	527.4	2,864.2
1911	22.8	1.3	24.1	31.0	1.8	32.8	2,411.9	521.5	2,933.4
1912	26.8	1.3	28.1	33.4	2.5	35.9	2,494.4	505.6	3,000.0
1913	27.4	1.4	28.8	32.8	4.1	36.9	2,817.7	481.1	3,298.8
1914	29.1	.5	29.6	45.9	4.8	50.7	3,212.0	321.7	3,533.7
1915	33.4	.6	34.0	48.3	9.9	58.2	3,506.8	305.7	3,812.5
1916	49.2	.6	49.8	66.6	10.1	76.7	3,374.6	330.9	3,705.5
1917	65.5	.4	65.9	69.0	10.1	79.1	3,482.6	367.4	3,850.0
1918	76.5	.1	76.6	80.0	11.4	91.4	2,923.2	271.3	3,194.5
1919	75.4	.3	75.7	99.8	14.5	114.3	2,858.2	258.3	3,116.5
1920	75.5	.7	76.2	104.8	23.7	128.5	2,981.9	249.0	3,230.9
1921	73.6	3.0	76.6	106.1	21.3	127.4	2,938.2	269.4	3,207.6
1922	73.4	5.1	78.5	103.3	20.4	123.7	2,877.8	316.4	3,194.2
1923	72.9	3.4	76.3	103.7	17.9	121.6	2,789.7	311.6	3,101.3
1924	63.5	1.1	64.6	97.6	17.1	114.7	2,840.1	305.1	3,145.2
1925	61.6	1.2	62.8	90.1	17.6	107.7	2,964.2	309.7	3,273.9
1926	60.2	1.2	61.4	91.1	14.1	105.2	3,139.7	302.6	3,442.3
1927	61.7	.9	62.6	99.8	12.1	111.9	3,449.9	294.1	3,744.0
1928	63.2	.7	63.9	102.9	8.8	111.7	4,004.2	225.9	4,230.1
1929	65.6	.6	66.2	114.8	4.6	119.4	4,404.3	232.9	4,637.2
1930	64.5	.7	65.2	123.6	.7	124.3			

¹ The sources from which the figures are taken and the method of converting the original figures (representing various monetary units) into dollars are indicated by footnotes for each bank of issue. Wherever possible, the figures obtained from the sources indicated have been checked against the annual statements issued by the banks. For the years since 1913 the gold holdings figures, when comparable, have been taken from the Federal Reserve Bulletin.

² Compiled from the annual reports of the Director of the Mint; converted from crowns into dollars at \$0.2026 per crown.

³ Figures for 1900 to 1909 from Bulletin de Statistique, Paris, converted from francs into dollars at \$0.193 per franc; for 1910 to 1930, from annual reports of the Director of the Mint and from reports of the bank; original figures for 1910 to 1926 are in francs and were converted at \$0.193 per franc; from 1927 to 1930 the figures are in new francs and were converted at \$0.0278 per franc.

⁴ Figures for 1900 to 1909 compiled from Bulletin de Statistique, converted from francs into dollars at \$0.193; 1910 to 1929 compiled from annual reports of the Director of the Mint and from reports of the bank; original figures from 1910 to 1928 are in leva and were converted into dollars at \$0.193 per leva. The 1929 figures are in leva and were converted into dollars at \$0.0072 per leva.

⁵ Figures for 1900 to 1909 were compiled from Bulletin de Statistique, Paris, and were converted from francs into dollars at \$0.193.

⁶ From 1926 to 1930 figures are for the Austrian National Bank and were compiled from the annual reports of the Director of the Mint. Schillings were converted into dollars at \$0.1407 per schilling.

⁷ Figures for 1900 to 1909 were compiled from the Bulletin de Statistique, Paris, francs converted into dollars at \$0.193 per franc; 1910 to 1930, compiled from annual reports of the Director of the Mint and from reports of the bank; figures from 1910 to 1925 are in markkaa and were converted into dollars at \$0.193; from 1926 to 1930 they are in new markkaa and were converted at \$0.0252.

