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The Banking System and War Finance

CHARLES R. WHITTLESEY

OUR ECONOMY IN WAR

Occasional Paper 8: February 1943

FINANCIAL RESEARCH PROGRAM

NATIONAL BUREAU OF ECONOMIC RESEARCH

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Preface

THE PRESENT PAPER is the first of several that are being developed by the Financial Research Program on the general subject of the effect of war on banking. These studies, which have been made possible by grants from the Association of Reserve City Bankers and the Rockefeller Foundation, are to be published as National Bureau Occasional Papers in a special series entitled "Our Economy in War." Subsequent papers will consider the effects of war on the money supply, central banking, bank loans and investments, the structure of interest rates, and the solvency and liquidity of banks; the Canadian and British war credit organization will also be examined, as will the effects of war on the financial structure of business.

The broad questions of fiscal policy and war finance were analyzed in a recent National Bureau volume sponsored by the Conference on Research in Fiscal Policy, entitled *Fiscal Planning for Total War,* in the preparation of which William Leonard Crum, John F. Fennelly and Lawrence H. Seltzer collaborated. The present study does not go into these larger problems, but deals exclusively with the relation of war finance to the functioning of the banking system. Its author, Dr. Charles R. Whittlesey, is Professor of Finance and Economics in the Wharton School of Finance and Commerce in the University of Pennsylvania. In the collection and preparation of material he was assisted by Edith Elbogen and Willis J. Winn; and Elizabeth Todd was in complete charge of the editing.

RALPH A. YOUNG
Director, Financial Research Program

February 1943

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THE WAR OF 1917-18 was by far the most expensive this country had ever known. Yet the cost of that war, which seemed so tremendous at the time, appears small in comparison with the cost of the present struggle. Total expenditures of the federal government in the fiscal year 1942-43 will exceed our total national income in 1917-18 by more than half,[1] and will, in fact, be greater than our total national income in any year prior to 1941-42. The deficit for the fiscal year 1942-43 is expected to be in the neighborhood of 60 billion dollars, or over four and a half times the deficit for 1918-19. The addition to our national debt in the single year 1942-43 will be considerably more than double the total national debt accumulated as a result of the last war.

For a number of reasons the commercial banks of the country occupy a key position in the program of Treasury borrowing. They are by far the largest purchasers of government obligations, and, in addition, they constitute the most important single outlet for the sale of government obligations to the public. Moreover, upon their smooth functioning depends the possibility that the tremendous shifting about of funds may be accomplished without surfeits or stringencies of cash funds, either generally or locally. Finally, the needs of private customers must be served where consistent with war objectives, and their interests safeguarded in both the immediate and the more distant future.

In the two decades from 1921 to 1940 inclusive the average annual total of new security flotations, both bonds and stocks, was 4.1 billion dollars. The maximum for any single year of this period was 10.2 billion, reached in 1929, and the highest figure for any year after 1932 was 2.4 billion in 1938. In a single month of 1942, on the other hand, the Treasury sold securities amounting to nearly 13 billion dollars. This was the largest borrowing operation in history; but it was only an incident in the larger program of war financing.

The Sale of Bonds to the Public

In both world wars the commercial banks have played a leading part in Treasury financing. In the present war, however, bank lending to the government has been their most important function, whereas in the last war this was less prominent than their aid in the sale of securities to the public. At the start of financing the First World War it was decided that the Treasury and the Federal Reserve Banks should not participate in the actual sale of bonds to the public; their activities were directed, instead, toward problems of organization and administration. Accordingly, the sale of bonds to the public devolved upon local committees and the banks.

One of the initial steps in preparing for the First Liberty Loan was to set up an organization to conduct the selling program. This organization, which was divided into twelve groups corresponding to the twelve Federal Reserve Districts, was very largely under the supervision and direction of bankers. The most important of the regional groups—important particularly in terms of total sales—had its center in New York.[2] Under the supervision of the central group in New York, volunteer committees were formed in different occupations to assist in the sale of securities, and teams of bond salesmen conducted a house-to-house canvass. Representatives from investment banking played a particularly active role in the selling organization. Sub-committees carried the campaign into all parts of the Reserve District.

One of the basic features of the bond selling program was the reliance upon quotas. A quota committee was appointed by the Federal Reserve Bank of each District to allocate quotas among the states in the District. State committees made allocations among the counties, and county chairmen apportioned quotas among towns and communities. Local committees composed chiefly of bankers — whose names were not made public — decided upon the quotas of individuals.

Regional quotas were determined originally on the basis of relative holdings of bank assets, and the same method was used in assigning community quotas. In the course of time, however, this basis was supplemented by others. By the time of the Fourth Liberty Loan the formula for determining regional quotas was: bank assets 20 percent; population 20 percent; and value of real estate 60 percent.

Individual quotas were based on estimated ability to subscribe. This was calulated on the basis of bank balances, investments, real estate income and other information known to the committee. Once the quota was established, individuals were expected to subscribe that amount, or show why they should not. In many instances this involved a degree of social pressure that stopped little short of outright compulsion. One writer described it as "borrowing with a club." It was part of the general policy followed at the time, and was not confined to particular areas or groups.[3]

Complaints were frequent that individual and community quotas were unfair, but on the whole the system seems to have functioned surprisingly well. One of the chief criticisms was that the method served to discourage subscriptions in excess of the quota: it had been hoped that the quota would be viewed as the minimum amount to be subscribed, but it was more frequently looked upon as a maximum. Furthermore, if an individual subscribed more than his quota it often happened that the quota was raised the next time; this higher quota might then be excessive, and at any rate the individual would lose the recognition and satisfaction he might otherwise have had from exceeding his quota.

The work of marketing government securities, which was so largely handled by representatives of banks and investment houses, was furthered by special bond purchase plans and by various services performed free of charge by the banks in connection with the purchase and care of securities subscribed to by the public. Banks helped to educate the public as to method and procedure; they took charge of correspondence in connection with conversions; they sent out notices; they stood ready with information and advice.

In the course of time a number of major changes took place in the methods employed in the loan campaigns. There was a tendency to enlarge the different regional groups and to organize them more intensively. At the time of the Third Liberty Loan a permanent body of paid employees was created, and the use of volunteers was thereafter confined to the actual sales drives. The costs involved in maintaining the paid staff were met by the Treasury. At the end of 1918 the paid employees of the loan organization in the New York District alone numbered over 1,200. By the time of the Victory Loan the New York marketing organization had attained a technical, highly professional character; it was then virtually an agency of the government under the direction of the Governor of the New York Federal Reserve Bank. The development in other sections of the country was similar to that in New York, a development from a loosely knit, primarily voluntary organization to one of compact professionalism. This change reflects the greater efficiency of the latter system, and the rising magnitude of the task.

In the present war the largest proportion of funds borrowed by the government has thus far been obtained by direct borrowing from the banks, though sales to the public through the commercial banks are again an important means of financing. In addition, there have been sales of government obligations through post offices or booths set up in public places, through radio and other entertainers, through newspapers, Federal Reserve Banks and payroll savings plans. The method of payroll deductions constitutes one of the important innovations of the present borrowing program, and its extensive use has placed employers in a position of relatively greater importance than formerly in the scheme of war finance. A considerable degree of pressure to subscribe is now applied to individuals as members of employee groups, while previously the sales pressure was directed more largely toward separate individuals than toward groups.

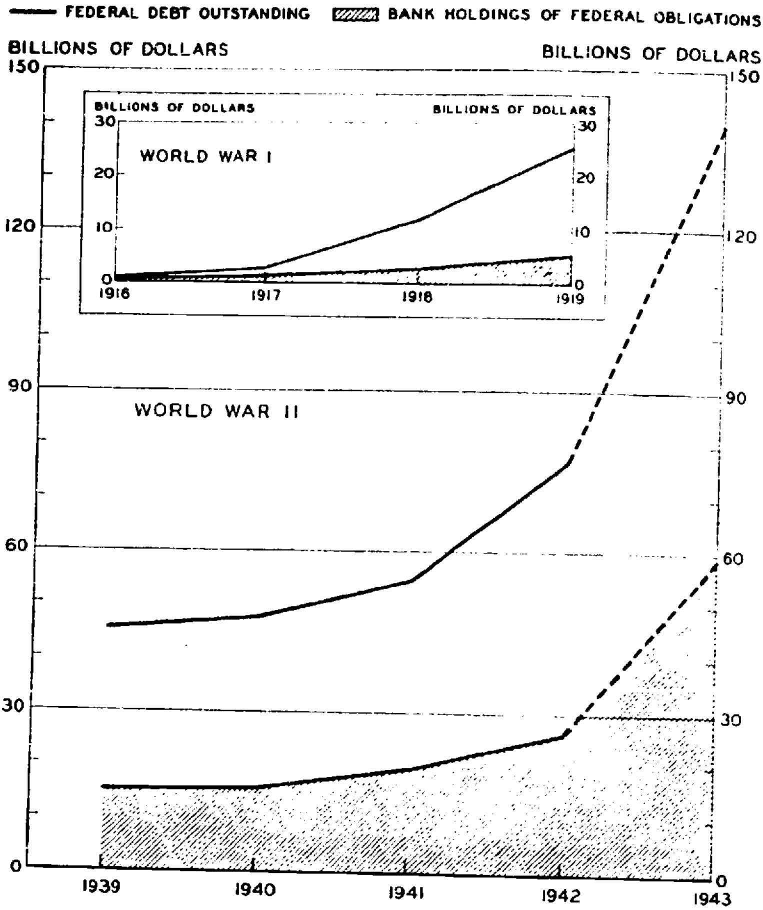
Direct Lending to the Government by Banks

The principal contrast as regards the role of the banks in this war and the last is the growth in the direct purchase of government securities by commercial banks. It is this that constitutes both the major contribution of banks to war financing and the most distinctive feature of Treasury policy in the Second World War.

The magnitude of bank investments in government securities during the two wars, as compared with total federal debt outstanding, is indicated in Chart I. In the First World War commercial banks were a minor, though by no means unimportant, lender to the government. Today they furnish a larger total than any other source, and at times more than all other sources combined. In the first nine months of 1942 about 60 percent of net borrowing by the Treasury was from commercial banks. Moreover, bank holdings, which failed in the last war to keep pace with the increase in Treasury borrowing, now form a rising proportion of the total federal debt outstanding.

The scale of recent bank lending to the government has been spectacular, both by itself and in comparison with the last war. In December 1942 banks purchased government securities amounting to over 5 billion dollars. During the entire period from the middle of 1916 to the middle of 1919, on the other hand, commercial banks increased their holdings of government securities by less than 4.4 billion dollars. Thus in a single month of 1942 the commercial banks of this country bought considerably more government securities than they acquired during all of the First World War. At the end

CHART I — Federal Debt Outstanding, and Bank Holdings of Federal Obligations, World Wars I and II[a]



[a] All data are for fiscal years, and are plotted as of June 30. Data on federal debt outstanding (interest-bearing debt, direct and guaranteed): for World War I, from Treasury Department, *Bulletin* (June 1942) p. 21; for World War II, except 1943, from Treasury Department, *Bulletin* (October 1942) p. 22. Data on bank holdings of federal obligations: for World War I, from *Federal Reserve Bulletin* (July 1941) p. 664, covering "member banks" and "other commercial banks"; for World War II, except 1943, from respective Reports of the Federal Deposit Insurance Corporation, covering all insured commercial banks. Both figures for 1943 are estimates based on data published in *Federal Reserve Bulletin* (November 1942).

of June 1919 they held a total of something over 5 billion, an amount that is almost identical with purchases of government securities by banks in December 1942. At the end of the fiscal year 1942-43, according to present indications, they will hold government securities in excess of 60 billion.

