WAR FINANCE AND INFLATION

BY

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Member, Federal Reserve Board

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The beginning of wisdom in the financing of our war is the full appreciation of the fact that the ultimate term in our war finance must be not money, not the dollar—but what the dollar will buy. Every day that the war goes on makes it clearer and clearer that the war is a contest in economic organization and resources, and that victory will lie with the nations which show themselves best able to organize their resources and to resist the processes of economic waste and disintegration. Indeed, it looks as though the war would not end until all the economic power of America is developed to its highest pitch of efficiency and then delivered as gun-power on the far flung battle fronts of Europe. We are all rapidly coming to understand that great belligerent nations must be organized from the fighting line back to the field, factory and foundry, as great fighting machines, as great organizations for converting the productive-power, the saving-power and the will-power of the people at home into fighting-power at the front. We are also coming to understand that the winning of the war presents a problem of economic stategy as well as of military strategy: the two together constituting the essential elements of an adequate war strategy. Our economic strategy must work hand in hand with our military strategy if we are to make ourselves most effective in coördinating our own activities, and those of the other nations forming the grand alliance, into one great whole so as to bring the war to an early and victorious conclusion. Many are the contributions which time and circumstance will show America must make toward the successful completion of the war, but there is none perhaps that in the end will prove more important than that of developing and supplying leadership and mastery in coördinating the activities of herself and her associates along the larger lines of economic and military strategy.

The financial problem in its larger aspects, as I conceive it, is largely one of developing a plan under which the instrumentalities of finance may be so employed as to enforce a sound, and in the end, a triumphant economic strategy.

Some such thought as this, I believe, was in the mind of the President when he made the momentous observations on war economy and finance contained in his message of April 2. Properly understood, they are more than observations: they are the basic principles of national finance for our guidance in this great crisis. The President, calling upon Congress and the country to "exert all its power and employ all its resources to bring the government of the German Empire to terms and end the war," states what this will involve in the way of economic and financial preparation in these propositions:

> It will involve the organization and mobilization of all the material resources of the country to supply the materials of war and serve the incidental needs of the nation in the most abundant and yet the most economical and efficient way possible.
>
> It will involve, also, of course, the granting of adequate credits to the government, sustained, I hope, so far as they can equitably be sustained by the present generation, by well-conceived taxation.
>
> I say sustained so far as may be equitable by taxation, because it seems to me that it would be most unwise to base the credits, which will now be necessary, entirely on money borrowed. It is our duty, I most respectfully urge, to protect our people, so far as we may, against the very serious hardships and evils which would be likely to arise out of the inflation which would be produced by vast loans.

Supplementing these statements in his Proclamation on War Economies, which was issued less than two weeks after the war message was delivered to Congress, the President concludes one of the most trenchant economic surveys that has ever come from the pen of statesman or scholar with these pregnant words:

> This is the time for America to correct her unpardonable fault of wastefulness and extravagance. Let every man and every woman assume the duty of careful, provident use and expenditure as a public duty, as a dictate of patriotism which no one can now expect ever to be excused or forgiven for ignoring.

Briefly summarizing the economic and financial principles laid down by the President, I would state them as follows:

(1) Organization and mobilization of all the country's material resources;

(2) Strict economy through saving;

(3) Well-conceived taxation;

(4) Avoidance of inflation.

The rule of finance they suggest to my mind for the conduct of the war, I venture to formulate as follows: *Taxation should be carried to the point where the remainder of the needed income of the government can safely be provided out of the proceeds of loans—that is, be provided without producing inflation of credit and prices.* The clear inference I draw is that sound finance will require that the limits of taxation should be extended as borrowing reaches the point of inflation. Hardly less clear to my mind and certainly not less cogent is the inference that finance alone will not achieve the needed results: consumption will have to be controlled and production will have to be directed on some adequate basis, in order that any plan of finance we may adopt shall be certainly equal to the task of providing the government with the vast masses of goods and services it will require for the war.

II

The present war differs from preceding wars in many ways but in none more than in the prodigious quantities of material supplies of many sorts which are required. It is this circumstance which gives to its financial problems their peculiar difficulty and urgency. No satisfactory progress can be made toward a solution of those problems if close calculation is not made at every point of what is involved in the way of surrender for war purposes of the customary consumption and income of the country. I venture, therefore, some statements—not on my own authority, but on the authority of men who have given much thought to the matter—touching some of the underlying facts bearing upon the economic costs of the war in terms of the man-power it will require.

