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The silver purchase program, initiated by President Franklin Roosevelt in late 1933 in response to the economically small but politically potent silver bloc, gave a large short-run subsidy to silver producers at the cost of destroying any long-run monetary role for silver. More important, it imposed severe deflation on China, the only major country still on a silver standard, and forced it off the silver standard and on to a fiat standard, which brought forward in time and increased in severity the subsequent wartime inflation and postwar hyperinflation. The silver purchase program thereby contributed, though perhaps only modestly, to the ultimate triumph of the Communists.

The U.S. silver purchase program that was initiated in 1933 by President Franklin Delano Roosevelt under the authority of the Thomas amendment to the 1933 Farm Relief Bill was the end product of a decade or more of political pressure by the silver lobby to "do something" for silver. The farm lobby supported silver purchases partly because it favored any measure that would promote inflation and thereby raise prices of farm products—prices that had plummeted during the Great Depression. In addition, the farm lobby wanted the support of the silver lobby for other price inflation devices contained in the Farm Relief Bill. President Roosevelt supported silver purchases primarily to assure the support of senators and representatives from silver and farm states for other New Deal legislation.

The other inflation measures in the Farm Relief Bill had already demonstrated their capacity to produce inflation before any silver was purchased. However, silver purchases did contribute to the growth in high-powered money that supported an increase during 1932–37 in

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the general price level of 14 percent, in wholesale prices of 32 percent, and in farm products of 79 percent.

The silver purchase program did "something" for silver by raising promptly and sharply the price of silver and providing a large subsidy to producers of silver. However, it also drove China—the only major country on a silver standard in 1934—off silver and led other major users of silver for monetary purposes—notably Mexico and many Latin American countries—to reduce or eliminate the silver content of their minor coins. It thereby assured the final and all but complete demonetization of silver.

The proponents of the silver purchase program listed benefits to China as one of its advantages. In fact, the program was a disaster for the Chinese republic ruled by Chiang Kai-shek. By virtue of being on a silver standard, China was largely insulated against the worst effects of the early years of the Great Depression. The U.S. silver policy imposed a major deflation on China in 1934–36, accompanied by troubled economic conditions, thereby undermining popular support for Chiang. More important, it denuded China of its monetary reserves and drove it off silver and on to a fiat paper standard. The war with Japan and the internal civil war between the Nationalist government and Mao Tse-tung's Communists would undoubtedly have led to inflation in China in any event. However, the U.S. silver policy accelerated the onset of inflation and increased its magnitude, contributing to the hyperinflation of 1948–49. As Chang Kia-ngau (1958, p. 363) wrote, while "many historical forces contributed to the collapse of the Nationalist government after World War II, . . . the direct and immediate cause which overshadowed all other factors was undoubtedly the inflation." This sentiment is echoed by an American historian, C. Martin Wilbur, in a foreword to a slightly later book by a Chinese scholar on the Chinese inflation: "There seems little doubt that China's wartime and postwar inflation was one of the prime factors which caused the downfall of the Nationalist government and the conquest of the mainland by the Chinese Communist Party" (Chou 1963, p. ix; see also Young 1965, p. 328). As a result, the U.S. silver purchase program must be regarded as having contributed, if perhaps only modestly, to the success of the communist revolution in China.

I. The Pressure for Silver

Like old soldiers, old causes never die; they only fade away. Supposedly interred by the defeat of William Jennings Bryan in 1896, the "silver issue" repeatedly resurfaced.

Toward the end of World War I, "the government of India was

having great difficulty in securing enough silver to provide for rupee circulation and for an adequate reserve behind the paper currency" (Leavens 1939, p. 145). The amount needed was greater than what could be provided from current production. To accommodate Great Britain, the United States agreed to provide silver out of its ample monetary reserves. To authorize this sale and to accommodate the domestic silver bloc, the Pittman Act was passed in 1918. The act was named for Senator Key Pittman of Nevada, who was perhaps the most persistent advocate of "doing something for silver" from his first term as senator, beginning in 1913, to his death in 1940. To satisfy the silver bloc, silver from the monetary reserves was to be replaced by purchases at a guaranteed price of $1.00 an ounce from domestic production, when excess production became available; such purchases were made from 1920 to 1923.[1]

Pressure to "do something" for silver continued after the completion of Pittman Act purchases but did not become vigorous until 1930, when the Great Depression produced a sharp decline in the price of silver: from 58 cents an ounce in 1928 to 38 cents in 1930 and 25 cents in late 1932 and early 1933.

The silver bloc promptly revived all the earlier favorites: calling an international conference, buying and stockpiling silver at a price above the market price, and enacting the free and unlimited coinage of silver at 16:1. None came to fruition during the Hoover administration, but they promptly reemerged after the election of FDR.[2]

The explanation for the continued pressure is straightforward. As Theodore J. Kreps (1934, p. 246) noted,

> Since silver is produced in the seven western states—Utah, Idaho, Arizona, Montana, Nevada, Colorado, and New Mexico—the silver senators control one-seventh of the votes in the Senate. This, under its rule of cloture, gives them a considerable strategic importance. Consequently more than twenty bills on silver were recently pending in Congress. Tho the silver states have an aggregate population less than that of New Jersey, and tho the silver industry in 1929 employed

[1] The wartime inflation plus high wartime demand for silver for both monetary and nonmonetary purposes raised its market price to 97 cents an ounce in 1918 from 70 cents in 1914, and subsequently to over $1.00 in 1919. "In May, 1920 the price of silver dropped below $1.00 per ounce. The Director of the Mint immediately began the purchase of silver bullion at the stipulated price of $1.00 per fine ounce" (Leavens 1939, p. 147). All in all, some 200 million ounces of silver were purchased under this act from American silver producers over the next 3 years at a price of $1.00 an ounce, whereas the market price fell to less than 70 cents—a subsidy totaling roughly $16 million to silver producers.

[2] For a detailed discussion of "proposals to do something for silver, 1923–33," see the chapter so titled in Leavens (1939, pp. 224–35).

less than 3,000 persons, the political leadership of the United States may soon find it expedient, in order to secure adequate political support for measures of far greater national importance, to "do something for silver."