Government borrowing during the First World War was based chiefly on Treasury obligations in the form of short-term certificates of indebtedness and the longer-term bonds and notes. The former, which constituted the bulk of the floating debt, consisted mainly of loan certificates or tax-anticipation certificates, issued in anticipation of income to be obtained later from the sale of bonds or from taxation.[4] The other group of obligations included long-term bonds offered in four successive Liberty Loan issues at different dates during 1917 and 1918, and Victory notes, having a maturity of four years, which were offered some months after the Armistice.

The sale of short-term Treasury certificates was a way of obtaining funds in advance of the elaborately planned Liberty and Victory Loan drives. One might even say that in large measure the latter were funding operations whereby short-term debt was converted into long-term debt. It was expected that by selling certificates at intervals, and having them mature at a rate to correspond to the yield of bond sales, a fairly even flow of funds into and out of the Treasury could be maintained. As will be seen later, this ideal adjustment of certificates to bond sales was not fully achieved. The total amount of loan certificates issued between April 1917 and May 1919 came to 17 billion dollars. These securities had maturities ranging up to five months, and for the most part bore interest at rates of from 3 to 4½ percent a year.

Because of their short maturities and satisfactory yield the loan certificates were of a character to appeal to banks. Prior to the Third Liberty Loan a system of quotas for the purchase of certificates was introduced, and the Secretary of the Treasury sent a telegram to every bank and trust company in the country urging it to subscribe. Before the Fourth Liberty

Loan campaign the banks were virtually ordered to subscribe to certificates at a monthly rate equivalent to 5 percent of their gross resources. Whether the use of such strong pressure was necessary to the success of the borrowing operations can hardly be determined, but it seems certain that it served to provide a wider and more even distribution of the certificates among the banks of the country than would otherwise have obtained.

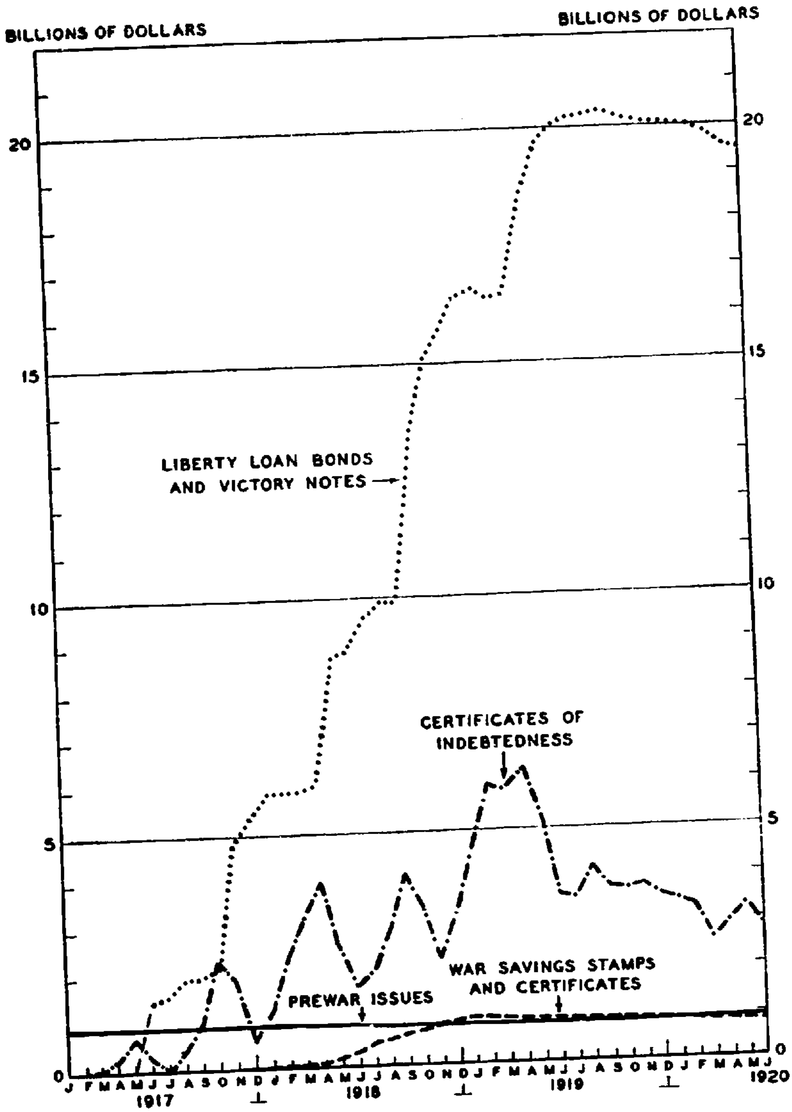
The amounts of certificates outstanding at different dates, and their relation to other types of government debt, are shown in Chart II. It will be observed that the total of all types of Treasury certificates outstanding reached a maximum of 6.3 billion dollars in April 1919. At the end of June 1919 almost half of all certificates outstanding were in the portfolios of commercial banks. The peak of the national debt was reached in August 1919. By that time the Victory Loan campaign was successfully over, receipts from taxes had begun to exceed receipts from instalments paid on Victory notes, and there was no longer any need for loan certificates. Accordingly, the Treasury announced their discontinuance. Tax-anticipation certificates, however, continued to be used. In addition to Treasury certificates, the banks purchased a considerable volume of long-term bonds.

Changes in commercial bank holdings of government obligations in relation to total federal debt are shown in the following tabulation, in which value figures are for the end of June and are in millions of dollars.[5] It is seen from these

	1916	*1917*	*1918*	*1919*	*1920*
Bank holdings of government securities	$753	$1,545	$ 3,215	$ 5,143	$ 3,751
Total federal debt	972	2,713	11,986	25,234	24,061
Percent of debt held by banks	77.5%	56.9%	26.8%	20.4%	15.6%

figures that out of an increase in federal debt of 22.5 billion dollars between the middle of 1917 and the middle of 1919, about 3.6 billion, or 16 percent, was acquired by commercial banks.

CHART II — THE FEDERAL DEBT, BY TYPES OF OBLIGATIONS, WORLD WAR I[a]



[a] Based on Treasury Department. *Bulletin* (June 1942) p. 21.

While the total of government obligations held by banks increased as the federal debt expanded, the volume of bank investment in government securities was not greatly affected by the dates of loan flotations. This reflects the roughly complementary character of the two forms of government obligation, the sale of long-term bonds to banks being accompanied by the retirement of short-term certificates. The relation of short-term to long-term debt is shown in Chart II. While the total of certificates, and therefore the size of the floating debt, continued to grow during the period of war financing, it did not increase as rapidly as the funded debt. The ratio of floating to total debt tended to fluctuate, rising before a new bond issue and falling thereafter.

The theory of loan certificates calls for a close coordination between the retirement of such certificates and the issue of bonds. But in practice the two operations failed, for a number of reasons, to synchronize as closely as had been anticipated. At the time loan certificates were issued, the amount, date of issue and rate of receipts from bond issues were uncertain. This made it impossible to arrange maturities of certificates in such a manner as to coincide with receipts from bond sales. Moreover, while loan certificates were convertible into longer-term government securities as issued, banks showed a tendency to hold on to certificates because of their attractiveness as earning assets. In order to overcome this tendency the government undertook to force their conversion by announcing that it would withdraw deposits from banks that failed to pay at least 50 percent of their loan subscriptions in the form of certificates. This was only partially successful in hastening the retirement of certificates.

Commercial bank holdings of government securities, both short-term and long-term, reached a peak of more than 5 billion dollars in the middle of 1919. For member banks, government securities at that time amounted to 17 percent of total earning assets, while loans and discounts amounted to 70 percent. It is significant that in June 1939, before the outbreak of war in Europe, investments in the form of government debt alone constituted nearly as large a proportion of the total earning assets of commercial banks as total loans and discounts. At the start of the present war the banks had invested much more heavily in government securities than they had at the end of the earlier period of war finance.

The start of heavy lending to the government by commercial banks may be said to date from the period of deficit financing beginning in 1931. Between June 1934 and June 1941 the federal debt increased by 21.9 billion dollars. During the same period commercial bank holdings of government obligations rose by 9.1 billion, an amount representing over 41 percent of the total increase in federal debt during those years; at the end of June 1941 banks held 19 billion out of a total of slightly less than 55 billion dollars of government debt. Since that time the increase in debt has been considerably more rapid than before; but the banks' purchases of government securities, while also much greater, did not, at first, keep pace with the growth in total debt.

Methods of war financing in the two periods differ markedly with respect to the relations between short- and long-term borrowing. The dovetailing of short- with long-term financing, which was so important a feature of the earlier period, has not this time been necessary, inasmuch as long-term borrowing has provided a more regular flow of funds to the Treasury. Formerly the use of short-term obligations was dictated by the irregularity of receipts from taxation and from long-term borrowing. The latter factor has not been significant thus far in the present war. Resort to certificates in the present war has been influenced mainly by the lower rates obtainable on short maturities and by the needs of different types of lenders. The proportions of short-term debt to total interest-bearing government debt outstanding at the end of June in the two war periods are as follows:

First World War	*Second World War*
1917 — 10.1%	1940 — 18.1%
1918 — 14.2	1941 — 15.1
1919 — 14.4	1942 — 17.1
1920 — 11.5	

A considerable volume of present borrowing is in the form of War Savings Bonds. They are technically redeemable on demand, and for that reason are sometimes referred to as part of the short-term debt.[6] The war savings certificates of the earlier war, which were likewise redeemable in advance, might perhaps be included with the short-term debt of the first period, and the redeemable securities of this war, which consist primarily of bonds and tax notes, with the short-term debt of the present period. If these various redeemable obligations are classified as short-term, the proportion of short-term borrowing is much greater in this war than in the last, as is evident from the following figures, based on end-of-June totals:

First World War	*Second World War*
1917 — 10.1%	1940 — 25.6%
1918 — 17.2	1941 — 24.5
1919 — 18.2	1942 — 35.9
1920 — 15.0	

For all classes of banks, government obligations constitute a growing proportion of total earning assets, and *per contra*, loans and discounts constitute a decreasing proportion. Even before the formal start of hostilities in the two periods the relative importance of investments, and particularly investments in the form of government securities, was very different. Thus in June 1917 government obligations represented only 4 percent of total earning assets, while in June 1941 they constituted 42 percent.

While all banks have participated in the increased lending to the government, they have differed with respect to the form of lending. As would be expected from their position as holders of correspondent balances, the larger city banks have, in general, concentrated on securities having shorter maturities, while country banks, with a relatively high ratio of time deposits, have taken a larger proportion of longer-term securities.

Bank Lending to the Public

The banks' part in financing a war may involve considerably more than supplying the Treasury with necessary funds. It ordinarily entails the financing of enterprises engaged in war production, and may include lending to individuals in order that they, in turn, may lend to the government.

Neither of these types of lending has increased in the present war to the extent that it did in the last war. While a fairly substantial rise in total loans and discounts took place from the middle of 1939 to the end of 1941, the increase was slight after our entry into the war. Despite the great expansion in production and the far-reaching transformation of industry that have taken place, various factors have operated to restrain bank lending to business concerns and individuals. Among them are the extent of lending by government agencies, heavy current disbursements by the Treasury on government contracts, the restriction of consumer credit and the elimination of many lines of consumer goods production, and the absence of a policy of lending to individuals on the security of government bonds.

Between the outbreak of war in Europe in 1914 and our entry into the war in 1917 loans and discounts of national banks rose by 36 percent. The total continued to rise thereafter at about the same rate until 1919, when the rate of increase became still more rapid. A considerable proportion, at times a major proportion, of the increase in loans by national banks that took place between 1917 and 1919 was in the form of loans on the collateral of government bonds.