We are setting out to provide, equip and maintain an army of a million men. Competent judgment has estimated that it will take the labor of four men, working in munition factories, clothing factories, on the farm and the transportation systems of the country, to maintain one soldier at the front according to modern standards of military efficiency. This means that an American army of one million men will require the output of four million men working in factory, field and foundry. If the war should go on into a second year and we undertake to organize and maintain at the front an army of two million men, the ratio will still hold good: we shall require an industrial army of eight million men working at home to maintain, provision and equip those fighting at the front. But our part in the war, it is well known, is not only to maintain our own quota of the necessary fighting forces, but also to help the great nations with which we are associated to maintain their quotas and, in addition, supply their civilian populations with a large part of their necessary maintenance. Europe is now on rations and an important part of our work in furthering the war is to supply the nations, with which we are allied, with the primary necessities to the utmost extent we can. There is competent authority for the statement that the munitions, provisions and other maintenance which the armies and civilian populations of our allies should have from us will require the output of more than ten million laborers working in their behalf in this country.

If these estimates are approximately accurate and we can make our predications on the assumption that we are to maintain an army of but one million men, requiring as has been pointed out the labor force of four million men at home, and bearing in mind that the million men composing the army are themselves withdrawn for the most part from productive industry, it is clear that the undertaking involves the devotion to war purposes, directly or indirectly, of the services and product of approximately fifteen million men here in America on the farm, in the shipyard or in the factory. If we accept as approximately accurate the estimate of our present available labor supply as amounting to thirty million workers, the magnitude of the economic problem with which we are confronted, is suggested by the statement that not less than one-half of our existing labor supply, during the period of the war, must be devoted to the producing of materials and supplies to be consumed by our own army and the armies of our allies and the civilian populations of the nations in Europe which are dependent on us for a part of their necessary keep. This means that the civilian population of our own country will have to rearrange its mode of living so as to be able to get along with the product of the remaining labor power of the country—that is, about one-half of what has been customary—unless happily the labor forces of the country can be effectively recruited and augmented by the introduction of men and women into industry who are not now to be reckoned among the productive classes of the community. We can do this if we will, and it is doubtful whether we can win the war, or at any rate win it as quickly and decisively as we all desire, unless we raise our will-power to the point where we will do it.

This, in sum and in its simplest terms, is the economic problem to which we must address ourselves. The financial problem is the problem of getting control of the products needed by the government by the methods which are least wasteful, least obstructive and least subversive.

III

On its financial side, the magnitude of the obligation we have assumed is indicated by the nineteen billions of dollars which Congress has authorized to be used for the general purposes of the war for the fiscal year ending June 1918, including in this total the credits granted to the Allies. Never has any nation, either in the present or any other war, undertaken so vast a pecuniary obligation for the same period of time. We are undertaking to apply to the support of the war in a single year almost as much as the German Empire has spent since the beginning of the war.

Can we provide for the vast expenditure we have undertaken? What have we, as a nation, got in the way of the requisite financial resources to offset the nineteen billions Congress has voted?

It must be clear to any one who gives any serious attention to the financing of the war that the expenditures of the government must, except for a negligible proportion, be defrayed out of the *income* of the community. The limits, moreover, within which any part of the burden of our war costs can be shifted to posterity are so narrow, especially for a country in our position with no outside markets left from which to borrow, that we must regard the burden as one that has got to be shouldered and paid for as we go along out of the product of our current national industry—or, putting it in the more familiar financial term, out of the people's current income.

Unfortunately no official or authoritative estimate of the current annual income of the people of the nation has been made, so far as I am aware. Some widely used estimates made at the time of our entry into the war placed the annual money income of the nation at forty billions of dollars or thereabouts. Such information and data as I have been able to obtain and such investigation as I have been able to make, lead me, however, to believe that this is a very considerable under-statement of our actual situation. Using the term "income" as substantially identical with the money value of the gross annual product of the country's industrial and business activities, I believe there is warrant for the opinion that the industrial and business income of the people of the United States for the year 1917 may come close to fifty billions of dollars: the following estimate in summary form containing the data on which this opinion is based:

SUMMARY ESTIMATE OF THE TOTAL VALUE OF THE NATIONAL PRODUCT AND PRODUCTIVE SERVICES FOR THE YEARS 1909–1910, 1914 AND 1916–1917 IN BILLIONS OF DOLLARS[1]

	1909–1910	*1914*	*1916–1917*
Agriculture	5.5	6.1	14.3
Manufactures	8.5	9.9	14.8
Mineral	2.0	2.1	3.5
Fishing	0.05	0.1	0.1
Transportation	2.8	3.0	3.5
Commercial and professional	9.0	10.0	13.5
Total	27.85	31.2	49.7

The figure of fifty billions for the income of the nation in 1917 refers, of course, to gross income. What proportion of these fifty billions may properly be regarded as surplus or clear income—that is to say, income over and above what the people of the country must consume in order to keep themselves in a state of health and

[1] In estimating gross values of national industry by principal branches, production figures of the Census Bureau, the Department of Agriculture, the Geological Survey and other federal agencies were used. Figures for 1916–1917 are more conjectural than those for 1909–1910 and 1914 for the reason that the value of manufactures, or the total "Value added by manufactures" had to be estimated largely from incomplete output data of certain basic industries and wholesale prices prevailing during the year. In this connection use was also made of the index number of wholesale prices published by our Bureau of Labor Statistics. Figures of income of the commerical and professional classes, including persons in the public service, are rough approximations, based, in part, upon census data of occupations.