II. New Deal Action for Silver

The Democratic platform on which Roosevelt was elected in 1932 pledged a "sound currency to be preserved at all hazards," but went on to add "and an international monetary conference called on the invitation of our Government to consider the rehabilitation of silver and related questions" (U.S. Congress 1940, p. 336). The Republican platform also favored an international conference but, in a separate plank, pledged to "continue to uphold the gold standard" (p. 344): shades of difference persisting since the direct confrontation on the silver issue in 1896. In a campaign speech at Butte, Montana, the heart of silver country, Roosevelt declared that "silver must be restored as monetary metal, and the Democratic pledge on the subject must be kept" and that "he would call immediately after his inauguration an international monetary conference to consider the rehabilitation of silver" (*New York Times,* September 20, 1932, p. 1).

The Democratic landslide in the 1932 election greatly strengthened the political power of the silver bloc, especially in the Senate. Before the election, the 14 senators from the seven states producing the bulk of the silver were evenly divided: seven Republicans and seven Democrats. The Roosevelt sweep left only two Republicans versus 12 Democrats, and one of the Republicans, William E. Borah of Idaho, had long been a staunch supporter of silver. Some leaders of the silver bloc—like Borah, first elected in 1906, and Pittman, first elected in 1912—by virtue of seniority, had become highly influential. Similarly, the farm state allies of the silver bloc gained strength. Obviously, the silver bloc was a potent political force and could hardly be ignored by the president. And, as he had made clear during the campaign, he had no intention of doing so.

The president's response was to support an amendment to a farm relief bill that was then being proposed by Senator Elmer Thomas, who did not come from a silver state but nonetheless was "a sturdy inflationist" (Leavens 1939, pp. 245–46). As finally passed, on May 12, 1933, the Thomas amendment provided for an increase in Federal Reserve notes and deposits and U.S. notes, at the discretion of the president, in an amount ($3 billion) that would have nearly doubled the amount of high-powered money. In addition, it authorized the president to reduce the gold content of the dollar and gave him sweeping powers with respect to silver—powers that would, for exam-

ple, have enabled him to give immediate effect to Bryan's battle cry of free and unlimited coinage of silver at 16:1. These powers were "hardly used until December 21, 1933, when . . . President Roosevelt used the authority granted by the Thomas amendment to direct U.S. mints to receive all newly produced domestic silver offered to them up to December 31, 1937, at $64^{64}/_{99}$ cents an ounce (i.e., $0.6464 . . . an ounce)" (Friedman and Schwartz 1963, p. 483) at a time when the market price was 44 cents an ounce.[3] The president justified this bizarre purchase price by adopting the fiction that the Treasury was simply coining silver at the legally specified weight for the silver dollar (i.e., at a monetary value of $1.2929 per ounce) but was charging 50 percent for seigniorage. This device had the advantage that the subsidy to silver producers not only entailed no budgetary costs but actually yielded a budgetary income equal to the fictional seigniorage. "Smoke and mirrors" in budgetary bookkeeping are not a recent invention.

In the meantime, the ill-fated World Economic Conference, called at the request of President Roosevelt to fulfill his campaign promise and, a couple of months later, summarily torpedoed by him, had come and gone.[4] About its only product was some more smoke and mirrors.[5] The climax came with the Silver Purchase Act enacted by Congress in response to a message by President Roosevelt on May 22, 1934, and signed by him less than a month later, June 19, 1934. The Silver Purchase Act "directed the Secretary of the Treasury to purchase silver at home and abroad until the market price reached $1.29+ an ounce, or until the monetary value of the silver stock held by the Treasury reached one-third of the monetary value of the gold stock. The Secretary was given wide discretion in carrying out that mandate" (Friedman and Schwartz 1963, p. 485).[6]

Purchases and, much later, sales under the 1934 and successor acts continued until late 1961, and legal authority for purchases was not repealed until 1963. Yet, despite massive acquisition of silver under the act, neither of its objectives—a price of $1.29+ an ounce or a

[3] A minor earlier effect of the Thomas amendment was its provision that for a limited time silver would be accepted at the artificial price of 50 cents an ounce in payment of governmental war debts. Some 20-odd million ounces were received under this provision earlier in the year.

[4] The conference opened in London on June 12, 1933, and closed on July 27, 1933.

[5] This was an agreement among silver-producing and using countries to take measures to shore up the price of silver, which imposed no significant actions on any country other than the United States and simply provided the United States with the cover of an international agreement to do what it was going to do anyway, i.e., buy a limited amount of silver (for a full discussion, see Leavens [1939, pp. 248–51]).

[6] An excellent summary of the act is given by Paris (1938, pp. 54–55).

1:3 ratio of monetary silver to monetary gold—came close to being realized.[7]

III. Domestic Effects

The silver legislation had only one significant domestic effect: the provision of a major subsidy, at taxpayer expense, to domestic producers of silver. They responded by greatly increasing production: from 33 million ounces in 1934 to 70 million ounces in 1940. Economic growth would in any event have led to increased production of silver because much silver is produced as a by-product of the mining of copper, lead, and zinc. However, the subsidized price stimulated the mining not only of silver but also of copper, lead, and zinc.

The silver bloc regarded stimulating the production of silver as a good thing in and of itself because it provided employment in the silver states. However, to get the support of other interests, notably the farm bloc, supporters of silver also argued that the purchase program would contribute to general inflation by increasing the money supply and would promote exports by increasing the purchase power of countries using silver as money, notably, according to them, China and India.[8]

The Treasury paid for the silver it purchased by printing silver certificates. That did add to the money supply. However, there were many other ways to increase the money supply, so the monetary effect was simply that silver certificates were printed instead of Federal Reserve notes. Put differently, nothing about the purchase program prevented the Federal Reserve from sterilizing the monetary effect of the silver purchases.

