

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: The Effect of War on Currency and Deposits

Volume Author/Editor: Charles R. Whittlesey

Volume Publisher: NBER

Volume ISBN: 0-87014-326-3

Volume URL: <http://www.nber.org/books/whit43-2>

Publication Date: 1943

Chapter Title: Monetary Expansion and the Problem of Inflation

Chapter Author: Charles R. Whittlesey

Chapter URL: <http://www.nber.org/chapters/c5871>

Chapter pages in book: (p. 32 - 42)

appreciably altered by a recognition that existing methods may themselves be highly expansionist. The importance customarily attached to subjective interpretations helps to explain why the quantitative factors mentioned above have generally been given so little emphasis.

#### MONETARY EXPANSION AND THE PROBLEM OF INFLATION<sup>27</sup>

A sudden and pronounced increase in the volume of circulating medium always gives rise to the fear of inflation. It has become customary to discuss the problem of inflation in the present war, however, not in terms of the quantity of money but of incomes and expenditures, or more especially, of consumer incomes in relation to the supply of consumer goods and services. The explanation, briefly, is that enlarged expenditures by the government lead to an expansion of incomes but, because they are directed toward the production of war materials, do not lead to a corresponding increase in the supply of goods and services available for purchases by the public. The result is the emergence of a so-called inflationary gap, an excess of potential demand over potential supply. The former is represented by consumer income and the latter by consumer goods and services available at the prevailing level of prices.

#### *The Bases of Inflation*

The question here is how the growth of circulating medium is related to this familiar explanation of the causes of inflation. The relationship would seem to rest principally on two considerations. In the first place, when funds disbursed by the government are obtained by borrowing newly created deposits from banks, there is no offsetting reduction in total means of payment at the disposal of the public. Consequently expenditures by the public are presumably larger than they would be if the government had acquired the sums it spends by taxation or borrowing out of income. In the second place, the increase in total circulating medium maintains the stream of income and expenditure in an inflated condition through subsequent exchanges. Thus the expansionist effect persists: the continued growth of circulating medium contributes to a sustained rise in income.

It is often implied that taxation or borrowing from the public will reduce

<sup>27</sup> Note by Clarence Heer, Director: For the benefit of those readers who are not acquainted with the plan of this series, it should be emphasized that this paper is primarily a study of war-time changes in the volume of currency and deposits and their relation to the problem of inflation. This restriction in scope is partly because of limitations of space and partly because plans call for the treatment elsewhere of other aspects of the problem of war finance. Any appearance of over-emphasis or omission that may result from this arbitrary division of subject matter will, it is hoped, be remedied through the publication of other papers in the series.

the inflationary potential by an amount equal to the income absorbed by these means. This conclusion involves the implicit assumption that sums collected from the public are taken out of what would otherwise have been spent for consumption. If, instead of reducing consumption by the full amount collected by the government, the public cuts down on its savings, the inflationary gap is reduced by something less than the amount transferred to the government. The net effect of taxation, compulsory savings, and borrowing out of income is influenced by any repercussions they may have upon total income and on consumption and private investment.

The description of the inflationary gap as frequently presented is open to the further objection that it assumes that any excess of income over civilian supply which is not drained off by such means as taxation and borrowing will necessarily be spent, and therefore operate to raise the level of prices. In making this assumption, it identifies potential demand (the total of retained income) with actual demand (expenditures) for consumer goods and services. No such identity as this assumes is admissible.

In recent months the public has held larger amounts of cash idle instead of employing all of the excess of income to compete for the scarce supply of goods. To a considerable extent people have been prevented, as by "freezing" and rationing, from spending their income for the goods they would be willing to buy. Potential demand may be restricted either by the removal of income through borrowing and taxing or by its immobilization. The latter may result from compulsion, as in the case of general rationing, or from voluntary choice, as when income receivers prefer to hold money rather than spend it for goods that are available. Both the reduction of retained income and the immobilization of that which is retained operates to restrain the upward drive of prices. Viewed in this light, hoarding of money may be regarded as an anti-inflationary influence, as long, that is, as the funds remain idle.