The large increases in the 1917 values of agricultural products are due largely to the higher price level and, to a much smaller extent, to larger yields. In mining and even more so in manufactures, the higher values are due both to higher prices and to larger output, as may be seen from the following strength and that cheer which has got to be maintained even in war-time if we are to deliver our most telling blows, and to provide for the necessary upkeep of the industrial equipment of the country—is a matter upon which opinions and estimates will differ widely. Approximations, however rough, must nevertheless be attempted.

The annual savings or investment fund of the American people at the beginning of the European war was variously estimated at from three to five billions of dollars. That meant that out of the gross income of the country at that time, three to five billion dollars' worth of goods were not consumed by the recipients or owners of the income, but were invested in extensions of industry and business, or in other words, converted into additions to the financial and industrial capital of the country.

How much this actual savings fund of from three to five billions of dollars may, as a matter of fact, have been increased during the past three years, or even how much the potential savings fund of the country may have been increased by reason mainly of the vast

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tables showing yearly crop and output figures for certain leading agricultural and mineral products:

Quantities of Principal Agricultural Products for the Years Named Below

	1909	*1914*	*1917*
Wheat, 000′ bushels	683,379	891,017	659,797
Corn, 000′ bushels	2,552,190	2,672,804	3,210,795
Oats, 000′ bushels	1,007,143	1,141,060	1,580,714
Cotton, bales	10,649,000	16,135,000	12,047,000
Tobacco, 000′ pounds	1,055,765	1,034,679	1,185,478
Hay, 000′ tons	97,454	70,071	91,715

Quantities of Principal Mineral Products for the Years Named Below

	1910	*1914*	*1916*
Coal, Bituminous, 000′ short tons	417,111	422,704	502,520
Iron, pig, 000′ long tons	26,674	22,263	39,126
Copper, 000′ pounds	1,080,160	1,150,137	1,927,851
Petroleum, 000′ bbls. of 42 gal.	209,557	265,763	300,767
Zinc, short tons	252,479	343,418	563,451
Cement, 000′ bbls. of 380 lbs.	77,785	87,258	95,394

accessions to the pecuniary prosperity of the country, which have occurred in this same period of time, offers an engaging problem both for statistical enterprise and for economic inference and conjecture. My inference is that the largest part of this increase in the money income of the country may rightly be rated as an addition to the potential savings fund. The indications above given are that the money income of the country may have grown by an amount as much as eighteen billions of dollars in the past three years, due partly to increased production, partly to intensified demands for many of our staple products, but mainly to the rapid and general advance of prices. If we allow a deduction of one-third or six billions from the estimated increase of eighteen billions in order to offset increased living, or other costs (and, also, to account for variations in values computed because of steadily changing price levels during the year), we have left the sum of twelve billions of dollars as the apparent amount by which the potential savings fund of the country has been enlarged during the past three years. These twelve billions added to the actual savings fund of the country, which was estimated at from three to five billions of dollars at the beginning of the European war, would seem to indicate that the present total savings or investment power of the country, taking the *actual* and *potential* funds together, might amount to as much as fifteen billions of dollars or more for the year 1917.

The war taxes, which were imposed by Congress at its recent session, contemplate the raising of some two and a half billions of tax revenue, though there appears to be some reason for believing that the yield of the new taxes may considerably outrun the estimates. Obviously the government cannot also borrow that which it takes by taxation. Current income is the source out of which both our tax revenue and our loan revenue will be derived. If some three billions of tax revenue are taken out of the annual surplus income of the country, which I have stated my reason for believing might amount to as much as fifteen billions of dollars, then it would appear that twelve billions of dollars represents about all that could safely be raised by loans.

The authorized expenditures and advances for the fiscal year 1918, however, run close to twenty billions of dollars and leave us, therefore, with the problem of how the additional four or five billions in excess of the estimated actual and potential savings fund of the nation are to be obtained. Looking at the problem purely as a matter of dollars and cents, it must be admitted that the financing of the war on the projected scale of expenditure is far from a simple problem, even with such reassuring indications of our possible income and savings fund as I have ventured to give for the year 1917. It raises at once two extremely important questions:

(1) Can the vast sums, which it is proposed to raise from loans, be raised without causing a serious inflation of credit and prices?