[7] Those acquisitions—by purchase from domestic producers under the December 21, 1933, proclamation; by the "nationalization" of domestically held stocks of silver on August 9, 1934; and by purchases on the open market under the Silver Purchase Act—initially drove the price of silver from around 44 cents an ounce just prior to the December 1933 proclamation to a high of 81 cents an ounce on April 26, 1935. The price then fell to around 45 cents in early 1936 and did not rise appreciably until the wartime inflation. By the end of the war, the price had risen above the government's support price for domestically mined silver. So in 1946, an act was passed reducing seigniorage to 30 percent, implying a support price of 90.5 cents an ounce. The market price was pegged at this level by Treasury purchases and sales until 1961. After government intervention ended, the price finally rose above its legal monetary value as silver participated in the postwar inflation. Then it rose high enough to send even drastically undervalued minor silver coins to the melting pot or the numismatic market. As to the second objective, the ratio of monetary silver to monetary gold never rose above 1:5 during the 1930s, still a long way from the 1:3 objective, because the massive additions to the gold stock that were produced by the increase in the legal monetary price of gold to $35 an ounce offset the effects of the massive silver purchases.

[8] China was on a silver standard but India was not. However, India had been until 1893, and Indian coinage remained mostly silver thereafter.

The effect on silver-using countries, as we shall shortly see, was precisely the opposite of that claimed: great economic difficulty.

All in all, the major short-run domestic effect was simply that the taxpayers paid to have silver dug out of the ground, refined, coined, and shipped to be stored in Washington or at other government depositories—a make-work program producing little if any useful output, if ever there was one. In the long run, even the domestic silver interests were harmed because the effects on other countries destroyed what had been a major market for their output, namely the use of silver for monetary purposes.

As late as 1933, by which time China was the only populous country still on a silver standard, 43 percent of the total visible stock of silver and more than 30 percent of all the silver produced from 1493 to 1932 were in monetary use (Leavens 1939, p. 369). By 1979, coinage accounted for only 5 percent of total consumption of silver. Throughout most of the postwar period, industrial consumption of silver substantially exceeded new production plus silver scrap, the balance coming out of U.S. silver stocks and demonetized and melted silver coinage (see Sec. IV below).

Many forces other than the silver purchase program affected the use and price of silver during those troubled decades, notably the change in the character of monetary systems around the world, ending in the adoption of fiat money standards after 1971. Yet there is little doubt that the initial rise in the price of silver produced by the purchase program played a significant role in reducing the monetary demand for silver, thereby ultimately driving its price below the level that would otherwise have prevailed.

Nonetheless, as figure 1 shows, in a long view the silver purchase program shows up only as a minor bubble. The figure plots the price of silver, adjusted for changes in the general level of prices, from 1800 to 1989.[9] At 1982 prices, the real price of silver ranged between $10 and $18 from 1800 to 1873, when the demonetization of silver in the United States and other countries started the price of silver on its long slide. The slide turned into a rout in the early 1890s, when first the repeal of silver purchase legislation and then the defeat of Bryan ended any realistic chance that silver would be remonetized. The 1934 silver purchase program stopped the rout, but only temporarily. The price decline did not really end until the 1960s, when

[9] A continuous price series was obtained by linking the deflator in Friedman and Schwartz (1982) to the Department of Commerce gross national product deflator from 1976 to 1986 and to wholesale prices as reported from 1800 to 1867 in the report of the U.S. Commission on the Role of Gold (1982). The price of silver in New York was pieced together from Warren and Pearson (1933), historical statistics, and Jastram (1981).

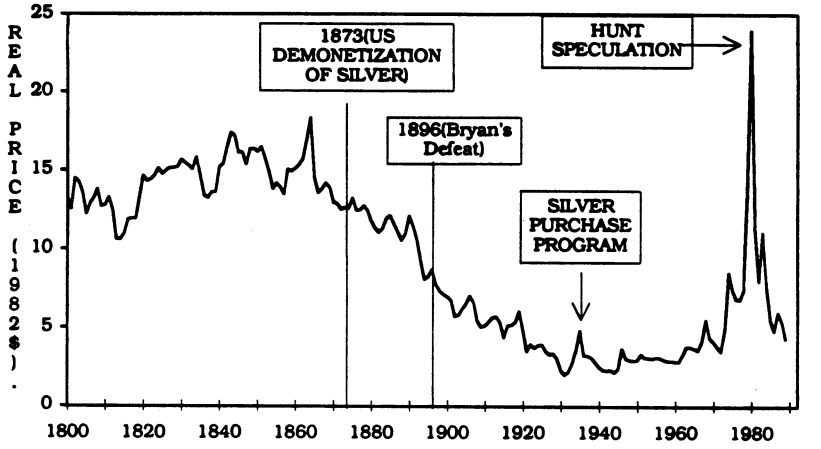

FIG. 1.—Real price of silver (1982 dollars), 1800–1989

increasing use of silver in photography and other industries came to the rescue. The ill-fated speculation on silver by the Hunt brothers, who lost much of their fabulous fortune in the venture, drove the price of silver to historically unprecedented levels, averaging nearly $25 for the year and reaching a much higher peak during the year. Silver then declined to earlier levels.

IV. Effects on Other Countries

The high price offered by the United States affected many other countries. Though silver lost out to gold in the 1870s as the major monetary metal, centuries of silver dominance left many countries with a large silver coinage. After the shift to gold, the face value of the silver coins was set above the market value of the silver they contained; they were token coins. As the United States drove up the price of silver, that situation changed: the coins in many countries became more valuable as metal than as money and so were consigned to the melting pot.

The same phenomenon had occurred in the United States during the greenback inflation of the Civil War, which caused an acute shortage of minor coins and a resort to postage stamps—"shinplasters"—as a substitute. The nickname stuck even after the Post Office started to produce stamps without mucilage to satisfy the demand for their use as fractional currency. Later, stamps were supplemented by fractional paper currency. The same phenomenon occurred again in the United States after World War II when inflation drove the price of silver above its legal monetary value. This time, preparations were

made in advance by reducing the amount of silver in coins, so that today's dimes, quarters, and half-dollars may have a silver sheen but are really copper coins with a thin coating of nickel.

As the price of silver rose higher and higher in 1935 and 1936, one country after another changed the silver content of its coins. "The silver coinage debasement campaign to keep coins from the melting pot was world-wide. Central America, South America, Europe, Asia and even Africa participated" (Paris 1938, p. 72).