Loans of this type, which were popularized under the slogan "Borrow and Buy," constituted one of the distinctive features of financial policy during the First World War. A customer of a bank was allowed to buy a government bond and pay for it with the proceeds of a loan secured by the bond itself. Since the loan was repaid either currently or out of a deposit which had been accumulated gradually, the effect was similar to the purchase of a bond on the instalment plan.

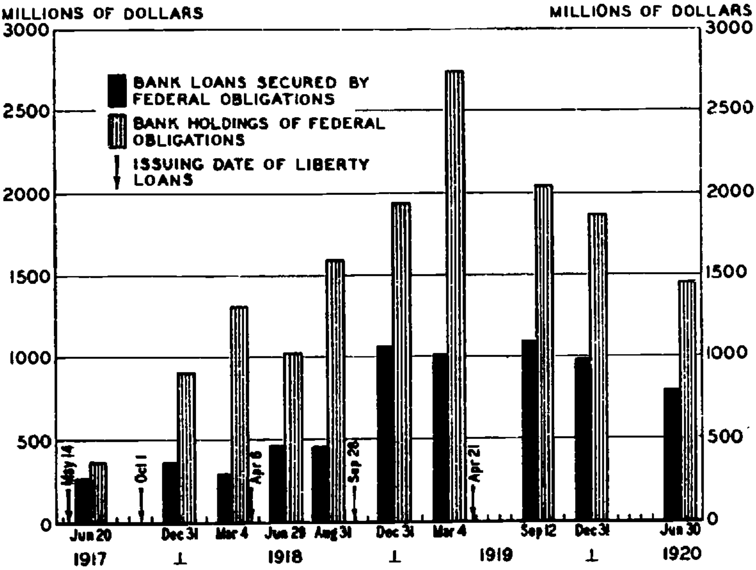
The amount of such loans by national banks is shown in Chart III, which also indicates their importance in relation to total Liberty bonds, Victory notes and certificates of indebtedness owned by banks. While these loans were technically of a private character, their effect was to make bank credit indirectly available to the government. There can be little doubt that the action of the banks in lending to their customers on the security of government bonds contributed materially to the success of the Liberty and Victory Loan drives.[7] On the other hand, considerable dissatisfaction was expressed at the time and subsequently with respect to the operation of the policy of borrow-and-buy. Banks experienced some difficulty with the loans, and their general effect was held to be inflationary.

Total loans and discounts remained relatively stable in amount during the first year of the present war, notwithstanding substantial changes in some categories of loans. The small amount of bank lending to the public constitutes one of the most conspicuous contrasts in methods of financing this war and the last. Instead of financing business directly, banks have lent to the government and the government has done the financing. The net expansion in bank credit, while much greater than in the last war, is not so much greater as might appear from considering only the growth in bank lending to the government. As war financing proceeds a considerable expansion in certain types of loans may occur, but the predominance of investments in government securities is assured.

FEDERAL RESERVE BANKS AND WAR FINANCING

It has been the experience in this country and abroad that wars produce consequences of particular significance to the central banking organization. The magnitude of the central bank's tasks as fiscal agent, custodian of reserves and controller of credit is enormously increased. At the same time the central bank must accommodate its policies more closely than in peace to policies of the Treasury and other branches

CHART III — NATIONAL BANK LOANS SECURED BY FEDERAL OBLIGATIONS, IN COMPARISON WITH NATIONAL BANK HOLDINGS OF FEDERAL OBLIGATIONS, 1917-20[a]



[a] Based on Annual Reports of the Comptroller of the Currency for 1917-20. Federal obligations here referred to consist of Liberty bonds, Victory notes and certificates of indebtedness.

Data on bank loans secured by federal obligations: for December 1917 through March 1919, taken from actual figures; for June 1917 and September 1919 through June 1920, derived from the reported figures on government securities held as collateral for loans, with a downward adjustment of 12 percent to allow for the fact that more than 100 percent collateral was held against the loans.

Data on bank holdings of federal obligations: except for 1917 taken from actual figures; for June and December 1917, derived by removing the banks' holdings of prewar issues from their total reported holdings of federal obligations.

of the government. War underscores the vital importance of central banks, and may strengthen their standing and prestige, but for a time at least it drastically reduces their independence. Moreover, the aftermath of a war is likely to bring a host of troublesome problems for the central banks.

Federal Reserve Operations During and After the Last War

The outbreak of war in 1914 preceded by a few months the start of operations by the Federal Reserve System. Thus the First World War provided an immediate testing. Its success in meeting this test established it firmly in the American financial structure. As a result of the war experience its accomplishments were widely recognized and it attained size, power and prestige. But all this was a prelude to a troubled period extending from the end of the war through the depression of 1920-22. If the war years brought the new system unrivaled opportunities for growth and development, the subsequent years of readjustment provided the occasion for extravagant attack and vituperation.

In their role as fiscal agents the Federal Reserve Banks occupied a central position in the financial operations of the last war. In each of the Reserve Districts the Governors of the Reserve Banks headed the regional loan organization. Reserve Banks were responsible for issuing securities and handling funds resulting from their sale, and for sending out the advertising matter used in the loan campaigns. Some conception of the scale of these operations is afforded by the estimate that during the Third Liberty Loan campaign seven tons of material advertising the loan were mailed out daily, including Sundays, for distribution in the Chicago Reserve District alone. The total amount of such material allocated to the Chicago District during that one drive was three hundred tons. This included, for instance, one poster for every twenty-five persons in the District. The use of posters and similar displays probably exceeded any advertising effort ever made before or since.[8]

The added services performed by the Reserve Banks in connection with war financing entailed a very substantial cost to them, and the Treasury provided no reimbursement for this added expense. The growth in volume of Reserve Bank business was so great, however, that these years were by far the most prosperous in the entire history of the Reserve System. During the present war Reserve Banks receive compensation for many of the direct expenses incurred on behalf of Treasury financing. It is worth noting that in this war, as in the last, the Reserve Banks formulate policies relating to fiscal agency operations on instructions from the Treasury rather than from the Board of Governors.

At the end of June 1919 the Federal Reserve System held government obligations amounting to 232 million dollars, or just under 1 percent of the outstanding federal debt. This was in addition to loans extended on the collateral of government bonds. The proportion of outstanding certificates of indebtedness held by the Reserve Banks amounted to 5.6 percent of the total outstanding on June 27, 1919.

An important division of Federal Reserve activities, and one involving discount and open market policies, had to do with member bank reserves. Inasmuch as credit expansion by the banking system was conditional upon the existence of adequate reserves in the hands of individual banks, this phase of the Reserve Bank operations was clearly of fundamental significance. The principal method whereby member banks acquired additional reserves was through collateral loans and rediscounts at the Federal Reserve Banks. The total of Reserve Bank loans and discounts rose from 20 million dollars just prior to our entrance into the war to 2,200 million in November 1919.

The discount policy of the Federal Reserve was strongly influenced by consideration of government financing. At the very start of the Liberty Loan program the New York Federal Reserve Bank established a lower rate on loans secured by Liberty bonds than on other types of loans; and a differential in favor of such loans was maintained, except for a short interval at the start of 1920, until the middle of 1921. Discount rates, moreover, were set below the level of rates prevailing in the market, the rate on loans secured by Liberty bonds and Victory notes being below the coupon rates, and the rate on commercial paper being below the market rate for such paper. This action was defended on the ground that the abnormal conditions existing in time of war and the Treasury's policy of borrowing at low rates made any other course, in the words of Reserve authorities, "impracticable."

The most important feature of Federal Reserve financing during and after the last war consisted of granting loans to member banks on the collateral of federal obligations. These reached a peak of nearly 2 billion dollars in May 1919; at that time they represented over 91 percent of all Federal Reserve loans and discounts. The Reserve Bank credit made available in this way helped to provide a substantial portion of the reserves upon which the growth of deposit credit was based. Open market operations, on the other hand, were of relatively small proportions, consisting of purchases amounting in all to only about 300 million dollars.

In order to increase the ability of the Reserve System to meet the demands made upon it, steps were early taken to concentrate legal reserve money in the hands of the Reserve Banks. Patriotic appeals were addressed to member banks and others to induce them to turn in gold. Where formerly a considerable proportion of required reserves could be held in the form of vault cash, member bank reserve requirements were changed in 1917 to provide that all legal reserves must be in the form of deposits with the Reserve Banks. The purpose of this change was primarily to compel them to transfer gold to the Reserve Banks. The proportion of monetary stocks of gold held in the Reserve Banks rose from 13 percent at the beginning of January 1915 to 26 percent two years later, and reached 68 percent at the beginning of 1919 and 74 percent at the beginning of 1920.

The ability of the Federal Reserve System to meet banks' demands for accommodation was partly the result of the success of the new central banking organization in assuming a dominant position with respect to basic gold reserves. Upon the entry of the United States into the war the movement of gold, which had been heavily in the direction of the United States, began to turn outward. Soon afterward the export of gold was forbidden except under license. Control over foreign exchange was considered necessary in order to prevent an outflow of gold from interfering with the policy of credit expansion. The task of administering the licensing of gold for export was placed in the hands of the Reserve Banks.

The task of accommodating the financial structure of the country to the exigencies of wartime needs was not confined to the Federal Reserve System. A considerable degree of voluntary control was exercised over the New York money market by the financial community itself. The Money Subcommittee, created as part of the Liberty Loan organization, also undertook to assist in maintaining orderly conditions in the market.[9] At its first meeting in September 1917 this committee decided to make arrangements with a large number of banks and trust companies to accumulate funds for use by the committee in preventing the government borrowing operations from forcing rates up too far. By the first of October 200 million dollars was available for the committee to administer at its discretion. The committee functioned as expected until the second half of 1918, and was given a large share of the credit for maintaining short-term rates at levels of 6 percent or below. Governor Strong later declared that the work of the committee, by protecting the market for securities generally, was of great help in assuring a satisfactory market for government obligations. By August 1918 market sentiment had begun to alter, and support was no longer required.

Immediately after the Armistice a slight recession in industrial production set in, and this lasted until early in 1919. From March onward a speculative situation developed which grew steadily more pronounced. In January 1920 the New York Federal Reserve Bank raised its rediscount rate from 4¾ to 6 percent, and four months later to 7 percent, where it remained for a year. Opposition to restrictive measures of this sort was, of course, to be expected; it was rendered especially violent by the sharp deflation of agricultural and general commodity prices beginning in May 1920. The chorus of denunciation was led by the agricultural groups, who blamed the Federal Reserve for the recession of farm prices from their inflated postwar level. The president of the American Cotton Association demanded that "the Federal Reserve Board and Wall Street divorce relations and give us a financial machinery that will function for the business of the people of the country and not for any vested wealth," and he went so far as to predict a repetition of Andrew Jackson's bank war.

The critics pointed to the large profits realized by Reserve Banks as proof that discount rates were excessive. Some bankers also joined the opposition, declaring that high discount rates either denied banks the services of the Federal Reserve System or forced them to charge their customers usurious rates. Inasmuch as the purpose of the high discount rate policy was to curb credit expansion, this criticism shows a strange lack of understanding of the methods and motives of central bank procedure. Nevertheless, Governor Strong felt himself on the defensive and declared he was "mortified" that earnings were so high, adding that "we do not want those earnings." He explained the high profits on the basis of the large volume of business transacted rather than the high rates imposed.