(2) Is it at all possible that the war can be carried as an "extra" —that is to say, that business and living can be as usual during the period of the war?

IV

No one who looks beneath the surface appearances to the hard and inexorable realities, can for a moment maintain the position that the war can be carried as an "extra." We cannot carry the war as an "extra" and business cannot be as usual during the period of the war, if we mean to win.

I cannot believe that those who are sponsoring the doctrine of "business as usual" can appreciate the economic significance of the doctrine. This war, as the President with rare prevision told Congress and the people, will involve the "organization and mobilization of all the material resources of the country to supply the materials of war." The man who knowingly preaches the doctrine of "business as usual" at this time is, therefore, proposing that *private advantage* should be set against or ahead of *public necessity.* At this crisis in the nation's life, every business, no matter what its nature, is affected with a public interest and the public has the right, indeed owes it to itself, to determine within what limits that business shall be circumscribed in the interest of the war, or to what extent it shall be helped and fostered in the same interest. The American business system is on trial in this war. No one doubts its technical proficiency and it should not allow anyone in its ranks to raise a doubt regarding its competency to exercise vision and imagination in seeing clearly what must be done by the nation in the way of changes in our business and economic organization during the war. If it fails to rise to the occasion through weakness or selfishness, or if selfishness is allowed to hamper and hinder the development of a rational program of economic finance, the American business system will have gone a long way toward sounding its death-knell and surrendering to other agencies the right of leadership in the great processes of economic reconstruction which must take place at the close of the war.

The truth is that nothing can be as usual while the war is on—neither business nor living can be as usual. We are in this war to win it and our children will never forgive us if we fail to do any of the things necessary to win it. The sooner we take this truth to heart and reshape our lives accordingly, each one in accordance with his circumstances, the sooner the war will be won and over. The only powers on earth that can defeat us are weakness and selfishness—selfishness in the shape of profiteering, if business is as usual, and weakness in the shape of waste and indulgence, if living is as usual. We need not doubt our ability to overthrow the enemy without, if we can control the enemies within: that is, the temptations to make money as usual and to live and enjoy as usual. Indeed, the doctrine of "business as usual" is not only vicious in its necessary economic implications for a nation in the throes of a great crisis, but is equally mischievous in its financial implications. For the twin-sister of the doctrine that business can be as usual is that other mischievous doctrine that the war cannot be financed without inflation.

V

Inflation in connection with government war financing may arise from many different causes but there are two which are of particular interest in our present situation: (1) Inflation of prices is apt to result when the government undertakes to spend money, however obtained, faster than the goods it seeks to buy are being produced. (2) Inflation, both of banking credit and of commodity prices, results when the government undertakes to borrow faster than the people are able or willing to save. In the last named case, which is the one I mean to discuss, the loans of the government, by one device or another, will be forced upon the banks. The banks will pay for the loans by an extension of banking credit and currency. The inevitable effect on commodity prices of an expansion of banking credit and currency is to raise them. It would seem to need no extended argument in this day in America to demonstrate that banking credit in any of its typical forms is purchasing power, exerting the same effect on prices when used in payment for goods or purchases, as any other forms of purchasing media. When purchasing media are produced faster than goods are produced—in brief, when the supply of currency and credit in its increase outruns the increase of the supply of purchasable goods—the prices of goods must rise. Whether such a condition is best described by the word "inflation," the fact remains that the rise of prices of purchasable goods in such a situation is closely connected with the increased supply of purchasing media. Moreover, when the increase of purchasing media, occasioned by the expansion of banking credit, follows upon the investment of banking credit in government loans, the conclusion is irresistible that the expansion of credit and its resulting consequences in increased commodity prices are being induced by bank lendings to the government.

The process by which government loans produce inflation is disclosed in the financial history of all the great European belligerents. All of these governments, notably Germany, have made extensive use of banking credit in the flotation of their loans. Not only the great central banks, but the banks generally in the several European countries, have been put under pressure to invest their credit extensively in the purchase or carrying of government securities. The London *Economist* has repeatedly characterized the situation thus produced as "bad finance forced on the banks by the government." An examination of the changes of condition of the banks of Great Britain, exclusive of the Bank of England, shows what the process has been. Their deposit liabilities, that is to say their checking accounts, have increased between the end of 1913 and the end of 1916 about four hundred and eight million pounds sterling, an increase of close to 40 per cent. Their bills discounted on the other side of the statement show only a negligible increase, an increase of some seven million pounds sterling. Their investments, on the other hand, show an increase from two hundred and eleven million pounds sterling to four hundred and thirty-seven million pounds sterling, an increase of over two hundred and twenty-five million pounds sterling, or 107 per cent: in view of all the circumstances and known facts, it may be said that this increase is made up chiefly, if not almost entirely, of government obligations, such as treasury bills, exchequer bonds, etc. In brief, the expansion of banking credit in England seems clearly disclosed by these figures to have been occasioned for the most part by the expansion of bank investment, directly or indirectly, in government obligations.