⁸ Figures for 1900 to 1909 compiled from Bulletin de Statistique and converted from francs at \$0.193; 1910 to 1930, compiled from annual reports of Director of the Mint and from reports of the bank; original figures from 1910 to 1927 are in francs and were converted at \$0.193; from 1928 to 1930 they are in new francs and were converted at \$0.0392.

⁹ Figures for 1900 to 1926 compiled from the Annuario Statistico Italiano, converted from lire at \$0.193; 1927 to 1929, from the annual reports of the Director of the Mint and from reports of the three banks. The original figures for 1927 are in lire and were converted at \$0.193; for 1928 and 1929 they are in new lire and were converted at \$0.0526.

¹⁰ From the annual reports of the Director of the Mint and from annual reports of the bank; converted from yen at \$0.4985.

¹¹ From the annual reports of the Director of the Mint and reports of the bank. Converted from florins at \$0.402.

¹² From the annual reports of the Director of the Mint and reports of the bank. Converted from kroner at \$0.268.

¹³ Figures for 1900 to 1909 from the Bulletin de Statistique, converted from francs at \$0.193; figures for 1910 to 1929 from the annual reports of the Director of the Mint and from reports of the bank; converted from escudos at \$1.08.

(Footnotes continued on following page.)

C. STANDARD SILVER DOLLARS AND SILVER CERTIFICATES HELD IN THE TREASURY, IN THE BANKS, AND IN CIRCULATION IN THE UNITED STATES ON JUNE 30, 1900-1930

[In millions of dollars]

Year	1	2	3	4	5	6	7	8	9
	Stock of standard silver dollars in United States	Standard silver dollars plus silver certificates held in Treasury as assets*	Silver dollars and certificates held outside Treasury (column 1 minus column 2)	Silver certificates held outside Treasury	Column 4 as per cent of column 3	Silver dollars held outside Treasury (column 3 minus column 4)	Column 6 as per cent of column 3	Silver dollars held by all banks	Column 8 as per cent of column 6
1900	566.1	15.7	550.4	408.5	74.2	141.9	25.8	24.0	16.9
1901	568.2	24.0	544.2	429.6	78.9	114.6	21.1	29.3	25.6
1902	570.1	24.8	545.3	446.7	81.9	98.6	18.1	29.1	29.5
1903	573.6	26.9	546.7	455.1	83.2	91.6	16.8	26.4	28.8
1904	572.9	25.9	547.0	462.6	84.6	84.4	15.4	24.5	29.0
1905	568.2	29.0	539.2	456.1	84.6	83.1	15.4	24.1	29.0
1906	568.3	25.3	543.0	472.0	86.9	71.0	13.1	25.7	36.2
1907	568.3	10.2	558.1	470.4	84.3	87.7	15.7	24.8	28.3
1908	568.3	21.4	546.9	465.6	85.1	81.3	14.9	24.5	53.6
1909	568.3	13.7	554.6	478.3	86.2	76.3	13.8	43.6	32.1
1910	568.3	13.2	555.1	479.0	86.3	76.1	13.7	28.7	37.7
1911	568.3	37.2	531.1	455.4	85.7	75.7	14.3	29.0	38.3
1912	568.3	26.0	542.3	469.0	86.5	73.3	13.5	27.1	37.0
1913	568.3	23.4	544.9	470.2	86.3	74.7	13.7	30.4	40.7
1914	568.3	28.3	540.0	478.6	88.6	61.4	11.4	30.8	50.2
1915	568.3	30.1	538.2	482.0	89.6	56.2	10.4	26.6	47.3
1916	568.3	9.8	558.5	489.9	87.7	68.6	12.3	36.3	52.9
1917	568.3	17.3	551.0	477.2	86.6	73.8	13.4	30.1	40.8
1918	499.5	77.5	422.0	379.2	89.9	42.8	10.1	19.8	46.3
1919	306.1	66.5	251.6	169.1	67.2	82.5	32.8	24.7	29.9
1920	268.9	14.9	254.0	118.3	46.6	135.7	53.4	79.8	56.8
1921	288.8	10.6	278.2	201.5	72.4	76.7	27.6	25.4	33.1
1922	381.2	7.9	373.3	304.1	81.5	69.2	18.5	26.3	38.0
1923	491.9	12.4	479.5	411.7	85.9	67.8	14.1	23.0	33.9
1924	503.8	17.9	485.9	408.4	84.1	77.5	15.9	35.5	45.8
1925	522.1	2.4	519.7	448.7	86.3	71.0	13.7	31.5	44.4
1926	533.5	6.0	527.5	457.9	86.8	69.6	13.2	32.9	47.3
1927	537.9	5.2	532.7	469.6	88.2	63.1	11.8	29.5	46.8
1928	540.0	7.2	532.8	471.7	88.5	61.1	11.5	26.7	43.7
1929	540.0	18.4	521.6	468.8	89.9	52.8	10.1	-----	-----
1930	540.0	6.6	533.4	487.2	91.3	46.2	8.8	-----	-----