The Federal Reserve was, in effect, caught in a cross-fire of criticism. On the one hand it was attacked for having maintained too liberal a policy during and immediately after the war, and of having thereby contributed to inflation. On the other hand it was accused, particularly by the agricultural groups, of having brought about the postwar collapse in commodity prices by raising its rates too high. In answering critics of Federal Reserve policy Governor Strong minimized the possible effectiveness of high discount rates as a means of checking inflation. He argued that prices, certainly in the early days of the war, "advanced in response to competitive bidding which could not be controlled . . . and the Federal Reserve System was a bystander . . . of that proceeding." The credit expansion that took place during the war he characterized as "inevitable, unescapable, . . . necessary, and . . . defensible." He further declared that "had we endeavored to force economy — economy of credit and economy in consumption of goods — upon the people of the United States by discount rates, we would have been inviting disaster."

In defending the Reserve System against the charge of having pursued a deliberate deflationary policy, Governor Strong quoted from the *Federal Reserve Bulletin* of March 1920, shortly before the onset of the postwar depression:

"The expansion of credit set in motion by the war must be checked . . . Deflation, however, merely for the sake of deflation and a speedy return to 'normal' — deflation merely for the sake of restoring security values and commodity prices to their prewar levels without regard to other consequences, would be an insensate proceeding in the existing posture of national and world affairs."

Governor Strong again reverted to the idea that the Federal Reserve had been powerless to withstand economic tendencies. In this instance he declared that:

"Irrespective of any policy that might have been adopted by any particular bank or system of banks . . . what has happened was bound to happen anyway. This great wave of expansion of prices had reached its climax and it was bound to break."

The final report of the Congressional Committee which investigated the financial record of the war and postwar period, notwithstanding its rather measured comments, supported the view that the credit policies of the Federal Reserve left much to be desired. The committee concluded that discount policy had been too greatly subordinated to the wishes of the Treasury, and particularly to the desire of the Treasury for easy money. It was suggested that the advantage of low rates thus made possible on government borrowing was more than offset by the resultant high prices.

The Committee maintained that an earlier resort to firmly restrictive measures would have diminished the difficulties of 1920-21, which they regarded as the culmination of "a period of expansion, extravagance, and speculation, the like of which has never before been seen in this country or perhaps in the world." By the time restriction was seriously begun, the inflationary process had gone too far to be brought safely under control. Finally, the Committee characterized as inexcusable the failure of the Reserve System to ease discount rates earlier than it did after the onset of the recession in 1920.[10]

Federal Reserve Operations in the Present War

As the capstone of the country's banking organization the Federal Reserve System has had a central part to play in the financial program of the present war. The Open Market Committee has been called upon for advice and consultation, and the various regional loan committees have been placed under the direction of Reserve Bank presidents. The mechanical operations of distributing Treasury obligations have been conducted by the Federal Reserve Banks, activities that entail a great amount of additional work. Reserve Banks have been compelled to add entire divisions to their organization, the increase in personnel amounting in some instances to as much as 50 or 60 percent within a period of a few months. Besides the added work growing out of the issue and redemption of Treasury obligations, operations have expanded on account of the increased volume of payments to and from the Treasury. All of this parallels fairly closely the experience of the Federal Reserve System in the last war.

A new but important phase of the activities of the Federal Reserve Banks as fiscal agencies for the government has to do with the administration of credit guarantees. The War and Navy Departments and the Maritime Commission have agreed to guarantee loan contracts entered into in connection with war production. While general rules were laid down, the Federal Reserve Banks have been given the responsibility, subject to approval by the guaranteeing agencies, for arranging loans and such guarantees as may be suitable to the circumstances. The broadening scope of the Reserve Banks' activities is shown by the fact that they have been instructed to deal with commercial banks regardless of whether the latter are members of the Federal Reserve System.

The Reserve Banks have also engaged in operations of a more typically central bank character. It is to be noted that the position of the Federal Reserve System, in relation to its own and member bank reserves, is considerably altered from what it was during the last war. This is largely because, in addition to the lessons of a quarter century of varied experience, it possesses powers and resources far greater than it had at that time. The most important of its newer instruments of central bank policy is the authority to change the reserve requirements of member banks. A change in the volume of free reserves can now be brought about, within the limits imposed by the law, merely through the issuance of an order by the Federal Reserve Board announcing a change in the legal reserve requirements. Unfortunately this new and powerful instrument of control has thus far proved somewhat unwieldy in its operation. Reserve authorities continue to rely mainly upon the more flexible instrument of open market operations.

In the middle of 1942 the Reserve authorities began to make reserves available in substantial amounts. The need for reserves was the result of two principal factors, the increased volume of currency in circulation and the expansion of deposits consequent upon heavy buying of government securities by banks. Since the reserve stringency was local to New York and Chicago, rather than general, the action with respect to reserves was directed primarily toward these centers. One of the first steps was to reduce reserve requirements for central reserve city banks by successive stages, while leaving them unchanged for other classifications of banks. This action was made possible by an amendment to the Federal Reserve Act which was approved in July 1942. The Federal Reserve Banks thereafter provided additional reserves through open market operations, principally in the New York market.

At about the same time the Reserve authorities modified the regulations governing the granting of loans by member banks at times when reserves are temporarily deficient. The effect of the change was to make it possible to utilize bank reserves more fully than before. It served to remove still another obstacle to the extension of bank credit.

Open market purchases by the Federal Reserve System have been dictated by the twofold purpose of increasing reserves and supporting the price of government securities. In pursuit of the latter objective, the policy was adopted of maintaining the pattern of rates existing on government obligations: the Federal Reserve undertook to make whatever purchases were necessary to accomplish this end.[11] In the autumn of 1942 the Reserve Banks, as a result of the unexpectedly cool reception given a large Treasury operation, bought a billion and a quarter of government securities in a little over six weeks. At about the same time discount rates were cut in order to encourage the use of Reserve credit by member banks, and soon afterward the president of the New York Federal Reserve Bank promised the member banks of his District that "banks will be provided with reserves, by one means or another, as additional reserves are needed."[12] Thus the Reserve Banks have resorted to a variety of techniques — changes in reserve requirements, open market operations, and discount policy — to meet the needs arising out of war financing.

An important extension of the principle of supporting the market for government obligations was introduced at the end of April 1942. Although preferential rates had been employed before, their introduction for the present purpose was described by the Reserve authorities as "a new instrument of central bank policy." It consisted of an undertaking on the part of the Reserve Banks to purchase, at a price to yield 3/8 percent per annum, all Treasury bills offered. By a later modification the Federal Reserve Banks agreed to resell as well as buy Treasury bills at a price to yield 3/8 percent. The purpose of this action was to facilitate to the fullest possible extent the purchase of government securities by banks. Its effect was to make bills as good a source of liquid funds for commercial banks as cash itself. It is of great importance in broadening the market for short-term government securities and in contributing to the liquidity of the entire commercial banking structure.

So far as questions of war financing are concerned, the most important change that has taken place in the Federal Reserve System since the last war is the tremendous increase in its resources. During the previous war, as was mentioned earlier, reserves were so limited that special steps were taken to insure their adequacy. A point was reached after the war when various of the Reserve Banks were able to satisfy the legal requirement only by extensive borrowing of reserves from other Reserve Banks. The possibility of such a reserve stringency arising in the present war is so remote as to appear completely out of the question. The reason for the extreme ease in the reserve position of the Reserve Banks lies primarily in the heavy flow of gold to this country from 1934 to 1940.

At the time the United States entered the war in 1917, reserves of the Federal Reserve Banks amounted to slightly less than 1 billion dollars, and they rose to a peak of 2.2 billion in 1920. Despite this increase the expansion of deposits and the increase of currency in circulation during the war and immediately afterward placed a continuing strain upon reserves. While reserves were always legally adequate for the Federal Reserve System as a whole, the margin of excess was never very great, ranging from 200 to 800 million. At the end of 1941, on the other hand, reserves totaled 20.8 billion dollars, as compared with minimum requirements of approximately 8.4 billion.

These changes in the powers and reserve position of the Reserve Banks have great significance in the present war emergency. They make it reasonably certain that the Reserve

System can quickly and easily satisfy any demand for credit that is likely to be imposed upon it. It can do this without any need to alter the law, and therefore without the shock to public confidence that might result if it were to depart from its traditional rules. The Federal Reserve System has been given the dual task, first, of providing the reserve basis for the greatest banking operation of history, and second, of stabilizing the market for government securities at a time when the outstanding debt has grown to proportions never before approached in any country in the world. It is significant that along with the growth of the Reserve System's responsibilities has gone a growth in its strength and resources.

The powers of Reserve authorities are clearly adequate, even apart from any possible change in the law, to provide for the prospective expansion of bank credit arising out of war financing. It is to be hoped that their power and skill will prove equal also to the problems that arise when the immediate emergency is past. One of the most pointed lessons that emerges from the experience of the First World War is that the end of war does not signify the end of central banking problems. Indeed, the most perplexing problems of that entire period were those that arose after the war was over. Not the least part of the added strength of the Federal Reserve System today lies in the fact that it has the experience of those difficult years to draw upon.

TREASURY POLICY IN TIME OF WAR

The amount collected from taxation in the present war is considerably in excess of what it was during the First World War. But federal expenditure has likewise risen greatly, with the result that the proportion of tax revenue to total expenditure is very close to what it was at that time.

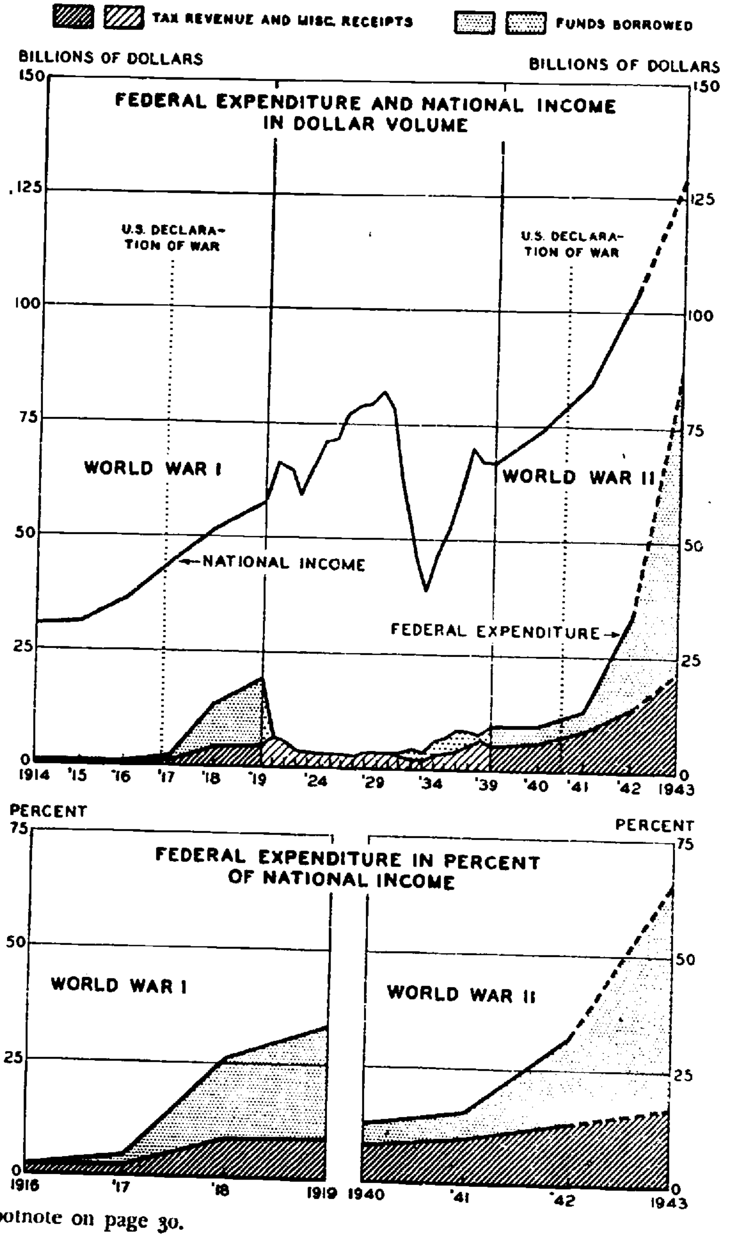
Charts IV and V present a comparison of the distinctive features of Treasury financing in the two wars. It is worth observing that in 1915-16 federal expenditure represented less than 2 percent of national money income, while in

1938-39 it absorbed almost seven times this proportion. At the peak of spending in the last war, expenditure was nearly 33 percent of national income; in the fiscal year 1942-43 it is expected to be about 66 percent. In 1918-19, the year of heaviest spending in the last war, receipts from taxes amounted to about 25 percent of total expenditure, a rate slightly below expectations for the present fiscal year. Total taxes are today taking a much larger share of national money income than in the last war; and personal income taxes constitute a larger proportion and taxes on corporations a smaller proportion of total taxes than before.