A similar process has been at work in the other countries of Europe. The expansion of banking credit in France and Germany however, has been more largely in the form of bank notes than of bank deposits. The bank note circulation of France increased from twelve hundred and eighty-nine million dollars in August, 1914, to forty-one hundred and seventy millions in October, 1917, an increase for the period of over 223 per cent. The circulation of the Reichsbank of Germany has risen from six hundred ninety-three million dollars in August, 1914, to twenty-two hundred and eighty-five millions in October, 1917, an increase of 230 per cent in the course of a little more than three years. This increase in the note circulation of the great central banks of France and Germany has been occasioned largely by investments of their credit in the obligations of their respective governments, and seems definitely to indicate that government borrowing has been a leading factor in the expansion of their note circulation. Doubtless other causes have contributed to the vast expansion of banking liabilities in Europe, but no one cause has probably been a greater factor than the investment by the banks of their credit in taking or carrying government loans.

Whether a similar result is to be expected here in connection with our greater government borrowings, and if so how soon, will largely depend upon whether all the people who have income enough to save will save, or whether they can be or will be made to save, enough out of their incomes to absorb such loans of the government as may be put out in excess of the ordinary or usual savings fund of the nation—that is, absorb them as savings loans, not as credit loans.

The obligations of a government, such as the United States, when considered purely from the investment point of view, are unquestionably to be regarded as the most eligible sort of investment. Commercial banks, however, in a country like ours, which makes daily use of a large body of mobile banking credits, are not to be likened to investment institutions in the ordinary sense of the word. A bank's capital is but a small part of its investment power. A bank is a *bank* only as it invests its credit. But the safe investment of its credit, as the history of banking experience has repeatedly demonstrated, necessarily restricts a bank in its choice of securities to those which possess the necessary liquid character. The objection to considerable investment by banks of their credit in investment securities, such as government bonds, arises, not out of any question as to the solidity of such securities, when well selected, but rather because of their lack of liquidity. The history of modern banking has shown conclusively that distinction must be made between "security" and "liquidity," or "value" and "availability" in determining the kind of investments which are best fitted for banks which deal in their credit. There are many forms of investment paper which from the point of view of security leave nothing to be desired, but yet which are unsuitable as the basis for the creation of a great body of currency or of active banking credit.

The doctrine set forth in the famous English Bullion Report, which came in the midst of the controversies growing out of the management of the Bank of England's circulation during the Napoleonic Wars, whose truth has since been attested by the experience of every modern nation, is that two things are necessary to protect a system of banking currency and credit against the danger of undue expansion. One of these is the *maintenance of adequate reserves;* the other is the *maintenance of adequate liquidity of investments.* By liquid investments is meant bank paper which liquidates itself in short periods of time out of the proceeds of the transactions which have given rise to the paper. That is to say, paper which grows out of transactions in trade and industry connected with the production or distribution of goods, which—as the goods are produced and sold in the normal movements of trade and industry—will supply the funds out of which the borrowings of bank credit can and will be repaid. Self-liquidating paper being, therefore, paper which is connected with productive operations in industry, that is to say, operations which result in an increase in the supply of usable and salable goods, it follows that the same banking transaction, which gives rise to an increase in the supply of purchasing media through the expansion of banking credit, also gives rise to an increase in the supply of purchasable goods through the assistance rendered the producer.

But when a bank invests its credit in the purchase of government bonds which are issued for the purposes of war—in brief, for operations that result, not in the production, but in the consumption and destruction of goods—we have an altogether different situation. The situation is one in which there has taken place an addition to the volume of outstanding banking credit and purchasing media with little additional in the way of goods to offset it on the shelves of the shop-keeper, or the warehouse of the manufacturer. In brief, credit transactions of this sort, so far from being immediately connected with operations resulting in the increased production of *aggregate* goods, are rather to be described as connected with operations resulting in the diminution of the community's supply of purchasable goods. In war times, governments borrow, not for the purpose of producing goods, but for the purpose of getting possession of goods already produced, or being produced, goods whose production is otherwise financed. The credit created and extended by the banks to the government in the process of taking up government bonds is to be regarded as an addition to the total volume of banking credit, not called out by the needs of productive industry, but occasioned by the necessities of the public treasury—in brief, what is being financed by such a creation of credit is not the production of goods, but the acquisition of goods by a non-productive borrower.