The latter qualification brings out one of the main difficulties in the present situation. As long as the building up of idle cash balances continues, this serves to restrain inflation. By operating to reduce consumer expenditures below the total of retained consumer income it helps to bring the level of effective demand down toward the level of available supply. But with a change in circumstances or expectations such as might attend the cessation of war, cash balances now idle might become active. In that case expenditures could proceed at a rate in excess of current net income. The effect might be to accentuate any inflationary tendency then existing and thus to aggravate an upward movement of prices; under opposite conditions it might serve to resist a downward movement.

The potentialities inherent in a large volume of idle balances constitute

a dynamic element of considerable significance, while the possibility of exercising some degree of control over this latent force represents an important strategic problem in the battle against inflation. At present the chief means of influencing these liquid funds are rationing and other forms of direct economic control. To the extent that we are able to check inflation, we may succeed in evolving techniques that will be useful later in coping with problems of deflation.

Like so many other economic phenomena, the accumulation of idle balances is to be judged only in the light of its alternatives and the conditions within which it takes place. During the 1930's it was viewed with distinct disfavor since expenditures at that time were inadequate for the attainment of full employment. Today circumstances are very different: instead of concern over a lack of spending there is fear of too great spending. While hoarding fails to contribute to the war effort as would the lending of the hoarded funds to the government, it is clearly free from the immediate inflationary dangers involved in the competition of funds for a dwindling store of consumer goods. The significance of these large idle balances in the period after the war will depend to a great extent upon the future course of consumer income and civilian supply. It is likely, however, that for some time after the war the task of preventing the sudden release of these reserves of purchasing power will be one of the major problems of monetary and fiscal policy.

#### *Characteristics of Recent Price Behavior*<sup>28</sup>

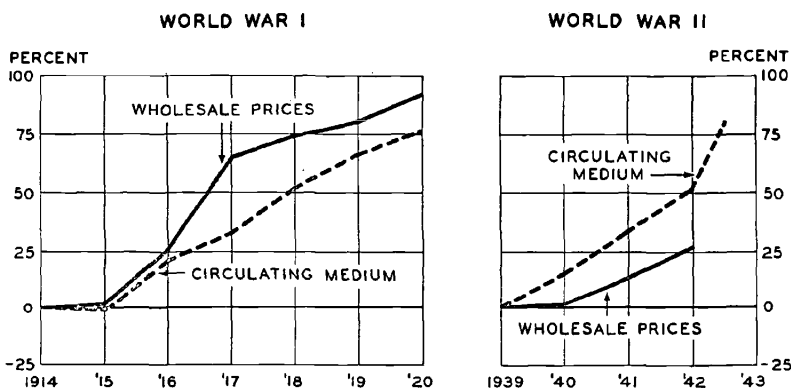
An increase in the volume of circulating medium is of most general concern in relation to changes in the structure of prices. At one time it was commonly accepted that the sole and certain cause of price inflation was an undue expansion of the circulating medium. While there is less agreement now than formerly as to the exact relationship between a change in circulating medium and a change in prices, the existence of a connection between the two phenomena is generally accepted. A comparison of changes in circulation and in wholesale prices is presented in Chart 4, which shows movements that occurred between June 1939 and December 1942 as well as during the period of the first World War.

In both war periods the volume of circulating medium and the level of wholesale prices moved upward. The two periods are, nevertheless, in sharp contrast. Despite a relatively greater expansion in the circulating medium during the present war, the rise in the index of wholesale prices has

<sup>28</sup> It should be borne in mind that indexes measuring price changes are less representative in wartime. This is true for the wholesale price index as well as for the cost of living index. Comparisons involving war years are therefore less exact than those for periods of peace.

## CHART 4—WHOLESALE PRICES AND THE CIRCULATING MEDIUM, WORLD WARS I AND II <sup>a</sup>

(Cumulated Annual Percentage Increases)



<sup>a</sup> Based on *Federal Reserve Bulletin* and Board of Governors of the Federal Reserve System, *Banking Studies* (1941) Table 29. Dates are for June 30. The extension of the circulating medium curve for the period June to December 1942 may be subject to some distortion because of seasonal factors.

been much less than it was in the previous war period. During the last war prices increased more rapidly, part of the time much more rapidly, than the volume of circulating medium. In the present war wholesale prices have increased much less than the circulating medium.