Mexico was a special case. As the largest producer of silver, it benefited from the higher price for its output. But also, much of its money supply consisted of silver coins. Toward the end of April 1935, the value of the silver peso as metal rose above its value as money. "In order to prevent the peso from being shipped to the United States either as a coin or in melted-down form, President Cardenas proclaimed a bank holiday on April 27. Then he ordered all coins to be exchanged for paper currency, and prohibited the export of silver money. . . . A year and a half later, when silver prices had fallen, these orders were revoked and silver coinage was restored" (Paris 1938, p. 71). Nonetheless, Mexico had permanently converted its monetary system to a managed paper standard. The short-term benefit from the higher price of silver may have outweighed the immediate harm from the bank holiday and the accompanying monetary developments. However, over the long term, this immediate gain was almost surely more than offset by the loss of a major source of demand for silver and the lasting monetary effects of being forced to adopt a managed paper standard.

V. The Effect on China

I single out China for special attention because it was the only major country that was on a silver standard in 1933 when U.S. action to raise the price of silver began.[10] As a result, the U.S. silver purchase program had more far-reaching effects on China than on any other country. Though China did not produce any significant amount of silver, it had accumulated a large stock of silver as a result of its use as money. Only India had a larger stock of silver. Like China, India

[10] Because of its close economic ties to China, Hong Kong was also on a silver standard, and so also were Ethiopia (now Abyssinia) and Persia (now Iran) (Leavens 1939, p. 369). To describe China as "on a silver standard" is a simplification. "Copper . . . is used for an even larger proportion of the business done in China [than silver]. These copper coins . . . circulate on the basis of their value as metal. They constitute the medium of exchange and of account for the common people" (Kreps 1934, pp. 251–52). However, essentially all wholesale trade and foreign trade were conducted on the basis of silver.

had long been on a silver standard, but unlike China, it had gone off silver in 1893 and had adopted a gold standard in 1899.

The silver standard was a blessing for China in the early years of the Great Depression. The countries it traded with were on a gold standard. Prices in those countries fell drastically after 1929, including the price of silver. Since China was on a silver standard, the fall in the price of silver was equivalent to a depreciation of the exchange rate of its currency with respect to gold standard currencies; China had the equivalent of a floating exchange rate. For example, in 1929, the Chinese dollar was valued on the foreign exchange market at 36 U.S. cents; in the next 2 years the price of silver in terms of gold fell more than 40 percent, so the Chinese dollar was worth only 21 cents. Since U.S. wholesale prices fell by only 26 percent, China could command higher prices in terms of its own currency for its exports, despite their lower price in terms of gold. Imports, of course, were also more expensive. The net result was that although exports from China fell, they fell much less than both world exports and Chinese imports. China had a balance of payments surplus reflected in net imports of gold and silver in 1930 and 1931. Internally, it experienced a mild inflation and a mild boom, whereas the rest of the world was suffering from drastic deflation.[11]

The departure of Britain, India, Japan, and other countries from the gold standard in 1931 eroded the advantage conferred on China by a floating exchange rate. Their currencies depreciated vis-à-vis the U.S. dollar, which meant that the Chinese dollar appreciated in terms of the pound sterling, the rupee, and the yen, though it continued to depreciate vis-à-vis the U.S. dollar—to 19 cents at the end of 1932. For the first time, China felt the effects of the world depression, though it was sheltered somewhat by the continued decline in the price of silver in terms of the U.S. dollar, the limited monetization of the economy, and the large-scale use of copper coins by the general populace. The Chinese balance of payments deteriorated sharply, and in 1932, China exported gold and silver to pay for the excess of imports over exports. Internally, wholesale prices peaked in 1931 and then fell sharply, and economic conditions deteriorated, as judged by most contemporary observers (Salter 1934, p. 6; Wignall 1978*b*, pp. 36, 37).

The adverse effect on China of the departure of Britain and other countries from the gold standard in 1931 was reinforced by the Japa-

[11] For an excellent discussion of the impact on Chinese prices of being on the equivalent of a floating exchange rate, see Wignall (1978*a*, pp. 33–43; 1978*b*, p. 39). (The articles are unsigned in the original source. I have attributed authorship on the basis of a personal letter of April 18, 1990, from John Greenwood, founder and editor of the *Asian Monetary Monitor*.)

nese occupation of Manchuria in September 1931. At the time, China was governed by the Kuomintang under Chiang, though regional warlords ruled some areas and the Communists were leading a rebellion. "Chiang Kai-shek's response to the Manchurian occupation was indicative of China's weakness. The reality was accepted and no resistance offered. The Kuomintang leader concentrated instead on building up his army to meet the inevitable Japanese aggression. A strong army was also required to suppress the Communists and the regional power bases of the remaining warlords. These military demands were a crucial reason for the growing budgetary deficits of the Kuomintang. The debilitating effect of a long background of deficit financing was a prime factor in China's subsequent hyperinflation" (Greenwood and Wood 1977*a*, p. 27).[12] Nonetheless, Chiang had considerable success in unifying the country: "The regional powerbases of the warlords were undermined, while by 1934 the Communists were driven back to the northwestern mountain retreat of Yenan."

The temporary advantage conferred on China by the silver standard was not only eroded but eliminated and converted into a major disadvantage when the United States too went off gold in 1933. The Chinese dollar appreciated further with respect to the pound, yen, and rupee and, for the first time with respect to the U.S. dollar, from 19 cents at the end of 1932 to 33 cents at the end of 1933, back almost all the way to the 1929 level. True, prices in terms of the dollar and other currencies were rising, offsetting some of the effects of the appreciation of the Chinese dollar. But the U.S. price of silver rose much more sharply than prices in general, so only a small part of the appreciation was offset. As a result, Chinese exports fell sharply, by 58 percent compared to those of 1930, and exports of precious metals continued. While most of the rest of the world was beginning to recover from the Great Depression, according to contemporary observers, China was entering into the severest phase of its internal depression.[13]

The adverse effect on China of the U.S. departure from gold was strongly reinforced by U.S. action to "help silver," which played a major role in the near doubling of the price of silver during 1933 and its more than tripling to its peak in April 1935, when the Chinese dollar was valued on the market at 41 cents. The price of silver subsequently declined, as noted earlier, but by then the harm to China had

[12] This article and two others by Greenwood and Wood are unsigned in the original source, as mentioned in n. 11.