* The silver holdings of the Treasury for all years covered in this table except 1905 to 1915 were in standard silver dollars. From 1905 to 1915, the Treasury held a small amount of silver certificates as assets. For each of these years, commencing with 1905, the amounts of such certificates held were, in millions of dollars, as follows: 1905, 9.1; 1906, 5.5; 1907, 5.4; 1908, 8.8; 1909, 6.1; 1910, 10.1; 1911, 8.1; 1912, 12.5; 1913, 13.4; 1914, 11.4; 1915, 10.7.

¹⁴ From annual reports of the Director of the Mint and reports of the bank. Converted from marks at \$0.2882.

¹⁵ Figures for 1900 to 1912 from the Bulletin de Statistique, converted from francs at \$0.193; 1913 to 1930, from the annual reports of the Director of the Mint and reports of the bank; figures for 1913 to 1923 are in lei and were converted at \$0.193; for 1929 and 1930 they are in new lei and were converted at \$0.00698.

¹⁶ Figures for 1900 to 1906 are from the annual reports of the Director of the Mint, converted from rubles at \$0.5145; for 1907 to 1917, from the Bulletin de Statistique, converted from francs at \$0.193.

¹⁷ Figures for 1900 to 1909 are from Bulletin de Statistique; 1910 to 1930, from annual reports of the Director of the Mint, and reports of the bank, converted from francs or pesetas at \$0.193.

¹⁸ For 1922 to 1930, from the annual reports of the Director of the Mint; converted from chervonetz at \$5.1457. These figures apply to the State Bank of the U. S. S. R.

¹⁹ Includes some platinum.

²⁰ Figures from 1900 to 1909 are from the Bulletin de Statistique; 1910 to 1929, from the annual reports of the Director of the Mint and reports of the bank; converted from francs at \$0.193.

Source: Compiled by Y. S. Leong, of the Brookings Institution.

C. STANDARD SILVER DOLLARS AND SILVER CERTIFICATES HELD IN THE TREASURY, IN THE BANKS, AND IN CIRCULATION IN THE UNITED STATES ON JUNE 30, 1900-1930—Continued

[In millions of dollars]