It may be asked, in fact has been asked, how the credit created and extended by a bank in order to enable its customers or itself to take up and pay for subscriptions to government loans, can inflate commodity prices, since, it is said, credit acts on commodity prices only when offered in exchange for, or payment of, "commodities.'

The process of price inflation in the case in question, that is where the issuance of government loans is the admitted cause of bank-credit expansion, is perhaps slightly obscured by this fact, but in its essentials does not differ from the familiar and typical case of credit expansion, if sight is not lost of the fact that the credit extended by the bank in payment for bonds is merely the beginning and not the end, or the whole, of the process. The credit received by the government in payment of its bonds is not held idle in the Treasury, but is used to pay for supplies bought or contracts in process of execution and soon filters into the stream of circulating bank credit, becoming part of the aggregate supply of purchasing media afloat in the community. For when the government takes payment in credit, it follows that it will make payment by credit, transferring the credit that it has on the books of the banks in the same way as a merchant or manufacturer would, who had been granted a credit accommodation by his bank. Moreover the credit created in first instance by the bank's subscribing to government loans and set in motion by being used by the government in payment of purchases made, keeps on moving and changing hands, passing from the hands of the government to the munitions manufacturers, from them to the steel manufacturers, and so on—in other words, lives on as a part of the general body of mobile and active banking credit until it is extinguished by some one, who, having payment to make to a bank, uses it for that purpose or until some one who wishes to buy a bond from a bank, makes payment therefor in banking credit. When that time is reached, there will be a simultaneous reduction on both the *liabilities*' and the *resources*' sides of the bank's statement. Till that time is reached, both the liabilities' and the resources' sides of the accounts will be swollen by reason of the initial transaction in government finance, which occasioned the extension of bank credit for the purpose of making the investment in government bonds.

There is much misconception with regard to the meaning of "bank resources" and the significance of increases of banking resources. From the point of view of the lending bank, the obligation of a solvent debtor is a "resource"; from the economic point of view, however, only that is a resource which in its existing state, either is or is in process of becoming a usable good. When, therefore, banks are investing their credit extensively in government securities, there may be a very great increase in the banking resources of the country, without any increase in the country's actual economic resources. But since prices—that is to say commodity prices—depend upon the ratio existing between the supply of purchasing power in terms of money, and the supply of purchasable resources in the shape of consumable goods, it follows that an increase of bank resources not offset somewhere in the economic process by an increase of economic resources in the shape of consumable goods, must and will lead to a rise of prices.

It can hardly be doubted in view of the known facts of the case that the great increase of prices which has been experienced throughout the belligerent countries of Europe is, in large measure, due to the multiplication of the means of purchase and payment by their banking systems, more rapidly than the multiplication of the goods available for purchase by their industrial systems. Nor can it be doubted that a considerable part of the rise of prices, which we have experienced in our own country since the beginning of the European war in 1914, has been induced by the great body of new banking credit created, which has outrun in its expansion the growth in the productive output of the country. The rise, moreover, has continued since our entry into the war. The index figures compiled by the Bureau of Labor Statistics show that while wholesale prices in April 1917 were 74 per cent higher than in July 1914, they were 89 per cent higher in July 1917. It seems likely that if later figures were available, they would show the forward march of prices to be continuous. The rise of prices experienced in this country, though much less than that which has taken place in the leading countries of Europe (the price index compiled by the London *Economist* showing an increase between July 1914 and September 1917 of 120 per cent) is yet sufficient to awaken serious concern, for causes not dissimilar in their general character and incidence have been operating to produce the rise of prices in both England and the United States, most notable among them, as already indicated, being the expansion of banking credit.

How rapid the expansion of banking operations in the United States has been during the past three years is definitely indicated in the striking figures for the items "total deposits" and "loans and investments" which have been assembled in the sub-joined tables, based upon the data compiled in the office of the Comptroller of the Currency.

TOTAL DEPOSITS OF ALL BANKS IN THE UNITED STATES EXCLUDING SAVINGS BANKS AND PRIVATE BANKS

(Bank, individual and government)
(In millions of dollars)

	June 30, 1914	*June 23, 1915*	*June 30, 1916*	*June 30,[2] 1917*
National banks	8,543	8,819	10,856	12,767
State banks	3,407	3,460	4,518	5,672
Trust companies	4,283	4,603	5,728	6,413
Total	16,233	16,882	21,102	24,852

[2] Report of national banks as of June 20, 1917.