[13] The data in this and the preceding two paragraphs are taken from Salter (1934, pp. 15–19).

been done: China went off the silver standard on October 14, 1934, by raising the export duty on silver and imposing an adjustable "equalization charge," and on to "what was essentially a paper standard" (Wignall 1978*b*, p. 38). An official statement that China was leaving the silver standard was postponed until November 3, 1935, when the government announced a sweeping currency reform.

Had silver simply been a commodity in China, the rise in the price of silver would have been a welcome windfall, enabling China to dispose of its large stock of silver at highly favorable terms. But because silver was China's money, the rise in the price of silver produced a major deflation, which in turn led to severely troubled economic conditions: "Imports declined while exports became increasingly uncompetitive. Industrial production drew to a halt with the low level of activity in the economy, unemployment rose and prices slumped. The effect of the deflation on agriculture is clear from the fall of the price index of agricultural produce from 100 in 1926 to 57 in 1933. This represented an appalling decline in income, and hence purchasing power, for those living by cultivation of the land" (Greenwood and Wood 1977*a*, p. 32). According to Arthur N. Young, who served as a financial adviser to China from 1929 to 1947, "China passed from moderate prosperity to deep depression" (1971, p. 209).

The adverse effect of the U.S. silver policy on China was neither unpredictable nor unpredicted. In a February 1934 report, Sir Arthur Salter, who had been "invited by the Chinese Government to become for a few months an official adviser to the National Economic Council," wrote, "There are great dangers and difficulties in any departure from the present silver basis of the Chinese dollar. Without that, however, China can only escape the injury of further deflation if silver ceases to rise substantially in relation to the foreign currencies and to the world prices of commodities. The principal factor is the U.S.'s silver policy. It seems important, therefore, that China (whose real interest in silver is overwhelmingly greater than that of any other country) should make her position clear to the Government of that country" (Salter 1934, preface; pp. 108–9). Note that this was written after much of the damage had already been done. In a subsequent editorial of September 3, 1934, based largely on Salter's report, the *New York Times* wrote that "one of the odd aspects of our silver policy is that it was originally advocated precisely to help the 'silver-using' countries and to 'restore the buying power of the Far East.' . . . The only important country on the silver standard, however, is China, and those who are intimately acquainted with the Chinese situation are practically unanimous in holding that raising the price of silver can only be injurious to that country" (p. 12). It concluded its editorial by noting that the American silver policy might "have the ironic result

of driving the only important remaining silver country on to the gold standard."[14] In fact, it drove it on to a paper standard.

In March 1934, the U.S. Treasury sent Professor James Harvey Rogers of Yale University to China to report on the effect that higher silver prices would have on China. Like Salter, Rogers reported that the effect would be highly adverse, going so far as to write to Secretary of the Treasury Henry Morgenthau in October, after the damage had already mostly been done, that "to proceed with this new policy [bidding up the silver price]—before giving the Chinese government an opportunity to adjust to the resulting monetary disturbances—seems to me to border very closely on international irresponsibility" (Young 1971, p. 205).

VI. Alternative Interpretations of China's Departure from Silver

The preceding section is an expanded version of the discussion of this episode by Anna Schwartz and me in our *Monetary History* (1963, pp. 489–91) and offers essentially the same interpretation of the episode. That interpretation has recently been questioned by P. H. Chang (1988) and Brandt and Sargent (1989) on the basis of two more recent sets of statistical estimates.

We took it for granted that the export of silver (particularly in 1934 and 1935) produced a decline in the stock of money that spread the deflation from internationally traded goods to the general price level. We also regarded the depressed economic conditions reported by contemporary observers as largely a consequence of the monetary deflation.

There is no disagreement that the rise in the price of silver produced a severe deflation. The question is, how? And, was the higher price of silver really a catastrophe for China, as we maintained, or a boon?

Estimates of gross domestic product by Yeh (1964) indicate that real income in China fell appreciably from 1933 to 1934, primarily because of bad agricultural harvests, but was not otherwise particularly depressed from 1932 to 1936 (see Brandt and Sargent 1989, p. 46, table 5). Estimates of Chinese money supply by Rawski (1989, pp. 312–400) indicate that an increase in bank notes and bank deposits more than offset the decline in specie as a result of silver exports so that the total quantity of money rose not only prior to 1931, but also

[14] Salter had served as a *New York Times* correspondent to cover the London World Economic Conference in 1933, and he continued to write special articles for the *Times* thereafter. The *Times* reports him as giving several speeches in New York in late 1934, so it is not inconceivable that he wrote the editorial from which I have quoted.

from 1931 on (p. 394, table C16). Taken at face value, these two sets of estimates are inconsistent with our interpretation of the episode as a monetary deflation.

Brandt and Sargent (1989) regard this additional evidence as suggesting that the episode was one of "free banking" on a specie standard in which the higher real price of silver enabled a smaller physical stock of silver to support the same stock of money in nominal units. The price deflation, they suggest, was produced by the "law of one price," that is, arbitrage between international and domestic prices, rather than by monetary contraction. And prices, they conjecture, were sufficiently flexible to insulate the real economy from the price deflation produced by the law of one price. The higher value of silver was simply a boon to holders of silver, who exported the amount no longer needed to support the money stock.

Brandt and Sargent conclude that

> the U.S. silver purchase program did not set off a chain of bad economic events which eventually forced China off silver and onto a fiat standard. The U.S. silver purchase program undoubtedly did help cause the fall in the Chinese price level . . . . But the evidence points against any massive disruptions in real economic activity as having resulted from the price level fall. . . . The Chinese monetary system was driven off silver by its government, which wanted to increase its share of [the boon from the higher price of silver] . . . and which also perhaps foresaw that in coming years it would be easier to issue debt with low rates of returns if it could prevent competition from banks offering high-yielding low-denomination assets in the form of bank notes convertible into silver. [1989, p. 49]

Evidence on foreign trade—which incidentally rests on a firmer statistical basis than Yeh and Rawski's estimates—sharply contradicts this highly imaginative and theoretically attractive interpretation of the episode. If the deflation had negligible real effects, exports or imports would go down in nominal terms, but there was no reason for them to decline in real terms. On the contrary, both might have been expected to increase in real terms in response to expansion in the rest of the world from 1933 on. Add now the effect of the "boon" to the holders of silver. They would be induced to spend more on both foreign and domestic goods and services in response to their unanticipated increase in wealth. Extra spending on foreign items would add to real imports; extra spending on domestic items would reduce real exports, the difference being financed by the export of now redundant silver.