Year	10 Silver dollars in circulation (column 6 minus column 8)	11 Column 10 as per cent of column 6	12 Silver certificates held by all banks	13 Column 12 as per cent of column 4	14 Silver certificates in circulation (column 4 minus column 12)	15 Column 14 as per cent of column 4	16 Silver dollars and certificates held by all banks (column 8 plus column 12)	17 Column 16 as per cent of column 3	18 Silver dollars and certificates in circulation (column 10 plus column 14)	19 Column 18 as per cent of column 3
1900.....	117.9	83.1	60.2	14.7	348.3	85.3	84.2	15.3	466.2	84.7
1901.....	85.3	74.4	56.5	13.2	373.1	86.8	85.8	15.8	458.4	84.2
1902.....	69.5	70.5	79.3	17.8	367.4	82.2	108.4	19.9	436.9	80.1
1903.....	65.2	71.2	79.8	17.5	373.3	82.5	106.2	19.4	440.5	80.6
1904.....	59.9	71.0	93.8	20.3	368.8	79.7	118.3	21.6	428.7	78.4
1905.....	59.0	71.0	9.0	21.7	357.1	78.3	123.1	22.8	416.1	77.2
1906.....	45.3	63.8	106.1	22.5	365.9	77.5	131.8	24.3	411.2	75.7
1907.....	62.9	71.7	9.6	21.2	370.8	78.8	124.4	22.3	433.7	77.7
1908.....	37.7	46.4	150.4	32.3	315.2	67.7	194.0	35.5	352.9	64.5
1909.....	51.8	67.9	184.3	38.5	294.0	61.5	208.8	37.6	345.8	62.4
1910.....	47.4	62.3	188.3	39.3	290.7	60.7	217.0	39.1	338.1	60.9
1911.....	46.7	61.7	208.0	45.7	247.4	54.3	237.0	44.6	294.1	55.4
1912.....	46.2	63.0	205.9	43.9	263.1	56.1	233.0	43.0	309.3	57.0
1913.....	44.3	49.3	200.5	42.6	269.7	57.4	230.9	42.4	314.0	57.6
1914.....	30.6	49.8	206.8	43.2	271.8	56.8	237.6	44.0	302.4	56.0
1915.....	29.6	52.7	196.8	40.8	285.2	59.2	223.4	41.5	314.8	58.5
1916.....	32.3	47.1	170.0	34.7	319.9	65.3	206.3	36.9	352.2	63.1
1917.....	43.7	59.2	121.0	25.4	356.2	74.6	151.1	27.4	399.9	72.6
1918.....	23.0	53.7	98.4	25.9	280.8	74.1	118.2	28.0	303.8	72.0
1919.....	57.8	70.1	60.1	35.5	109.0	64.5	84.8	33.7	166.8	66.3
1920.....	55.9	41.2	90.0	76.1	28.3	23.9	169.8	66.9	84.2	33.1
1921.....	51.3	66.9	104.3	51.8	97.2	48.2	129.7	46.6	148.5	53.4
1922.....	42.9	62.0	97.2	32.0	206.9	68.0	123.5	33.1	249.8	66.9
1923.....	44.8	66.1	110.6	26.9	301.1	73.1	133.6	27.9	345.9	72.1
1924.....	42.0	54.2	114.5	28.0	293.9	72.0	150.0	30.9	335.9	69.1
1925.....	39.5	55.6	142.2	31.7	306.5	68.3	173.7	33.4	346.0	66.6
1926.....	36.7	52.7	164.4	35.9	293.5	64.1	197.3	37.4	330.2	62.6
1927.....	33.6	53.2	176.7	37.6	292.9	62.4	206.2	38.7	326.5	61.3
1928.....	34.4	56.3	157.4	33.4	314.3	66.6	184.1	34.6	348.7	65.4
1929.....										
1930.....										

Sources: Figures of the stock of standard silver dollars, of silver money (dollars and certificates, but not subsidiary silver) held in the Treasury as assets, and of such silver money outside the Treasury, were obtained from the Circulation Statement of United States Money of June 30 of each year. Figures for standard silver dollars and silver certificates in circulation were estimated by subtracting from the figures representing standard dollars and silver certificates outside the Treasury, the figures showing the amount of corresponding standard dollars and certificates held by all banks (including the Federal reserve banks). The estimates of silver dollars and of silver certificates held by all banks (columns 8 and 12) cover both the Federal reserve banks and all other banks in the United States. The silver-dollar and silver-certificate holdings of the Federal reserve banks were supplied to the compiler by the Division of Research and Statistics of the Federal Reserve Board. As to the silver-dollar and silver-certificate holdings of banks other than the Federal reserve banks, no complete figures are available. In the annual reports of the Comptroller of the Currency statistics are given covering the cash holdings of such banks. Such statistics report separately holdings of gold coin, silver coin, and other items. However, they always include an item called "no classification" cash. It is the latter item which had to be estimated for the preparation of this table. In making the necessary extensions of the break up of this item it was assumed that it contained silver and silver certificates in the same proportion as did the total of the unclassified item.