One of the agreeable surprises in connection with the Revenue Act for 1917-18 was the great excess of tax yield over expectations. Where calculations called for 3.4 billion dollars the amount realized was 3.7 billion; the excess profit tax, which was the most important single source of tax revenue, was expected to produce 1.2 billion and instead brought in 1.8 billion. On apparently arbitrary grounds it was decided that one-third of expenditure should be covered by income from taxes, and the wartime revenue bills were formulated with this approximate ratio in mind.

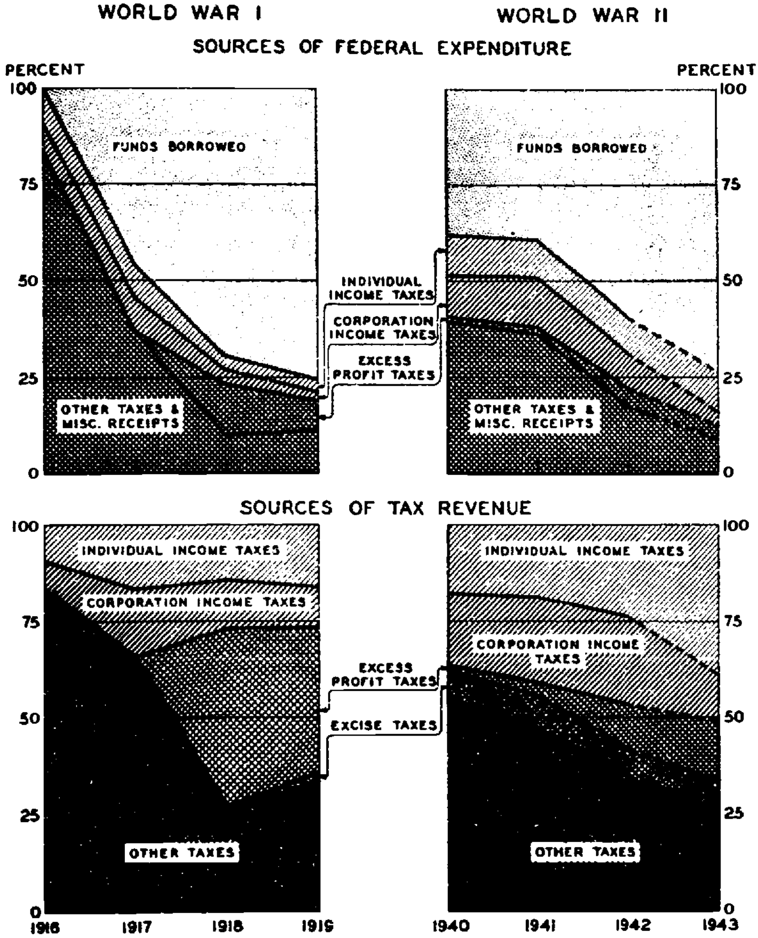
As compared with the First World War, Treasury policy in the present war has been characterized by heavier taxation of the high income groups and relatively greater borrowing from the lower income groups of the population. Rates of taxation on individual and corporate income and on profits have been pushed to new heights. It is worth noting that taxation and borrowing from the public are to some extent mutually exclusive methods of obtaining funds. The heavy taxation of higher income groups in recent years has made it more difficult to obtain funds from these groups by borrowing. Exemption levels have been drastically reduced, but the amount collected from lower income groups is comparatively small. War Savings Bonds, introduced to tap incomes in the lower and middle brackets, represent an important fiscal device. Despite their moderate success, however, they have admittedly not succeeded in reducing the level of spend-

CHART IV — SOURCES OF FEDERAL EXPENDITURE, IN COMPARISON WITH NATIONAL INCOME, WORLD WARS I AND II[a]



[a] Footnote on page 30.

CHART V — Sources of Federal Expenditure and of Tax Revenue, World Wars I and II[a]



[a] See p. 30, footnote to Chart IV. In the Annual Reports of the Secretary of the Treasury a breakdown of the figures on internal revenue (individual and corporation income taxes and excess profit taxes) is given for 1915-16 (p. 32) and for 1916-17 (p. 56), but not for 1917-18 and 1918-19. For the two latter years the constituent figures have been estimated by using the same proportions as reported for the calendar years 1917 and 1918 in the *Statistics of Income, 1919*, p. 36; excess profit taxes paid by individuals on 1918 income were not given separately in that source, however, and therefore have been included with the total for individual returns. For 1940-43 figures on the various revenue items are presented in the sources cited in the footnote to Chart IV.

able income to the supply of available consumer goods, that is, in closing the "inflationary gap," which has been the professed goal of Treasury policy.

Judging from the experience of other countries where a much larger share of national money income is taken in taxes, it would seem that still heavier taxation is likely to be attempted. Nevertheless, chief reliance will probably continue to be placed on borrowing. For this reason, and because borrowing is of especial concern to banks, it is appropriate to devote particular attention to this phase of Treasury policy.

Borrowing Methods and Loan Provisions

Perhaps the most conspicuous contrast in Treasury financing in the two world wars has to do with the method of borrowing. In the earlier period, as we have seen, reliance was placed upon a few short, intensive drives characterized by high-pressure sales methods and degrees of compulsion which in some cases approached outright intimidation. Bond sales in the present war have been almost continuous, with War Savings Bonds available on a current basis and so-called "tap" issues offered at frequent intervals. Various devices have been adopted for attracting subscriptions, but individual compulsion has been applied rather sparingly.

In view of the somewhat disappointing results of sales to

Footnote to Chart IV

All data are for fiscal years, and are plotted as of June 30. Data on national income: 1914-29, two-year moving averages of National Bureau estimates; 1930-43, Department of Commerce estimates. Data on federal expenditure and sources of revenue: 1914, 1915, 1921-38, from Annual Report of the Secretary of the Treasury for the fiscal year ended June 30, 1941, pp. 414-16: 1916-20 and 1939-41, from the Annual Reports for the respective years; 1942, from Treasury Department, *Bulletin* (July 1942) p. 68: 1943, from estimates announced in *Federal Reserve Bulletin* (November 1942) pp. 1068 ff. Federal expenditures for 1937 and 1938 are augmented by "net appropriations to federal old-age and survivors insurance trust fund" in order to make data comparable with those for other years: for amounts see Annual Report of the Secretary of the Treasury for 1941, p. 424. In the earlier years expenditures were not always equal to receipts as reported by the Treasury. Adjustments have been made to allow for such discrepancies.

the general public in the first year of the present war, it is worth recalling that persons familiar with the methods used in the First World War were convinced that those methods were effective in achieving their aim of selling securities. A former Assistant Secretary of the Treasury, R. C. Leffingwell, had this to say of the measures employed at that time:

"No one in America was ever allowed to forget that there was a war, that he had a part in it, that that part included buying Liberty bonds or Victory notes, and that to do so he must save money. In the history of finance no device was ever evolved so effective for procuring saving as the Liberty loan campaigns. Everyone was always buying a Liberty bond or Victory note, or trying to pay for one, or getting ready to buy bonds or notes of the next issue. The loan campaigns stand out in my mind as the most magnificent economic achievement of any people." [13]

Moreover, early in the present war Canada adopted a hybrid policy which makes use of well organized drives while retaining continuous sales for those best served by that means.

These considerations presumably explain the changes in borrowing methods introduced in December 1942, changes that went a long way toward meeting the objections raised against borrowing methods in force up to that time. Sales of non-marketable War Savings Bonds continue to be on a current basis, but special offerings of government securities, with terms designed to meet the needs of different classes of borrowers, are to be made at fairly frequent intervals. Bonds intended chiefly for institutional investors are ineligible for purchase by commercial banks until 10 years after issue. The Treasury has indicated, moreover, that it will time its offerings and arrange for payment in a manner to impose a minimum of strain on the market. Active selling campaigns are to be conducted in order to stimulate purchases of the different types of securities. Finally, the earlier opposition to the public's borrowing from commercial banks has been withdrawn in the case of short-term amortized loans on marketable government securities. This is a modest first step toward the borrow-and-buy policy followed in the last war.

The extent of public participation in loans during the First World War is indicated by the accompanying figures showing the approximate number of subscribers to the various issues. Methods of borrowing used so far in the present war have been so different from those employed in the last war that it is not possible to present comparable figures for the public's participation in current lending to the government. Information is available, however, to show the number of individuals subscribing to War Savings Bonds by regular payroll deductions. In November 1942 it was reported that 23,000,000 workers were investing an average of 8 percent of their wages in this manner.

First Liberty Loan	4,000,000
Second Liberty Loan	9,400,000
Third Liberty Loan	18,300,000
Fourth Liberty Loan	22,800,000
Victory Loan	11,800,000

Greater use of high pressure methods in the First World War was perhaps called for by differences in circumstances existing at that time. The public today knows a great deal more about government bonds than it did then. It understands why the government must borrow, and it has a better acquaintance with methods of lending to the government. Consequently there is considerably less need to educate the public on these points. The people, moreover, are more homogeneous than before, and more solidly united behind the war effort. But although the task of selling securities to the public is in some respects simpler than it was in 1917-18, the question has frequently been raised whether more would not be accomplished by a selling campaign making still greater use of the energetic methods of the earlier program.

Provisions attaching to new Treasury issues also show many contrasts with those employed during the last war. Tax exemption is conspicuously absent. War Savings Bonds have been made non-negotiable, and other issues have had their negotiability greatly restricted. Coupon rates on Treasury obligations are much lower than in the last war, and—a still more striking contrast—they have been maintained at an approximately constant level. The problem of converting bonds bearing a low rate into new issues bearing a higher rate, which proved so troublesome in the last war, has not arisen thus far in the present war.

War Savings Bonds carry maturities of 10 or 12 years. Since the Treasury agrees to redeem these securities on demand, though at somewhat less favorable terms, they are technically demand obligations. Nevertheless it seems best, despite this technicality, to regard them as medium-term rather than as short-term debt. Of the total of 35 billion dollars borrowed by the United States in the first ten months of 1942, 50 percent represented securities having maturities of under 5 years, 35 percent from 5 to 10 years, and 15 percent over 10 years. In the first ten months of 1918, on the other hand, a total of 11.3 billion dollars was borrowed; 31 percent consisted of securities with maturities of 5 years and under, the remainder having maturities of over 10 years.

It was noted earlier that during the First World War Treasury borrowing was based chiefly on long-term bonds and short-term certificates of indebtedness. The Victory Loan consisted of notes running from three to four years. While the rates paid on these different obligations, most of them from 3.5 to 4.75 percent, seem high by present standards, they were regarded at the time as remarkably low. It was repeatedly stated, on high official authority, that only the influence of patriotism allowed such low rates to be maintained. The yield on highest grade corporate issues at the time was somewhat above 5 percent.