The actual pattern was the opposite. Both imports and nominal exports fell in nominal terms, but imports fell much more sharply. In real terms (adjusting by a wholesale price index), imports fell every year from 1931 to 1935, particularly sharply from 1933 to 1935, the years of the heavy export of silver. Exports in real terms actually rose from 1932 to 1933, apparently benefiting from recovery elsewhere and low real prices in China. They fell slightly from 1933 to 1934 and rose slightly from 1934 to 1935 (on the basis of figures in P. H. Chang [1988, p. 103, table 4]). This pattern is entirely consistent with the monetary deflation interpretation but is the opposite of that required by the Brandt-Sargent interpretation. Real imports began to fall when Britain went off gold in 1931 and fell most sharply when the United States went off gold in 1933 and began its silver purchase program. Real exports fluctuated up and down, reflecting the low real prices in China produced by a failure of internal prices to respond fully to the change in external prices expressed in terms of silver.

Examined more closely, neither new set of estimates constitutes a real challenge to the monetary interpretation. Both Schwartz and I and contemporary observers may well have overestimated the real effects of the nominal deflation. "Money illusion" tends to produce such an overestimate, as noted by Alfred Marshall many years ago. In *Monetary History,* we report that such an overestimate occurred with respect to the 1873–79 U.S. depression. Nonetheless, I find it hard to dismiss entirely the judgments of contemporary observers on the basis of the necessarily imperfect and incomplete aggregate statistics that underlie Yeh's estimates.[15] In addition, it stretches credi-

[15] Several examples of the observation of contemporary observers about the effect of declining prices on the economy were referred to earlier (Salter [1934], Young [1971], and Rogers, as cited by Young [1971]). Another, somewhat later observation is contained in T'ang (1936). He refers to the period after the abandonment of the gold standard by Britain in 1931:

> Falling prices greatly aggravated conditions, as farmers and manufacturers found their income steadily decreasing, while such expenditures as interest on loans, taxes, etc., remained high, and rent, wages, etc., declined more slowly than prices. The condition of workers in steady employment on fixed incomes improved through the fall in prices, but great numbers of wage-earners had been thrown out of employment by the crisis, more than cancelling the benefit to those who retained their positions. The economic situation steadily worsened. [P. 51]
>
> The effect of the slump upon industry in 1932/3 was registered by a great increase in unemployment. . . .
>
> In 1934 conditions became still worse. The fall in prices had first affected manufacturers and land-owning farmers, while farm labourers, and such other workers who remained in employment, were aided by lower living costs.

bility to suppose that prices in China were sufficiently flexible that a major deflation would have a negligible effect on real magnitudes.

Rawski's conclusion that the money supply rose despite the export of silver is equally questionable. He constructs two alternative monetary totals, embodying different estimates of the amount of monetary silver. Both increase from 1931 to 1935—by 23 and 20 percent—thanks exclusively to a sharp increase in deposits in "domestic modern banks" and "foreign banks." It is highly questionable whether such deposits were relevant to domestic nonfinancial activity. Modern domestic and foreign banks were concentrated in Shanghai and served primarily the transactions activities and liquidity desires of the financial community, domestic and international. Their lack of relevance to domestic nonfinancial activity is documented by Rawski's estimates of the ratio of currency outside of banks to the total money supply. Currency declines from 47 or 55 percent of the total in 1931 to only 33 or 41 percent of the total in 1935. Even the initial ratios are hardly credible for so underdeveloped a country as China, and the even lower final ratios are literally incredible.[16] By contrast, throughout the period from 1931 to 1935, currency outside banks was around 80 percent of totals that exclude the deposits of modern and foreign banks. That is much more credible for a country at China's stage of economic and financial development.[17]

The narrower totals, which include specie plus bank notes plus deposits in native banks, fell by 11 and 9 percent from 1931 to 1935, and by 13 and 11 percent from 1933 to 1935. So the severe decline came after the United States departed from gold and started on its silver purchase program.[18] I conclude that the money supply relevant to domestic nonfinancial economic activities did behave as Schwartz and I assumed.

> But wages both for farm and factory labour sank as economic conditions worsened, and suffering extended further and further. [P. 60]

Still another example of the observation of a contemporary observer, published much later, is contained in Young (1971, pp. 208–11, 220–23).

[16] So low a ratio was not reached in the United States until after the Civil War, by which time real income per capita in the United States was about 10 times as large as estimated real income per capita in China in 1933. So low a ratio was not reached in France until 1952 (Saint Marc 1983, pp. 38–39)!

[17] Some percentages for underdeveloped countries for 1988, based on estimates from the International Monetary Fund, are 60 for India, 62 for Syria and Mexico, 65 for Chad, 68 for Zaire and Nepal, 74 for Yemen Arab Republic, and 78 for Central African Republic.

[18] The decline in the smaller total may be an overestimate because Rawski does not allow for a probable decline in the silver reserve held behind bank notes. But even making a maximum possible allowance for such a decline serves only to produce a negligible increase from 1931 to 1935 and leaves a decrease of 3 and 2 percent from 1932 to 1935.

P. H. Chang (1988), in a detailed analysis of the same period, also rejects Brandt and Sargent's explanation on different though related grounds, namely, that "it fails to explain the sudden increase in silver exports occurring in 1934 and 1935 . . . . The timing of the Chinese deflation does not correspond to the pattern of Chinese silver exports" (pp. 73–74). He rejects our interpretation both because he erroneously believes that it is contradicted by the new estimates that Brandt and Sargent rely on and also because "we overlook the true cause of the silver outflow from China" (p. 69).

Chang argues that "America's determination to support silver prices and China's strong aversion to deflation and silver export [which he regards as greatly overdone] clearly pointed to an eventual suspension of the silver standard . . . [which] led those holding silver within China to export it, reinforcing the government's concerns and leading to the eventual departure from silver" (p. 43).