Table compiled by Y. S. Leong of the Brookings Institution.

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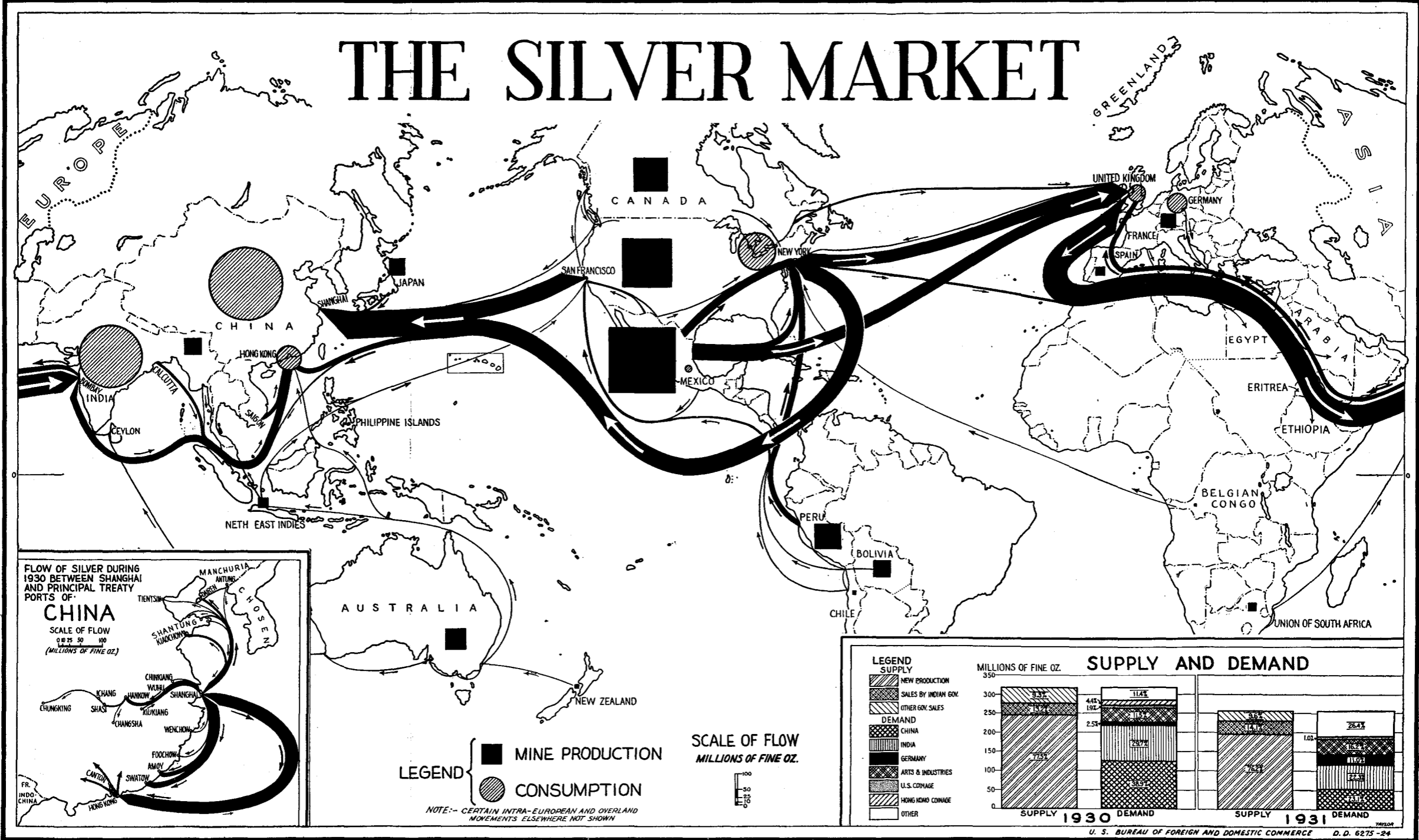
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Figure 9.—International flow of silver in 1930. (For data see appendices)