From the start the Treasury made it the cornerstone of its policy to hold down the interest rate on government obligations. It was argued that adoption of a low rate on the first issue would advertise the soundness of the government's credit and would facilitate subsequent borrowing. It seems more likely that it had the opposite effect. Because of their relatively low coupon rate the bonds of this issue almost at once fell below par in the market. It was thereupon decided that future issues would have to bear a higher coupon. Subscribers to earlier loans were allowed to convert to the later issues carrying higher yields. Conversion rights proved, however, to be a continuing source of confusion; this was one of the annoying consequences of following a somewhat opportunistic policy as regards the terms of borrowing.

Treasury policy with respect to tax provisions attached to the various issues followed an erratic and inconsistent course. Because of their relatively low rates, bonds issued during the First Liberty Loan were made wholly tax-exempt. Tax exemption was somewhat limited in the Second Liberty Loan, and surtax exemption was removed in the Third. In the Fourth Loan interest on bonds of a face value up to $30,000 was exempted from the surtax and the excess profit tax until two years after the end of the war, and certain exemptions were allowed to holders of bonds of the Second and Third Liberty Loans. In the Victory Loan, notes bearing 3.75 percent were made wholly exempt, and those bearing 4.75 percent were made partially exempt, the former being designed for investors of large and the latter for investors of small means. Certificates of indebtedness were exempted from surtaxes and excess profit taxes to a principal sum of $5,000.

The extensive use of tax exemption is partly to be explained by the fact that the Liberty and Victory Loan programs as a whole placed chief emphasis upon investors in the higher income groups. But even granting that tax exemption made it possible to borrow at a lower rate than otherwise would have been feasible, its economic wisdom remains in question. It is worth observing that the tax-exemption provisions were introduced over the protests of many bankers and economists, that they came into increasing disrepute as the years passed, and that they are conspicuously absent in Treasury financing of the Second World War.

Support of the Government Bond Market

One of the troublesome problems confronting the Treasury during the last war was the constant tendency for bonds to fall below par in the market. Various expedients were resorted to in order to support the price of bonds, but they met with scant success. The most direct attempt to support the price of outstanding issues was included in the Third Liberty Loan Act, which authorized the War Finance Corporation to buy Liberty bonds, other than those of the first issue, with a view to supporting their market price. The exception was based on the fact that, with the rising scale of taxation, the fully exempt issues of the first loan had risen to par. The Act provided that 5 percent of the proceeds of new bond sales should be made available as a Bond Purchase Fund. Purchases began early in 1918 and continued until the middle of 1920, when a permanent sinking fund plan was put into effect. The period of greatest activity was during the Third and Fourth Liberty Loan campaigns. In the eight months ending with November 1918 the War Finance Corporation bought government bonds to the amount of 378 million dollars, of which nearly two-thirds was resold to the Bond Purchase Fund. But despite these operations government bonds other than those fully exempt continued to sell below par.

The tax-exempt feature was largely a price-supporting measure. Since its effectiveness was proportional to tax rates, the Treasury asked for a heavy increase in rates in 1918, advancing the argument that this would serve to maintain the price of tax-exempt government bonds. Other provisions, such as those giving favorable rates at the Federal Reserve Banks to borrowing secured by bonds, were likewise expected to strengthen the market value of government securities, but they were attended by very indifferent success.

The Treasury was greatly concerned throughout the war to prevent a depreciation in the market value of outstanding obligations. At one time the Secretary of the Treasury raised the question of the desirability of suspending free dealings in government bonds, but nothing came of the suggestion.[14] After the conclusion of war financing, and partly perhaps because of the retirement of Secretary McAdoo, who had made this his particular concern, the question of maintaining the market value of government bonds gradually sank into the background. The prices of government bonds declined during the second half of 1919, and fell sharply in 1920. By that time government support was no longer of appreciable significance. For all but one of the issues the lowest monthly quotations, ranging from 81.70 to 94.82, were reached in May 1920; the exception was bonds of the First Liberty Loan, which reached their low point, 86.30, in July 1921. This difference in behavior is a reflection of the change in the tax situation, which diminished the value of the full exemption enjoyed by this particular issue.

The tendency during the last war to rely upon indirect and partial measures for the maintenance of security prices contrasts sharply with the situation prevailing today. Since 1937 the Federal Reserve System has undertaken to prevent any decline in the price of government issues from reaching panic proportions. Open market operations of the Federal Reserve System, which were formerly employed to help regulate the volume of member bank reserves and thereby facilitate the control of credit, have come to serve the dual purpose of providing additional reserves and stabilizing the price of government bonds.

The powers of the Federal Reserve to support the price of government securities in this way are very great. The abundance of the reserves assures the banks' ability to expand reserve credit, with which to pay for bond purchases, to the extent of many billions of dollars. Monetary and fiscal powers in the hands of the Treasury could be used to extend this limit still further. Not only is it possible, therefore, for the Federal Reserve to buy government securities in large amount, but it is to be expected that the normal working of the loan program will lead to their doing so. As long as Treasury borrowing from commercial banks continues—assuming that the demand for currency is maintained—additional member bank reserves will be required. To the extent that these are provided by Federal Reserve purchases of government securities in the open market, the functioning of the central bank in supplying the additional reserves will give support to the government security market. By using open market purchases in conjunction with changes in reserve requirements, the Federal Reserve can provide much or little support. Whether the support thus provided will be greater or less than is needed will depend upon many factors. Moreover, the entire policy of attempting to control interest rates in this manner may be challenged. Nevertheless, the existence of this market-supporting mechanism is a highly significant factor in the present financial situation.

Open market purchases during the last war were on a relatively minor scale. A number of considerations help to explain why strong support for government securities was not made effective in this way. In the first place, Reserve authorities were less familiar with open market operations than with the discount rate as an instrument of central bank policy. Moreover, reserves of the Federal Reserve Banks available for making purchases in the open market were never very great. At the same time, member banks did not require additional reserves to the extent that might ordinarily have been expected: the lower reserve requirements provided under the Federal Reserve Act had freed considerable amounts of reserves for use by member banks, and imports of gold from abroad had brought about an expansion in basic reserve money. In addition, banks were exempted from the necessity of holding reserves against government deposits; this meant that creation of large amounts of government deposits imposed relatively little burden upon existing reserve balances.[15] Even when additional reserves were needed by member banks they were usually obtained by loans secured by government obligations rather than by Reserve Bank purchases of securities in the open market. It is true, of course, that if greater use had been made of open market purchases, the need for rediscounting would have been correspondingly less.

The foregoing analysis suggests that effective support of the price of government securities is considerably more feasible in this war than it was in the last. The evidence of the former period with respect to the recurrent tendency for government securities to depreciate cannot be accepted as conclusive in present circumstances. Furthermore, both the delicacy and the magnitude of Federal Reserve operations are increased by the growth in the total amount of government securities. But so, also, is the need to avoid, if at all possible, a material decline in their market value.

Control of the Flow of Funds

The banking mechanism helps to cushion the effects of the government's financial operations, and at no time is the need for such a service more apparent than in time of war. The magnitude of Treasury operations, the scale of payments flowing to the government in connection with taxation and borrowing, and the volume of Treasury disbursements are far beyond those of peacetime. The movement of funds into and out of the market is unavoidably irregular. Left to themselves these operations would have a seriously disruptive influence, with consequences that might impede the functioning of the war economy. A variety of techniques exists for preventing Treasury operations from unduly disturbing the money market; all have this in common, that they tend to provide a movement of funds opposite to that of the Treasury operations.

During the last war the use of short-term Treasury certificates, even though they were by no means perfectly synchronized with bond sales, equalized to a considerable extent the effects of irregular receipts from taxes and loans. Of greater importance, the Treasury made use of the depository system, which had existed much earlier; a considerable proportion of Treasury funds were distributed in different banks, to a total of nearly 10,000, scattered throughout the country. What happened was that banks bought government obligations by placing deposit credits at the disposal of the Treasury. The deposit credits were then left untouched until the

Treasury had need for them in making disbursements. This helped to avoid the drain that would have resulted if the greatly expanded balances of the Treasury had been concentrated in one place. Since banks were not required to hold reserves against government deposits, the expansion in the amount of these deposits imposed no corresponding stringency upon the banks. If funds were not otherwise available with which to meet demands made upon the banks when the government drew down its deposits, the banks were able to obtain the necessary sums by borrowing from the Federal Reserve on the basis of government obligations in their portfolios. In general, it may be said that the action of the country's banks, and of the Treasury and Federal Reserve System in conjunction with the banks, served to offset fairly successfully the irregular flow of funds to and from the Treasury.

A related problem arises with respect to the flow of funds into or out of private use. Capital movements in the United States, as in all other belligerent countries, have come to be almost completely regulated. The importance of such policies to commercial banks scarcely needs to be emphasized. Since banks constitute the most important segment of the country's financial organization and are the custodians of a large share of available resources, measures that interfere with the flow of capital are of major concern to them. Such measures, apart from their immediate effects, are significant for the permanent impress they may leave upon the country's banking institutions.

In the First World War two organizations were set up to direct the flow of capital funds, the War Finance Corporation to facilitate borrowing by enterprises necessary to the war effort, and the Capital Issues Committee to restrict security flotation not vital to the war. During the war period the former dispensed a sum amounting to 306 million dollars, and the latter allowed the issue of securities amounting to 2.9 billion. The Capital Issues Committee restricted security flotation not only by rejecting applications but also by the fact that borrowing operations which otherwise might have been undertaken were discouraged by the knowledge that they would have to be submitted to the Committee.

The Treasury is again making extensive use of depository banks in financing the present war. All incorporated banks and trust companies have been urged to qualify for the deposit of public funds. They are then permitted to pay for their own and their customers' subscriptions by crediting the deposit account of the Treasury on their own books.[16] Deposits are drawn upon only as needed. In contrast with the practice in the last war, reserves are now required against these deposits, and in addition they are subject to the same insurance assessment as any other deposits. Whether these requirements will be maintained remains to be seen.

The machinery that exists today for influencing the flow of funds is vastly more extensive and complex than it was in the First World War. The Securities and Exchange Commission and quite a number of other comparable institutions were unknown a decade ago. The organization most closely resembling the War Finance Corporation is the Reconstruction Finance Corporation which, indeed, came into being as a resurrection of the earlier institution. This organization has the power and the resources to operate on a scale far exceeding that of its forerunner, and it has in addition a record of several years' experience in doing so. Moreover, numerous subsidiaries have been established to carry its activities into different fields.

In addition to the many institutions with power to influence capital transactions, there was inaugurated, in April 1942, the system of guarantees known as Regulation V. Under this procedure the War and Navy Departments and the Maritime Commission agree, as was noted earlier, to guarantee the fulfilment of loan agreements entered into in connection with war contracts. In the following October it was announced that the General Motors Corporation had arranged a billion dollar credit, the largest commercial credit ever extended to a single corporation, in accordance with these provisions. This agreement gave the corporation the right, for a period of $3\frac{1}{3}$ years, to call on approximately 400 financial institutions throughout the country for credit accommodations up to the total indicated.