Chang's explanation of the time pattern of silver exports seems convincing. The speculative response to the widespread fears of the effect of the U.S. determination to raise the price of silver may well have been the trigger for the government's decision to embargo exports of silver and subsequently to establish a fiat standard. The effects that we emphasized in *Monetary History* would have led to the same result but might well have taken a longer time to produce that result.

The differences among the interpretations are important for a full understanding of events in China between 1932 and 1936. But it is worth emphasizing that all three interpretations agree on the implications of these events for later developments in China. All three agree that (1) the rise in the U.S. price of silver produced a sharp deflation in China; (2) large amounts of silver were exported both legally and illegally (via smuggling) after the government embargoed exports; (3) contemporary observers regarded the deflation as accompanied by severely depressed economic conditions, whether because of money illusion or because their firsthand information was more reliable than the later highly aggregated, partial, and inexact statistical data; (4) the deflation, whether solely nominal or accompanied by declines in real magnitudes, produced widespread uncertainty and discontent; (5) these phenomena led, by one route or another, to the departure of China from a silver standard and its replacement by a fiat standard; and (6) the monetary "reform" established institutional arrangements that contributed to the later Chinese hyperinflation.

It follows that the different interpretations of the events of 1932–36 all lead to the same conclusion about the effect of these developments on the later course of Chinese history, to which I now turn.

VII. The Chinese Hyperinflation

The effect on Chinese internal prices of departure from the silver standard was prompt but, until 1937, moderate. According to annual averages for Shanghai, wholesale prices, which had fallen by 23 percent from 1931 to 1934, fell another 1 percent from 1934 to 1935 and then rose 24 percent in the next 2 years. The situation changed drastically when Japan invaded China in the summer of 1937: "Government expenditure soared skyward to meet the cost of suppressing the Japanese invasion, and later to finance the civil war against the Communists" (Greenwood and Wood 1977*a*, p. 25). No doubt, even if the United States had not driven the price of silver up, government expenditure would have soared and China would sooner or later have left the silver standard and gone on a paper standard. But the U.S. action assured that the paper standard and inflation came sooner, not later. Chiang's position was weakened directly by the loss of the silver reserves that could have financed at least the initial expansion of government spending, which would have postponed the need to engage in inflationary monetary creation, and indirectly by the severely disturbed economic conditions to which the U.S. action contributed and which undermined popular support for the Nationalist regime.[19] If the United States had not driven up the U.S. dollar price of silver, China would have left the silver standard later, perhaps several years later, than it actually did and under better economic and political conditions. The future course of events would have been altered. Ultimate hyperinflation might not have been prevented, but

[19] Some idea of how important this effect could have been can be gained from data on the export of silver and the government's budget. From 1932 to 1936, roughly 900 million yuan of silver (valued at the legal Chinese price) were exported and, from 1932 to 1938, nearly 1,400 million (Leavens 1939, p. 303). Indirect evidence suggests that whereas much of the silver came from privately held stocks, as much as half may have come from monetary reserves held by the government directly or in government-owned banks as reserves against deposits and paper currency. In 1936, the year before the Japanese invasion of China, but when the Nationalist government was already desperately trying to build up its military strength, the government had borrowed 276 million yuan, and a substantial fraction of that went for refinancing maturing debt (Brandt and Sargent 1989, p. 43; Rawski 1989, p. 15). So even the directly held government silver would have financed several years of such deficits. Moreover, had the silver been available, it would have made for a healthier monetary situation in which prices would have been stabler, at least for a time, and hence in which the deficits generated by military expansion would have been lower and the capacity to engage in noninflationary borrowing much greater. All in all, it seems not unreasonable to suppose that the onset of inflationary monetary expansion could have been postponed by at least a year and possibly by 2 years or more. Of course, some of the silver exported must be regarded as purchasing goods and services used by the government. But much or most presumably went to accumulating foreign assets on private account to replace domestic assets.

at least it would have been postponed, thereby giving the Nationalist government more time to recover from wartime disasters and to repel the communist threat.

From 1937 on, U.S. silver policy had no further effects on China, though other U.S. policies undoubtedly did. The damage from the U.S. government's myopic concentration on the narrow short-time self-interest of a small but politically potent group had been done. However, the aftershock was still to come.

The Japanese invasion of China launched the Nationalist government on a frantic arms program, financed primarily by printing money. The note issue multiplied nearly 300-fold from 1937 to 1945, or on the average by 100 percent per year, starting at 27 percent from 1937 to 1938 and ending at 224 percent in the final year of the war. Prices rose even faster, to nearly 1,600 times their initial level, or an average of more than 150 percent per year.[20] Clearly, that was a major inflation. Yet the price rise "had been kept from reaching hyperinflationary levels by the flow of U.S. aid to the KMT government, by the entry of America in the Pacific War, and the sharp decline in the flow of refugees from Japanese occupied territory. In the weeks preceding victory over Japan commodity prices had actually slumped in anticipation of allied victory over Japan and the resumption of foreign supplies" (Greenwood and Wood 1977*b*, p. 32).

The initial prospects after the Japanese surrender looked favorable. A truce was reached between the Nationalists and the Communists. However,

> neither side was really interested in a united front when the main struggle was for domestic control . . . . Armed clashes became more serious and civil war was renewed . . . by the end of 1947. . . . A mammoth war spread over thousands of miles and involving millions of men on both sides. . . . By the end of 1947 the communists occupied Hopei and Shansi, and by the end of 1948 they had scored a decisive victory on the plains of the Hwai River near Suchow. In June 1949, the Nationalist commander, General Tu Yu-ming, surrendered with the best part of the surviving Nationalist army . . . . Chiang Kai-shek resigned in February and fled with the last of the gold reserves (about three million ounces) to Taiwan. [Pp. 32–33, 44]

[20] Data on note issue are taken from Yang (1985, p. 35), and those on the wholesale price index from Huang (1948, p. 564). I am indebted to Liu Na for translating the titles and headings of the tables in Yang from Chinese to English.