The contrast between the two periods was particularly marked in the first year of the present war when the quantity of circulating medium increased substantially with relatively little change in prices. From 1940 on prices rose considerably even though they still lagged behind the increase in circulating medium. In both periods the correspondence between the growth of circulating medium and the rise in prices became greater as the war progressed, in the last war through a slowing down of the rate at which prices increased, and in this war through a speeding up of the rate relative to the growth in circulating medium.

A number of factors help to explain why prices have failed to rise by as much as might be expected in the light of the experience of the last war period or of the recent growth in circulating medium:

- a. The existence of a relatively large amount of unemployed capacity at the start of the present war

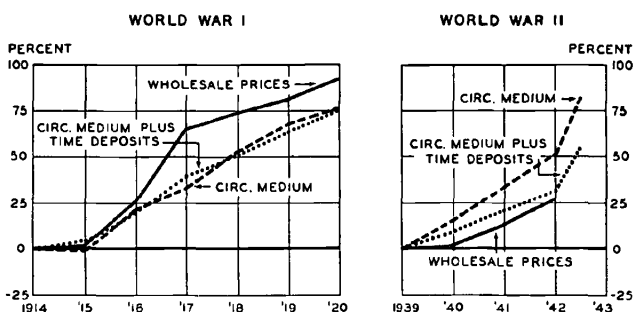
- b. Certain banking developments that have tended to retard the activity of demand deposits<sup>29</sup>
- c. Reduction in the volume of consumer and other types of credit
- d. Restrictions on spending, of which rationing is the most important
- e. Increase in the proportion of the circulating medium diverted to the use of the government.

It is important to recognize that some of these factors, which were very important earlier in this war, are of little or no significance at the present time. Only the last two seem now to be capable of substantial extension.

Because of the number and variety of independent and extraneous factors influencing the volume of both money and trade, the money supply, however this is defined, has lost whatever usefulness it may once have possessed as an accurate guide to the behavior of commodity prices. This is not to deny that it is, nevertheless, an important factor in the determination of prices and the distribution of income.

The spread of price inflation through different sectors of the economy has not been uniform. Table 6 indicates the manner in which the upward push of prices was reflected in the cost of living in different cities throughout the country. From June 1939, the month chosen as a base, to Decem-

<sup>29</sup> Among these developments may be mentioned the imposition of higher service charges, the practice of requiring larger average balances for a given amount of services performed, and the elimination or limitation of time deposits by many banks. As a result of the latter change, a large volume of slow moving deposits that would otherwise appear as time deposits are now classified as demand deposits. As may be seen from the accompanying charts, the contrast shown in Chart 4 is not greatly modified when time deposits are added to the figures for circulating medium. The curve for the combined total is still appreciably below the price curve in the period of the last war, and above it for the present war. The principal change to be detected is that in the present period the index for circulating medium plus time deposits is somewhat closer to the price index than is the index for circulating medium alone.



In the last war the introduction of the Federal Reserve brought about changes within the banking system which were probably of a character to increase rather than reduce the activity of deposits. This would appear to have been the tendency of the improved system of clearing and collecting checks and possibly of the more efficient use of reserves.

TABLE 6—INDEXES OF COST OF LIVING AND OF PRINCIPAL COMPONENT ITEMS  
IN SELECTED CITIES, DECEMBER 1940, 1941, 1942<sup>a</sup>  
(June 1939=100)