On the side of restricting the movement of capital, existing machinery is considerably less detailed and specific. There are, of course, many institutions of the types mentioned above; and there are others whose operations, while not primarily directed toward financial problems, are of great significance from the viewpoint of the financial consequences of the war. The War Production Board and the Office of Price Administration constitute noteworthy examples of such organizations. To the extent that price control can be made effective, by means of priorities, rationing and the imposition of ceilings, inflation ceases to be a purely financial problem. The expansion of the circulating medium consequent upon the tremendous volume of borrowing from banks loses something of its forbidding aspect when this fact is taken into consideration. It signifies that machinery exists, as it did not in the last war, for curbing the inflationary forces which war generates; it does not, of course, assure that existing machinery will prove adequate. Finally, so long as the government, by rationing and priorities, can control the supply of materials needed for certain types of production it can govern possible expansion to such a degree as to make control over a company's capital flotation largely superfluous.

IN CONCLUSION

The temptation is strong to attempt, on the basis of our experience in the past war and thus far in this, to draw conclusions that will be applicable now and in the future. Such conclusions must, for the present, be strictly avoided. And even in an interpretation of the evidence thus far presented it must be pointed out that while the course of events in the two wars exhibits a high degree of parallelism, differences exist, both quantitative and qualitative, which are of primary significance.

The fact that our formal entry into the First World War came 32 months, and into the Second World War 27 months after the outbreak of fighting in Europe completely fails to suggest the difference in the pace of our financial involvement in the two wars. In the two years immediately preceding the United States' entry into the war in 1917, the disbursements for the military establishment were reduced. Only two months before that declaration of war Congress was debating whether or not to prepare for war, and another month elapsed before taxes to pay for preparation were actually voted. The period of deficit financing began about the time of our entry into the war in 1917, and deficits did not reach extreme proportions until the following year.

The experience of the Second World War stands in sharp contrast with these years. From a financial and economic viewpoint we had embarked upon a war economy more than a year before Pearl Harbor. It is not merely that we had been supplying the Allies with ships and materials, that we had been repairing their damaged war vessels, that we had been at war in almost every sense except the legal; it was also that federal financing had moved on to a war footing. While budgetary deficits had become hardly less a peacetime phenomenon than balanced budgets had been before 1917, nevertheless the deficit of the twelve months ending in December 1941 was not a peacetime deficit by any manner of calculation. The increase in interest-bearing debt in that period was almost 13 billion dollars. This amount is greatly in excess of the deficit incurred in the fiscal year following the declaration of war in 1917, and is almost exactly equal to the largest deficit we had ever known in our history, that of the fiscal year 1918-19.

Thus the beginning of war financing is to be placed from twelve to fifteen months earlier in the second war than in the first. Moreover, the scale of spending has been heavier in this war, both absolutely and in relation to national income. It must also be remembered that we have the entire period of the first war to look back upon, while the present war period is obviously far from complete: the previous war discloses effects, while the present indicates only trends, with the full effects still to come. All of these reservations must be kept in mind in examining the implications of financial policies in the two periods.

Both war periods are characterized by striking changes in the way banking is carried on. Some of these changes could hardly have come about under normal peacetime conditions, for one of the significant effects of war on banking is that the usual canons of financial policy cease to be decisive. A government must mobilize all the financial resources it may regard as necessary to its war plans, and the banks are socially obligated to go along with that program. Because of the ability of the banking system to create the credit it provides, banks occupy a residual position with respect to government borrowing. What cannot be obtained from other sources, such as taxation and borrowing from the public, must presumably be furnished by the banks.

In ordinary times banks can decide whether or not to acquire particular assets; they can plan their portfolios to give the desired distribution of maturities; and they can express an effective preference as to the rate of interest they will accept on the assets they acquire. These privileges are greatly circumscribed in time of war. Along with the decline in their freedom to act independently, however, may go an increase in the profitability of banking operations.

The First World War marked the beginning of a period of exceptional growth and prosperity for commercial banks. In the four years from the middle of 1916 to the middle of 1920 the number of banks in the United States rose from 25,649 to 28,432 and their total assets from over 27 billion dollars to 46 billion. Since the middle of 1939, shortly before the start of the present war, the number of banks has slightly decreased—declining from 13,569 at that time to 13,399 in the middle of 1942—but total assets, as in the earlier period, have shown a pronounced upward trend, rising from 59.4 to 79.3 billion dollars. It is worth remarking that the present reluctance to charter new banks is favorable to banks now in operation. It signifies that the enlarged volume of business is not divided, as was the case before, among an increasing number of banks.

While earning assets increased markedly in both periods, the character of the increase shows significant differences. Approximately three-fourths of the increase in earning assets from 1916 to 1920 was in the form of loans and discounts. Not all of the added loans and discounts were of a commercial character, since a good many consisted of loans on the collateral of government securities. Nevertheless, the growth in earning assets during the First World War was predominantly in the form of private credit, and the larger part of this private credit was of nominally commercial character. During the present war, however, the situation has been very different: three-fourths of the increase in earning assets between June 1939 and June 1942 consisted of a growth in government obligations. Only one-fourth was in the form of loans and discounts; during part of the period, indeed, the total of loans and discounts exhibited a downward trend.

From the viewpoint of banking changes, the period of the First World War was notable for the expansion in the volume of business and for the beginning of a policy of investing heavily in government securities. Today bank assets are again expanding rapidly, but in this instance the increase consists chiefly of an accentuated concentration in government obligations. The first period initiated a trend toward greater reliance upon investments, but left the character of the banking system substantially as it was. The present period promises to carry the concentration of bank investments in government securities to a point where banking will occupy a fundamentally altered position in the national economy as compared with what it has ever had in the past. This change is of the utmost significance, not only for the conduct and safety of banks but also for their very existence as private enterprises.

The basic principles of Treasury policy in the present war may be summarized as follows:

No undertaking essential to the war effort should be handicapped by lack of funds;

Whatever funds are needed must be provided, for finance is the servant, not the master, of wartime economic policy, and peacetime conceptions of what is sound financial policy cannot be allowed to interfere with the prosecution of the war;

It is desirable to obtain funds by taxation and by borrowing out of current income (that is, to attempt to reduce the "inflationary gap"), but the banks will be called upon to supply whatever of the government's financial requirements are not covered by those means.

The principle that the financial needs of any vital enterprise should be fully met has been repeatedly emphasized. It was exemplified in the establishment of the system of credit guarantees known as Regulation V.

There can be few who would take exception to the view that nothing should be allowed to impede the war effort, that the war must be won regardless of financial or banking difficulties. It may be well to bear in mind, however, that this attitude, too, might prove dangerous: if it is interpreted to mean that any course which takes account of financial or banking difficulties would jeopardize the war effort, it can serve as a ready excuse for the pursuit of careless and irresponsible policies. Supporters of other policies are then placed on the defensive, even though these other policies might contribute as well to achieving ultimate victory, while moderating the risk of inflation. Indeed, it can be maintained with excellent show of reason that policies which foster inflation would by that very fact provide an impediment to the winning of the war.

It was early recognized that the requirements of a war economy could be expected to expand consumer incomes and restrict the supply of available goods, resulting in what is frequently termed an "inflationary gap." Taxation and borrowing out of income have been generally accepted as the ideal means of "closing the gap," a view frequently endorsed by public officials. Unfortunately, expenditure has been rising far more rapidly than receipts from taxation and borrowing out of current national income, and the Treasury, in pursuance of the first two principles noted above, has looked to the commercial banks to supply the remainder of its financial requirements.

The net tendency of these general lines of Treasury policy, so far as banking quantities are concerned, is strongly expansionist. It may be accepted as an assured fact that the Treasury will continue to borrow heavily from commercial banks. A large increase in earning assets in the form of government obligations and a corresponding increase in demand deposits are therefore certainties upon which any discussion of the future policy of bankers and of monetary and banking authorities must be predicated. The precise magnitudes of the increases are contingent upon such unknowns as the length of the war and the nature of the readjustment thereafter; but the increases themselves are certain.

Moreover, war finance, as our experience after the last war demonstrates, does not end with war. On Armistice Day, 1918, the total national debt was 19 billion dollars; nine months later it stood at a point almost 40 percent above this figure, 26.3 billion. The peak rate of government expenditure, in excess of 2 billion dollars a month, was not reached until the month peace was declared, and it continued at that level through January. In other words, we spent money faster after the war was over than while it was going on.

Experience in the present war is hardly likely to repeat exactly the pattern of the last war. War expenditure began relatively earlier this time, and may rise to a plateau rather than to a peak. It is rather unlikely that the rate of spending will move to still higher grounds when peace finally comes; nevertheless it may be expected to remain for some time at a high level, and the national debt to continue to mount for an uncertain length of time. The financial duration of the war, in other words, is certain to extend far beyond its military duration.

The observation that the national debt can be expected to continue its rise after the end of the war is much more than an isolated economic datum. Its practical importance lies in the fact that it suggests the probable continuance of many of those developments that have accompanied the wartime increase in federal debt. It implies a further growth in bank holdings of government obligations, a still greater expansion of deposits, and a continued decline in the capital ratio. In fact, these tendencies may be accentuated, since the conclusion of hostilities is likely to throw a greater immediate burden on the banks by discouraging lending to the government by individuals. At the same time, the end of the war can be expected to render the problem of control more difficult by strengthening popular resistance to the mass of restraints imposed under stress of war.

The clearest lesson that emerges from the financial experience of the last war is that the most critical phase may come when the war itself is over. The course of financial developments in the present war points increasingly to the same conclusion. It constitutes a warning that must not be lost from view.

The increase in government control over and participation in economic affairs during the past decade is far more than a change in the practice of government. It represents a basic change in our economic environment, and it holds implications of the most far-reaching character. Not the least of these is that it has made more difficult the task of analyzing the probable consequences of economic developments now taking place. It was formerly possible to predicate economic reasoning upon the assumption of a high degree of freedom in the play of economic forces. The increased influence of the government makes it possible that not all the consequences will occur that might be anticipated under less fettered conditions. In other words, the fundamental change that has occurred since the last war in the place occupied by government in economic life has transformed the basis of economic prediction. This calls for the utmost caution in evaluating the probable consequences of present policies and trends.

One is left, then, not with a conclusion but with the statement of a problem. From this problem new questions spring, and these questions are more important and perplexing than any that have been answered. It will be the purpose of later studies to examine questions such as these. For the present, and as the only conclusion that is appropriate here, no more can be done than to specify a few of the questions raised by the foregoing analysis.

What measures need to be examined now with a view to preparing for immediate postwar readjustments?

What can be done to restrain the inflationary tendencies implicit in a greatly expanded money supply?

What can be done in the postwar period to equate money income to the quantity of available goods?

How does the present method of financing through the sale of securities direct to banks compare with the "borrow-and-buy" policy employed in the last war?

What problems does the existence of a large war debt present to the Federal Reserve System, and what modifications in Reserve System structure and policy are called for in order that these problems may be met?

What policies should be formulated now with respect to the eventual retirement of war debt?

What is the significance of the redemption rights accorded to holders of War Savings Bonds? What steps might be taken to prepare for possible future redemptions?

How may the existence of a large public debt and a large volume of deposits affect policies for the maintenance of full employment in the period after the war?

How may the existence of a large volume of government obligations which cannot be sold freely affect the market for government securities?

What modification needs to be made with respect to the interpretation of the significance of capital ratios, and what other criteria may be devised to aid in the guidance of bank policy?

What new problems of liquidity and solvency of the banking system are suggested by the greatly expanded holdings of government securities and the greater concentration of bank earning assets in such holdings?

What are the implications of current changes in bank portfolios in regard to the level and stability of bank profits in the future?

NOTE BY GEORGE E. ROBERTS, DIRECTOR — The present study purports to show the policies and methods by which the government, under the presidency of Woodrow Wilson, financed itself during the First World War, and the policies and methods by which the government, under the presidency of Franklin Delano Roosevelt, has thus far financed itself during the present war, and in preparation therefor. This is a matter of great public interest, but I question the propriety of making it the subject of a publication by the National Bureau.