There is little doubt that bureaucracy, corruption, and bad financial management, which led to the collapse of the money market and true hyperinflation, were major factors contributing to the defeat of the Nationalists. In a final desperate measure, "on the 22nd of August, 1948, Chiang Kai-shek announced an official reform of the currency . . . . Under the terms of the reform a 'Gold Yuan' was created . . . . Prices were frozen, and all private holdings of gold, silver, and foreign exchange were to be surrendered within three months" at terms that amounted to outright confiscation. Force alone produced results. In the process, "the authorities forfeited the respect of the lingering few who had not already abandoned their wider sense of social responsibility" (pp. 40–41). By November, the government admitted defeat, as the black market was raging. All in all, with the "gold yuan" and the earlier currency linked together, prices in Nationalist territory in April 1949—by which time power had effectively changed hands—were more than 54 million times their level in December 1946, an average rate of increase of nearly 90 percent per month—far above the 50 percent per month that Phillip Cagan adopted in his now classic study of hyperinflation to separate hyperinflation from other inflationary episodes (1956, p. 25).

The hyperinflation not only helped sweep the Communists into power. Once the warfare was over, it was possible for the Communists to eliminate the hyperinflation, which unquestionably helped to cement them into power (Greenwood and Wood 1978).

VIII. Conclusion

It is impossible to assess with any precision the role that the U.S. silver purchase program played in bringing the Communists to power. There is little doubt that the wartime inflation and, even more, the postwar hyperinflation undermined confidence in the Nationalist government so severely that "the accession of the communists to power in October 1949 did not provoke mass hysteria amongst China's business and financial community." But that can hardly be attributed solely or even largely to the aftereffects of the silver purchase program. "The prevailing attitude [when the Communists came to power] was that nothing could be worse than the previous regime's incompetence and corruption" (Greenwood and Wood 1978, p. 27).

With or without the silver purchase program, the war with Japan and the internal civil war would have led to inflation, and incompetence and corruption would still have been there. However, in the absence of the silver purchase program, the Nationalists would probably have had a year or two extra leeway during which inflation would

have been low. The existence of a silver standard would have been one check. The availability of silver would have been another. The absence of an earlier major deflation would have been still another. No doubt the same ultimate scenario might have unrolled, but it would not have done so in the same time span; it would have taken longer. The odds for avoiding catastrophe would have been a little better; better for China—and better for the United States.

References

Brandt, Loren, and Sargent, Thomas J. "Interpreting New Evidence about China and U.S. Silver Purchases." *J. Monetary Econ.* 23 (January 1989): 31–51.

Cagan, Phillip. "The Monetary Dynamics of Hyperinflation." In *Studies in the Quantity Theory of Money,* edited by Milton Friedman. Chicago: Univ. Chicago Press, 1956.

Chang, Kia-ngau. *The Inflationary Spiral: The Experience in China, 1939–1950.* Cambridge: Technology Press of Massachusetts Inst. Tech., 1958.

Chang, P. H. Kevin. "Commodity Price Shocks and International Finance." Ph.D. dissertation, Massachusetts Inst. Tech., 1988.

Chou, Shun-hsin. *The Chinese Inflation, 1937–1949.* Foreword by C. Martin Wilbur. New York: Columbia Univ. Press, 1963.

Friedman, Milton, and Schwartz, Anna J. *A Monetary History of the United States, 1867–1960.* Princeton, N.J.: Princeton Univ. Press (for NBER), 1963.

———. *Monetary Trends in the United States and the United Kingdom: Their Relation to Income, Prices, and Interest Rates, 1867–1975.* Chicago: Univ. Chicago Press (for NBER), 1982.

Greenwood, John G., and Wood, Christopher J. R. "The Chinese Hyperinflation: Part 1. Monetary and Fiscal Origins of the Inflation, 1932–45." *Asian Monetary Monitor* 1, no. 1 (September–October 1977): 25–39. (*a*)

———. "The Chinese Hyperinflation: Part 2. The Crisis of Hyperinflation, 1945–49." *Asian Monetary Monitor* 1, no. 2 (November–December 1977): 32–45. (*b*)

———. "The Chinese Hyperinflation: Part 3. Price Stabilization after the 1949 Revolution." *Asian Monetary Monitor* 2, no. 1 (January–February 1978): 27–34.

Huang, Andrew Chung. "The Inflation in China." *Q.J.E.* 62 (August 1948): 562–75.

Jastram, Roy W. *Silver: The Restless Metal.* New York: Wiley, 1981.

Kreps, Theodore J. "The Price of Silver and Chinese Purchasing Power." *Q.J.E.* 48 (February 1934): 245–87.

Leavens, Dickson H. *Silver Money.* Bloomington, Ind.: Principia, 1939.

Paris, James D. *Monetary Policies of the United States, 1932–1938.* New York: Columbia Univ. Press, 1938.

Rawski, Thomas G. *Economic Growth in Prewar China.* Berkeley: Univ. California Press, 1989.

Saint Marc, Michèle. *Histoire monétaire de la France, 1800–1980.* Paris: Presses Universitaires de France, 1983.

Salter, Sir Arthur. *China and Silver.* New York: Econ. Forum, 1934.

T'ang, Leang-li. *China's New Currency System.* Shanghai: China United Press, 1936.

U.S. Commission on the Role of Gold in the Domestic and International Monetary Systems. *Report to the Congress.* Vol. 1. Washington: Government Printing Office, March 1982.

U.S. Congress. House. *Platforms of the Two Great Political Parties, 1932 to 1940.* Washington: Government Printing Office, 1940.

Warren, George F., and Pearson, Frank A. *Prices.* New York: Wiley, 1933.

Wignall, Christian. "The Fall of Silver: Part 1. China and the Silver Standard." *Asian Monetary Monitor* 2, no. 4 (July–August 1978): 33–43. (*a*)

———. "The Fall of Silver: Part 2. The Last Years (1914–1935)." *Asian Monetary Monitor* 2, no. 5 (September–October 1978): 28–39. (*b*)

Yang, Peixin. *Inflation in Old China* (in Chinese). Beijing: People's Publishing Co., 1985.

Yeh, K. C. "Capital Formation in Mainland China, 1931–1936 and 1952–1957." Ph.D. dissertation, Columbia Univ., 1964.

Young, Arthur N. *China's Wartime Finance and Inflation, 1937–1945.* Cambridge, Mass.: Harvard Univ. Press, 1965.

———. *China's Nation-building Effort, 1927–1937: The Financial and Economic Record.* Stanford, Calif.: Hoover Inst. Press, 1971.