Loans and Investments of All Banks in the United States Excluding Savings Banks and Private Banks

(In millions of dollars)

	June 30, 1914	June 23, 1915	June 30, 1916	June 30,[1] 1917
National banks	8,345	8,728	10,127	11,936
State banks	3,268	3,304	4,073	5,003
Trust companies	4,163	4,395	5,307	6,102
Total	15,776	16,427	19,507	23,041

It appears from these figures that both deposits and loans and investments have grown in the United States at a very rapid rate since the beginning of the European War in 1914. The growth of bank deposits between the end of June, 1914 and the end of June, 1917 was eight billions six hundred millions of dollars, a gain of 53.1 per cent. The increase of loans and investments between the same dates was seven billions two hundred sixty-five millions of dollars, a gain of 46.1 per cent. Adequate data are not available for estimating with accuracy the trend of development since the end of June last. The abstract of the Comptroller of the Currency for September 11, 1917, however, shows a gain of four hundred sixty-one millions of dollars in deposits of the national banks between the dates of June 20 and September 11, and of three hundred forty-five millions of dollars in the loan and investment account for the same period. Much more striking is the trend latterly disclosed by the reports of the clearing house banks of New York City, covering the period which has elapsed since the date of the last call of the Comptroller: between the dates of September 8 and November 3, 1917, the loans, discounts and investments of the clearing house banks increased from $3,850,652,000 to $4,510,385,000, a gain for a period of eight weeks of $659,733,000 or 17.1 per cent. Demand deposits for the same period increased from $3,675,490,000 to $4,136,335,000, a gain of $460,865,000 or 12.5 per cent. The trend of development in such a highly sensitive center as New York—the most important banking center of the country—is not of itself, of course, to be taken as measuring the banking trend in the country at large but it may be taken as indicating the general direction in which banking operations are moving. Taken with other—minor

[1] Report of national banks as of June 20, 1917.

and less significant—indications which need not here be detailed, it seems not improbable that, if adequate data were available, they would show an increase of some 10 per cent, or from two to three billions of dollars, in both the deposit account and the loan and investment account of the banks of the country since our entry into the war.

It can hardly be doubted, I think, in view of the facts and probabilities thus outlined that the expansion of banking credit, which has been in progress in the United States since shortly after the opening of the year 1915, has already produced a condition of serious price inflation. The evidence seems unmistakable that inflation of credit and prices is already at work and that, in the matter of inflation, we are confronted, not by a theory, but by a condition—a condition which there is reason for believing will be aggravated if undue reliance is put by the country on banking credit as a competent economic method for financing the loan requirements of the government.

If we examine the movements of the federal reserve banks in recent months, we get some light upon one of the factors which have helped to sustain the most recent phase of the expansion of banking credit which is under review. Between the dates of April 6 and November 2, federal reserve banks increased their holdings of bills discounted and purchased from $100,663,000 to $689,977,000, an increase of $589,314,000 or 585.4 per cent. Federal reserve notes in circulation increased for the same dates from $376,510,000 to $881,001,000, an increase of $504,491,000 or 133.9 per cent.

When it is recalled that the reserve banks are bankers' banks and that investments made by reserve banks of their credit in discounted or purchased bills, appear on the books of the borrowing or selling banks either as cash balances or as additions to (or replenishments of) their cash holdings,[4] it is evident that an increase of five hundred eighty-nine millions of dollars in reserve bank investments was quite sufficient, so far at least as amount is concerned, to sustain an increase of from two to three billions of dollars in the operations (loans and deposits) of the banks of the country. Whether any such direct and definite connection between the operations of the banks of the country and the operations of the federal

[4] In other words, as the customary and necessary provision of cash or cash credit, which, in the accepted nomenclature of banking science, is called "reserve."

reserve banks can, as a matter of fact, as yet be said to exist, is of course very doubtful. But the connection between the operations of the federal reserve banks and the growth of their member banks' operations will probably have to be regarded as close enough to justify the view that the recent rise in the volume of reserve bank operations has been a factor of consequence in sustaining the most recent phase of the expansion of banking credit which has been noted.

If this rise continues, it is not unreasonable to expect that in time such use of the rediscount facilities of the reserve system might convert it into a great engine of banking inflation. The situation is therefore one which suggests the advisability of careful attention being given to the character and growth of the operations of the federal reserve banks in these critical times, lest they be made to bear an undue share of the burden incident to the borrowing operations of the government.

The credit potentialities of the federal reserve system are vast. The twelve banks composing the federal reserve system have an aggregate capacity of credit expansion of about two billions of dollars. If we assume that one dollar of reserve bank credit increases by not more than sevenfold when transmuted into the credit extended by a member bank to its customers, it is clear as a proposition of banking arithmetic that the federal reserve banks and member banks of the federal reserve system, taken together, have an additional credit capacity of some fourteen billions of dollars.