City	December 1940			December 1941			December 1942					
	Total Cost of Living	Food	Clothing Rent	Total Cost of Living	Food	Clothing Rent	Total Cost of Living	Food	Clothing Rent			
New England												
Boston	101.7	100.3	101.3	100.4	111.1	116.6	114.3	103.6	122.1	138.5	123.5	105.0
East												
New York	102.7	105.2	101.4	100.4	110.8	120.2	112.2	100.7	121.5	141.2	126.5	100.9
Washington, D.C.	101.2	103.2	101.6	100.0	111.2	120.9	118.8	101.1	120.8	141.8	129.6	100.1
South												
Birmingham	103.8	107.4	101.8	105.7	115.9	125.4	120.3	115.9	123.0	145.6	125.9	108.5
Houston	102.1	106.7	102.5	100.1	111.3	123.3	118.5	100.6	119.4	140.4	126.1	102.0
Middle West												
Detroit	101.8	103.7	101.0	100.5	113.8	120.7	116.1	108.8	122.5	142.6	126.0	105.9
Chicago	102.1	104.4	100.5	100.5	111.6	121.8	112.9	103.7	120.8	139.5	122.5	105.5
Minneapolis	102.1	104.6	101.9	100.8	110.5	116.2	115.8	101.8	119.1	134.8	127.0	102.6
West												
Denver	101.0	101.5	101.3	100.5	110.3	118.6	115.0	101.8	120.5	140.1	125.0	102.5
Pacific Coast												
Seattle	101.2	104.5	101.5	100.1	113.7	125.4	113.7	109.9	124.1	149.7	125.4	102.5
San Francisco	102.4	104.7	101.3	100.4	112.0	123.3	113.1	101.9	125.0	149.8	123.4	102.5
UNITED STATES	102.1	104.0	101.3	100.6	112.1	120.8	114.5	103.7	122.1	141.8	125.5	103.5

<sup>a</sup> Based on data from Bureau of Labor Statistics, *Monthly Labor Review*.

ber 1942 the cost of living for the entire United States rose by 22 percent but the rise for the selected cities shown in this table varied from a low of 19 percent to a high of 25 percent. While this difference is perhaps not extreme, the change that took place month by month was somewhat less even. Thus during a particular month when the reported rise in one of the cities was 3 percent, in another city there was a drop of nearly 1 percent. However, it is to be noted that these discrepancies tended to be overcome in the course of time.

For reasons not wholly attributable to monetary factors, very pronounced differences are to be detected in the behavior of the various elements entering into the computed cost of living. Without exception the greatest rise occurred in the cost of food and the smallest in rent. However, the increase in food costs was much greater in some states than in others. The cost of food in the Pacific Coast centers rose substantially more than the average for the country, and in Minneapolis considerably less than the average. Rents remained practically stable in some localities, notably New York and Washington. In other cities, among them Birmingham and Seattle, rents rose markedly until about the middle of 1942. At that time the ceiling imposed on rents by the OPA brought about a reaction which was very pronounced in these and certain other cities. Differences in the behavior of rents are more marked than in either clothing or food. In some instances, but by no means in all, these irregularities reflect differences in the relative level of rents at the beginning of the period. The rise in rents was not only less than that of either of the other major components of the cost of living but in addition was the least uniform among the different cities. The increase in cost of clothing showed the greatest degree of uniformity. Over the period as a whole, the greatest rise in price of clothing occurred in Washington, and the least in Chicago.

Regional differences in the way various prices have moved are probably influenced by such factors as the scale of defense expenditures, the movement of defense workers into some areas, and the transfer of Japanese truck farmers away from the West Coast. At any event, the irregularities in the pattern of price rise appear to bear little relation to these regional differences with respect to increases or decreases in the volume of circulating medium.

### *The Problem of Liquid Resources*

The increase in the volume of circulating medium constitutes one sector of the growth in liquid claims to which reference was made earlier. It is obvious that all this circulating medium belongs to someone. Even though a considerable part may temporarily be held more or less idle, there is nevertheless a larger volume of funds at the immediate disposal of the public.



These funds represent means of payment that could, granted certain conditions, be thrown on the market at any moment, thereby altering substantially the flow of expenditures and income.

In addition to liquid resources in this immediately disposable form, large groups of claims exist that are, nominally at least, quickly convertible into cash. These include a considerable variety of short-term obligations such as time deposits and various Treasury securities. The increase in total liquid resources during the calendar years 1940 to 1942 was \$72 billion, or nearly 77 percent of the amount in existence at the start of the period.

The major items included in this increase were demand deposits, currency, and government obligations. The growth in time deposits was negligible, amounting to only a little over a billion dollars as against nearly \$32 billion for currency and demand deposits and approximately \$39 billion for Treasury obligations. The increase in the amount of government securities held by individuals took the form chiefly of war savings bonds, while the increase in the amount held by business enterprises was principally in the form of tax notes and marketable securities.<sup>80</sup> Mutual savings banks and insurance companies bought chiefly longer-term issues, while about three-fifths of the acquisitions by non-financial corporations in the first two war loan drives were concentrated in one-year maturities. The liquid resources of the Treasury and federal agencies and trust funds rose approximately \$13 billion during the period, well over half of the increase being in currency and deposits and the rest in Treasury obligations, chiefly of the longer-term issues.