In the first place, this body was organized more than twenty years ago on the basis of a mutual understanding that it would confine its studies and publications to statistical facts, with no comments beyond those necessary to properly elucidate such facts. In other words, it was not to discuss issues, theories or opinions, or attempt to deal with controversial subjects. It was believed that such a fact-finding body would render a public service by narrowing the scope of many controversies. As a member from the beginning, I cannot conceive how such a society — representative (as our Board is) of many conflicting views — could continue to function on any other basis.

Secondly, *The Banking System and War Finance* undertakes to show the *effects* of war financing on the banking system, and just how the banking system was, and is, used by the government in the two wars — all of which is inextricably involved in the effects of both wars on the economic system as a whole. The first was ended in 1918; President Roosevelt's first term began in 1933; the present war began in Europe in 1939, and our own declaration of entry was made in 1941. But it would be quite impossible to understand the policies of the present administration without having the whole story, from the Wilson declaration of war in 1917 to the present time — which would inevitably include many highly controversial matters.

Dr. Whittlesey is aware of all this, and, mindful of the National Bureau's long-established policy, has sought to avoid such matters as far as possible. This occasions a break in the narrative which certainly would not occur if he were writing for any publisher but the National Bureau. For example, on page 43 he says that "In the four years from the middle of 1916 to the middle of 1920 the number of banks in the United States rose from 25,649 to 28,432," and in the next sentence he says that "Since the middle of 1939, shortly before the start of the present war, the number of banks has slightly decreased—declining from 13,569 at that time to 13,399 in the middle of 1942." Evidently something happened to the banking system between the middle of 1920 and the middle of 1939, but the reader is left wholly in the dark thereon. Moreover, many other sensational events occurred, with important effects on both the economic system and the banking system, and most of them have been acts of the Roosevelt administration. For example: devaluation of the gold dollar, resumption of silver purchases (still continuing), enactments of the AAA, NRA, NLRB, two Guffey coal acts, the Wages and Hours Act, PWA, WPA, also a great rise of the national debt (even before the new war began).

Referring again to war financing, it should be said that the Wilson administration financed most of the earlier war with 4½ percent bonds, while the Roosevelt administration is getting most of its money at about one-half that rate. Moreover, the discount rates of the Federal Reserve Banks during Wilson's administration ranged most of the time between 4½ and 6 percent, while now, in the midst of war, they are only ½ of 1 percent. Why is this? Again Dr. Whittlesey is silent, although doubtless he knows, or has an opinion.

All of which leads me to insist that the National Bureau should not involve itself in controversial subjects.

My chief objection to Dr. Whittlesey's paper is that it fails to mention many phases of the subject which should be mentioned if the National Bureau is to discuss the subject at all.

George E. Roberts

NOTES

1 National money income underestimates the amount available for the support of war financing. Gross national product, on the other hand, tends to overestimate the amount. While neither concept is wholly satisfactory for the comparisons presented in this paper, the former is more familiar and, in addition, estimates regarding it are available for both war periods.

2 At its head was a Liberty Loan Committee of twelve members, headed by Governor Strong of the Federal Reserve Bank of New York. One of the members was made executive manager, and sub-committees on distribution, publicity and the handling of funds were created. Around each of these sub-committees was built a further staff of such size and character as was appropriate for its purpose. Frank A. Vanderlip, who was a committee member, made the interesting suggestion that the speakers' bureaus of the Republican and Democratic parties be revived and incorporated into the publicity organization of the Treasury. In the course of time the Treasury's Speakers' Bureau, with its thousands of Four Minute Men scattered throughout the country, became one of the most effective parts of the entire loan organization.

3 Scarcely an avenue of attack was overlooked. As an example of the methods used, April 21, 1918, was designated as Liberty Loan Sunday, and Secretary McAdoo wrote to 114,000 clergymen asking them to devote their morning sermons on that day to the loan.

The banks, it may be remarked, were subject to pressure the same as individuals. The severity of this pressure seems to have been greater in the early campaigns, a possible indication that compulsion was later unnecessary. The Comptroller of the Currency early announced that he would publish the names of national banks which failed to support the Liberty Loan drives actively. Seventy-three banks were listed as having failed to subscribe to the First Liberty Loan either for their customers or for themselves. A similar list for the Second Liberty Loan included only nineteen names. At about the same time the Comptroller revoked the authority which had previously been granted to organize a certain national bank, on the ground that the applicants had contributed practically nothing to the Liberty Loans.

Later on the practice was followed of publicizing the banks that contributed liberally to the drives, rather than those that failed to do so. The names of banks were published, with the amount of their subscriptions. Citations were made for distinguished financial service, the citation being accompanied by a display card to be exhibited by the bank. Banks were listed on a Roll of Honor. And a hint was circulated that the Reserve Banks would not help laggard banks if they later came to need assistance.

In certain parts of the country where the population was largely German, banks had to face the hostility of their customers if they took too active a part in the loan campaigns. It is difficult to realize from this distance how strong this sentiment was in some localities. Secretary McAdoo issued an announcement that if any bank that was threatened by its depositors would furnish their names the government would undertake to prosecute them for disloyalty. And Iowa passed the so-called "Spite Bank Bill," giving the Superintendent of Banks the power to veto the establishment of new banks. In the debate on this measure it was declared that the law was needed because threats had been made that after the war new banks would be organized to drive out of business banks that had disregarded the wishes of their customers in supporting the war effort.

4 Several other categories of Treasury certificates, of which the following are of particular interest, were issued during the war. "Special debt certificates" consisted of miscellaneous short obligations, such as one- or two-day certificates to cover overdrafts on the Federal Reserve Banks. "Pittman certificates" were issued in connection with the sale of silver to England. A third type, war savings certificates, designed for sale to small savers, was quite similar to the present War Savings Bonds. These were sold on a discount basis, and they bore interest at about 4 percent, ran 5 years or a little less, and originally had a maturity value of $5. A total of 961 million dollars of savings certificates was sold in 1918, and 160 million in 1919.

5 These totals exclude loans secured by government bonds; such loans are discussed below in connection with bank lending to the public.

6 It is important to recognize that policies now followed with respect to financing on long or short terms will affect the freedom of the authorities to pursue particular policies at some future time. The same principle holds with respect to other phases of war finance: present methods are setting the stage for future policies.

7 In addition to borrowing of the type just described, a considerable volume of borrowing on other types of security was used to finance the purchase of government bonds. No accurate measure is possible that would indicate the proportion of bank lending of this character. It is said that many individuals sold other securities in order to obtain funds with which to purchase bonds. Banks supported the market for some of these securities, and the funds so released may be considered to have facilitated the sale of government bonds.

8 Two illustrations out of many will indicate the numerous and ingenious methods resorted to by Reserve officials to assure the success of the war program. A typical example of the propaganda efforts of the different Reserve Banks was a form letter drawn up by Governor Strong of the New York Bank, which individual bank presidents were urged to sign and send to each of their customers. The letter contained a personal appeal urging individuals to practice careful economy, to restrict inventories and in general to cooperate as fully as possible in the war effort. An example of quite a different sort occurred at the time of the Fourth Liberty Loan, when peace seemed near and it was feared that the slackening of the war tension would interfere with the success of the drive. Reserve Bank officials called together the presidents of the six largest life insurance companies, and after pointing out the gravity of the problem induced them to subscribe for 180 million dollars, as against a total of 70 million taken in the three campaigns preceding. The insurance companies were promised that the Reserve Banks would protect them in case it became necessary for them to borrow. For the sake of com-

parison it may be noted that life insurance companies reported net purchases of federal obligations amounting to 2,500 million dollars in 1942. One large life insurance company is said to have made purchases totaling 250 million dollars in December 1942.

9 It may be thought of as supplementing the work of the War Finance Corporation (see p. 35).

10 It is perhaps inevitable that central bank policies should be subordinated to the wishes of the Treasury in time of war. It appears that after the last war, however, the domination of the Treasury was unnecessarily prolonged. There is reason to believe that Reserve Bank officials would have timed their actions better, at least in the earlier postwar period, if they had felt free to do so.

11 The effect of this policy is to render relatively long-term government securities as liquid as those with short maturities. In view of this, the present wide disparity in yield on securities of differing maturity seems hardly justified.

12 It is worth noting that on the day war was declared the Board of Governors issued the following significant announcement: "The System is prepared to use its powers to assure that an ample supply of funds is available at all times for financing the war effort and to exert its influence toward maintaining conditions in the United States Government security market that are satisfactory from the standpoint of the Government's requirements."

13 Quoted in Joint Commission of Agricultural Inquiry, 67th Congress, First Session, *Hearing* (1922) vol. 2, p. 458.

14 Trading in certificates of indebtedness at less than par was prohibited until May 1920.

15 From April 1917 to June 30, 1919, Treasury deposits with commercial banks rose from 35 to 905 million dollars. During approximately the same period total deposits rose from 25.0 to 31.8 billion. Thus 13 percent of new deposits were free of reserve requirements.

16 These accounts are in the name of the Federal Reserve Bank of the district, as fiscal agent of the Treasury.

Relation of the Directors to the Work of the National Bureau of Economic Research

1. The object of the National Bureau of Economic Research is to ascertain and to present to the public important economic facts and their interpretation in a scientific and impartial manner. The Board of Directors is charged with the responsibility of ensuring that the work of the Bureau is carried on in strict conformity with this object.

2. To this end the Board of Directors shall appoint one or more Directors of Research.

3. The Director or Directors of Research shall submit to the members of the Board, or to its Executive Committee, for their formal adoption, all specific proposals concerning researches to be instituted.

4. No report shall be published until the Director or Directors of Research shall have submitted to the Board a summary drawing attention to the character of the data and their utilization in the report, the nature and treatment of the problems involved, the main conclusions and such other information as in their opinion would serve to determine the suitability of the report for publication in accordance with the principles of the Bureau.

5. A copy of any manuscript proposed for publication shall also be submitted to each member of the Board. For each manuscript to be so submitted a special committee shall be appointed by the President, or at his designation by the Executive Director, consisting of three Directors selected as nearly as may be one from each general division of the Board. The names of the special manuscript committee shall be stated to each Director when the summary and report described in paragraph (4) are sent him. It shall be the duty of each member of the committee to read the manuscript. If each member of the special committee signifies his approval within thirty days, the manuscript may be published. If each member of the special committee has not signified his approval within thirty days of the transmittal of the report and manuscript, the Director of Research shall then notify each member of the Board, requesting approval or disapproval of publication, and thirty additional days shall be granted for this purpose. The manuscript shall then not be published unless at least a majority of the entire Board and a two-thirds majority of those members of the Board who shall have voted on the proposal within the time fixed for the receipt of votes on the publication proposed shall have approved.

6. No manuscript may be published, though approved by each member of the special committee, until forty-five days have elapsed from the transmittal of the summary and report. The interval is allowed for the receipt of any memorandum of dissent or reservation, together with a brief statement of his reasons, that any member may wish to express; and such memorandum of dissent or reservation shall be published with the manuscript if he so desires. Publication does not, however, imply that each member of the Board has read the manuscript, or that either members of the Board in general, or of the special committee, have passed upon its validity in every detail.

7. A copy of this resolution shall, unless otherwise determined by the Board, be printed in each copy of every National Bureau book.

(Resolution adopted October 25, 1926, and revised February 6, 1933, and February 24, 1941)

Financial Research Program: Committee

In the conduct of this and other studies under its program of research in finance the National Bureau of Economic Research has benefited from the advice and guidance of its Committee on Research in Finance. The functions of this committee are to review and supervise the specific research plans of the staff of the Financial Research Program.

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