The question which I believe, in view of this situation, the country must soon face, is whether it will be the part of financial prudence for us to attempt to finance our government loans by an expansion of banking credit with accompanying inflation of prices, or whether it will be better, however drastic the steps necessary to accomplish this result may be, to pursue the course of converting the potential savings fund of the nation into an actual savings fund of sufficient magnitude to absorb the loans of the government as *savings loans.*

VI

It does not fall within my province in this article to discuss the different steps which are likely in the end to recommend themselves to the mature judgment of the nation, if the people are to be protected, again to quote the President's language, "against the very serious hardships and evils which would be likely to arise out of the inflation which would be produced by vast loans."

One or two general observations may, however, not be out of order. It will be the part of prudence for us, I believe, to look into the future as clearly as we can and try to estimate how far we shall have to reshape or supplement our traditional financial and economic methods in order to adapt them to the unusual character and unprecedented dimensions of the financial and economic situation, which the war is presenting: *Whatever will have to be done in the end would better be done as soon as public opinion can be brought to accept it.*

The traditional methods of finance are everywhere showing themselves inadequate, unless accompanied and reinforced by thorough-going changes in the general organization of industry from a peace basis to a war basis. The weakness and defect of much of the current discussion of war finance is, as I view it, that it does not seem to comprehend the way in which the whole problem of financing the present war has been utterly transformed by the stupendous magnitude of its financial requirements. Current discussions run too frequently in terms of the traditional finance. There is too much discussion as to whether loans or taxation should be our main reliance in financing the war, and too little discussion of the changes which have got to be made in our whole economic organization in order that any financial system we may devise will prove effective in putting the government quickly and continuously in possession of the vast streams of supplies of all sorts required for the war. The financial problem, at best, is only partly a *financial* or money problem—a problem of getting the wherewithal to buy and pay. Chiefly it is a problem of getting the goods and services to buy.

Obvious and important, therefore, as a system of well-distributed taxation is, as an alternative to inflation as an expedient of war finance, it can never be more than a partial solution of our difficult financial problem. When the system of war taxation, the foundations of which were laid by Congress at its last session, is carried to its farthest practicable limits, there will still remain a very, very wide margin of war expenditure—perhaps the largest part—which will have to be taken care of out of the proceeds of loans. Our major financial resource is bound to be the loan and one of our major financial problems, therefore, to prevent the loan from deteriorating into an inflation. Specifically and positively the problem is as to how we may best proceed in putting and keeping the loan on a basis of financial safety—that is on a solid foundation of industry and thrift. The way to this result was pointed out by the President in words which have already been quoted and which can not too often be repeated:

(1) by "every man and every woman" assuming "the duty of careful, provident use and expenditure as a public duty" and;

(2) by "the organization and mobilization of all the material resources of the country"—

the organization, be it observed, not of a part, not of so much as can be conveniently spared, but the organization of *all* the material resources of the country "to supply the materials of war and serve the incidental needs of the nation in the most abundant and yet the most economical and efficient way possible." And all that this or any financial conference can do; all that any executive department of the government can do; all that Congress can do is to work out in suitable legislative and administrative detail the terms of the President's equations.

In sum, we must, as a nation, produce more and consume less. This, in its simplest terms, must be our national formula of finance. We must produce more of the things which the nation at war requires and, in order to set free the nation's productive forces to accomplish this result, we must consume less of the things which the nation in war-time does not require, even though it has been our national habit in peace-time to consume such things in unstinted measure.

Whether the various agencies of governmental administration which have thus far been set up for adjusting the economic life and activities of the nation to a war basis, will prove adequate to accomplish the result, may be doubted. Much has already been accomplished, but much remains to be accomplished and time is of the essence of success. It may well be expected, should the war run on into a second year, that a more authoritative status will have to be given to these special agencies if they are to be made fully competent to give effect to the war-will of our people on its economic side, and that they will not be able to achieve the necessary results until they are clothed with the power to say what shall, and what may not, be done in the field of industry, or to define the limits within which this thing or that thing will be permitted.

I believe that the people of the country, when the issue is put before them intelligently and squarely, will not hesitate to accept whatever may be involved in a sound financial program with the same conviction and courage as they accepted the war. No nation ever went into a righteous war more deliberately than did the United States. The people, in assuming the obligation of war, I believe, also understood that they were assuming the responsibility of properly providing for its conduct and I am inclined to think that the great body of plain living and plain thinking people in this country are capable of comprehending what this means in the way of a sound financial program. Whether it may mean taxation carried to the farthest limits, compulsory saving, industrial conscription, priority of industry or priority of credits, the response will be made by the people if the call is authoritatively made upon them. It is my belief that beyond what is ordinarily appreciated, the country is ready for whatever may be involved in the thoroughgoing and effective prosecution of the war, for the country is realizing that this is a war of blood *and* iron, and that until we have effectively mobilized our iron, we shall not be in a position to bring the war to a conclusion which will "make the world safe for democracy."