In the three calendar years 1940 to 1942, then, individuals became large holders of redeemable Treasury obligations and non-financial business enterprises became large holders of marketable Treasury securities, particularly those of relatively short maturities. Both groups added large amounts to their liquid resources in the form of currency and deposits. While the increase in liquid resources held by various government accounts was large relative to the amount held at the beginning of the period, their total was much smaller than that held by either of the other two categories of owners.

By far the largest part of the liquid resources belonging to individuals represents income receipts not spent on consumption, taxation, or long-term investment. This is conspicuously true of liquid resources in the form of war savings bonds. As was noted earlier, income retained in the form of idle balances does not exert any direct influence on prices. The existence of a large volume of obligations payable on demand (as in the case of demand

<sup>80</sup> Whether marketable Federal obligations should be viewed as liquid resources is somewhat open to question. They are included here on the grounds that they are so regarded by the holders and that it is the present policy of the Federal Reserve Banks to guarantee their liquidity.

deposits and war savings bonds) or after a short period of time (as in the case of time deposits and short-term Treasury obligations) inevitably raises the question, however, of the possibility of strain in case an exceptionally high proportion of the claims are liquidated at any given time. The basis for the present concern over these liquid claims lies in the clear fact that their volume is not only higher than ever before in our history, but is rapidly expanding.

Fear of the inflationary consequences of excessive liquid resources arises primarily out of the possibility that they may contribute to a sudden and abnormal increase in demand for commodities. The release into circulation of currency and deposits previously held idle would clearly add to the current demand for goods. The inflationary effects of this would be greatly aggravated if holders of time deposits, war savings bonds, and other short-term assets were to try to convert these claims into cash and the cash into goods.<sup>31</sup> This would, of course, place pressure upon the obligors because of the necessity of providing cash. A sudden cashing of liquid claims would presumably lead to a sharp increase in the rapidity of monetary circulation. And if the funds to meet the increased demand for cash were obtained by borrowing from the banks the effect would be to expand the volume of circulating medium.

If the expansionist possibilities of liquid balances were to materialize during a period of boom, as conceivably they might, they would operate to accentuate the boom and perhaps to induce inflation. If they were to occur during a period of unemployment, as is also conceivable, they would tend to promote recovery. It seems probable that the future effects of these liquid funds will depend in considerable part upon their distribution as, for example, between corporations and individuals or among groups with high or low incomes. While we know that substantial changes have occurred, our knowledge either of the present ownership of liquid assets or the probable behavior of different ownership groups is extremely limited. A further factor that may be expected to affect the future behavior of these liquid resources is the form in which they are held, e.g., whether as circulating medium, redeemable government obligations, or as short-term or long-term marketable securities.

The newest and at the same time one of the largest of the items constituting the group of liquid resources is war savings bonds. The fact that their redeemability on demand makes war savings bonds a close substitute for cash is presumably an important element in their attractiveness to in-  
<sup>31</sup> The magnitude of this inflationary effect would depend on the volume of goods and services these accumulated liquid assets could command at the time of their conversion into goods. If the previous price rise had been very great the value, in real terms, of these accumulated savings might have shrunk very considerably, so that the inflationary effect would be small.

vestors. On the other hand, the redeemability feature raises a perplexing problem with respect to future government financing, since it implies that the Treasury may be called upon at any moment to obtain large sums of money with which to meet sudden increases in the demand for redemption. Large floating debts have been known in the past but never before has so large a debt been subject to payment on presentation. Indeed, the present case is highly exceptional since, apart from occasional issues of paper currency, governments have seldom made use of demand obligations.

The extent of the effect will depend, of course, not on the existence of the right of bondholders to demand cash but on the extent to which that right is exercised. The desire to convert into cash is not by any manner of means constant but is determined by conditions certain to vary from time to time. Among these conditions are the need for cash to maintain existing standards of living, as in the case of an increase in unemployment, the desire for cash to support a rise in living standards, and fear of a loss in the value of the monetary unit.

Future policy might be directed toward lessening the incentive to present bonds for redemption. A continuation or extension of the policy of rationing, for example, would reduce the desire of individuals to cash in their bonds through restricting their freedom to use the money they would get if they did so. Likewise, policies that would prevent unemployment would, at the same time, limit the demand for redemption by reducing the need of individuals to convert their liquid assets into cash.<sup>32</sup>

Probably the most significant consideration with respect to war savings

<sup>32</sup> It is necessary to avoid the temptation to digress on aspects of this subject which are fiscal rather than monetary in character. Certain points may, however, be noted briefly in passing. A period of unemployment with rising demand for redemption could have the curious effect of enabling the debt to be reduced at the expense of people who would otherwise be on relief. This would be the result if individuals were required to liquidate any war savings bonds they might own before becoming eligible for subsistence payments by the government. Even without a means test such as this presumes, many individuals would doubtless use up part or all of their savings in the form of government bonds before applying for relief. It is reasonably certain that any strain imposed upon the Treasury by demand for redemption in a period of rising unemployment would reduce in some degree the burden caused by the necessity of caring for people on relief.

A further aspect of the problem of redemption arises out of the provision for payment of interest on war savings bonds. These bonds, as is well known, bear no interest in case they are redeemed within a year of the date of issue and bear a very low rate if redeemed at any time up to five years. In case a bond is redeemed in one year or less, the net effect is that the Treasury has borrowed on short term without interest; if redemption takes place within six and a half years of issue the rate of interest is a little over 1 percent. While cost of handling may outweigh the saving on interest, it is nevertheless important to recognize this aspect of early redemption.

Finally, to the extent that the bonds are held to maturity the government is spared the necessity of making any interest payments until 10 years from date of issue. This deferment of interest charges is of obvious advantage to a country at war; it may help to offset other features of the bonds which are more open to objection.

bonds, and the feature that bears most closely upon problems of money supply and price movements, has to do with the effect of their ultimate repayment, whether by early redemption or otherwise. Much of the recent literature on fiscal policy and particularly on deficit financing assumes that an expansion in government debt tends to be inflationary and a reduction to be deflationary. Some writers have gone so far as to conclude that any substantial reduction in national debt is virtually precluded because of the deflationary consequences that could be expected to follow. This reasoning is based on two principal assumptions, first, that repayment of debt held by the banks would tend toward the destruction of demand deposits and, secondly, that it would restrict consumer expenditures. In the case of war savings bonds, which are held chiefly by people in the lower-income brackets, neither of these assumptions can be accepted as valid. Discharge of these obligations would entail no destruction of demand deposits, such as would follow payment of debt held by banks; and a transfer of funds, such as would occur if they were paid out of taxation, would largely be to individuals with a high propensity to consume so that the effect would probably be expansionist.<sup>33</sup> With respect to war savings bonds, then, there is considerably less danger than has frequently been alleged that a postwar reduction of government debt would exert a depressive influence. It might, in fact, have the opposite effect. The spenders-for-recovery and the orthodox budget-balancers may be able, through the medium of war savings bonds, to meet on common ground.

In this respect war savings bonds closely resemble the assets accumulated under a system of compulsory savings. One of the principal arguments advanced in support of compulsory savings is that they would provide a back-log of potential purchasing power for use in the event of a postwar decline in business. The same end may be served by war savings bonds.

#### IN CONCLUSION

The increase in circulating medium that has occurred in recent years raises questions as to the future of Federal Reserve policy.<sup>34</sup> The growth in circulation means that the Reserve System, in pursuing policies designed to influence the volume of credit, would have to conduct operations on a much larger scale in order to effect the same relative change in bank credit outstanding. If in the meantime changes had been introduced in reserve require-

<sup>33</sup> Because of the relatively high propensity to consume of holders of war savings bonds, the general effect of their redemption is likely to be expansionist under any circumstances. If the funds for redemption were obtained by new borrowing from banks the effect would be especially so.

<sup>34</sup> The effects of the war on the Federal Reserve System will be discussed in detail in a companion study in this series.