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Chapter Title: What Becomes Of The Increased Circulating Medium?

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was chiefly responsible for the growth in demand deposits between June 1914 and June 1919. The role of loans and discounts at that time was scarcely as dominant, however, as that of government securities in the present war. During our participation in the last war, the tendency for demand deposits to increase was checked by the rapid growth of time deposits, while since our entry into the present war time deposits have remained almost unchanged.

One of the few consistent threads running through both periods has been the tendency for currency in circulation to increase. While such an increase is characteristic of war and customarily accompanies a growth in demand deposits, the magnitude of the recent expansion of currency, particularly in the year following Pearl Harbor, is wholly exceptional.

#### WHAT BECOMES OF THE INCREASED CIRCULATING MEDIUM?

The present section is a statement of accompanying phenomena rather than causes. The issue of causal relationships raises points of theory on which there is no general agreement and into which it is not practicable to enter here. The problems to be examined are of a quantitative rather than a qualitative character. To what uses is the increased quantity of circulating medium being put? What groups are obtaining ownership of the increased volume of circulating medium? Has there been an increase in idle money?

#### *Use of the Circulating Medium*

The great expansion in economic activity since the beginning of the war is apparent in almost every field. The increase both in the general level of prices and in the physical volume of goods and services signifies more work to be done by the circulating medium. The higher level of economic activity is reflected in the percentage of increases from December 1939 to December 1942 shown by different business indicators of which the following are representative:<sup>9</sup>

Industrial production (physical volume)	57.6%
Total farm marketings (physical volume)	31.8
Income payments	64.0
Farm	132.7
Non-Farm	58.2

<sup>9</sup> Source: *Federal Reserve Bulletins* and Bureau of Foreign and Domestic Commerce, *Survey of Current Business*. While this table does not provide a measure of the physical volume of trade it indicates that substantial increases in trade have occurred. A large part of current payments are for war commodities for which standard price indexes are hardly relevant and several economic areas such as finance and service are only indirectly represented by the indexes given here.

Factory payrolls	153.9%
Department store sales (value)	31.6
Wholesale commodity prices	27.5
Cost of living	20.9
Prices received by farmers	85.4
Circulating medium	92.3

Some businesses and individuals have increased their holdings of deposits and currency in order to provide for growing tax liability, purchase of government bonds, debt retirement, future goods purchases, and emergencies. Such accumulations slacken the rate at which money circulates.<sup>10</sup> Adoption of the policy of heavy borrowing at intervals of several months has involved an increase in the average balance held by the Treasury and thereby reduced the activity of circulation of money. Other evidence likewise indicates a decrease in the rate of turnover of money. From the end of 1939 to the end of 1942 adjusted demand deposits increased 64 percent but monthly bank debits, which reflect the volume of total payments effected, increased by only 50 percent. The figure for the velocity of bank deposits in the 101 leading cities as computed by the Federal Reserve Bank of New York shows a decline in these three years from 22.5 to 20.5 per annum.<sup>11</sup>

The greater use of circulating medium has apparently taken the form not only of a larger volume of current payments effected, but also of the accumulation of larger reserve balances in anticipation of future payments.

### *The Increase in Deposits*

Any calculation of the distribution of cash holdings among different owners is influenced to some extent by the time when the calculation is made. Cash is accumulated for payments, such as investments, taxes, and dividends, which are made at irregular intervals. The irregularity of disbursements leads to fluctuations in the amount of cash held by corporations and others. In particular, the sharp rise in Treasury balances at tax dates and at the time of loan drives finds its counterpart in a decrease at such times in the volume of private holdings. At best, our knowledge regarding the ownership of cash balances is limited and any conclusions based on present understanding are tentative and subject to revision as further information becomes available.

<sup>10</sup> Changes in the rate of monetary circulation may also result from changes in the methods of payment. Thus a reduction in the use of consumer credit or an increase in the payroll period would contribute to a slower turnover of money.

<sup>11</sup> Largely because of the number and variety of financial items included in debits to deposit accounts, they are not to be regarded as an accurate measure of the velocity of money used in payment for goods and services.

It appears from the *Statistics of Income*, supplemented by a study of corporate cash balances undertaken by the National Bureau of Economic Research, that in December 1939 non-financial corporations held 26 percent, and financial corporations, other than banks, 10 percent of total adjusted demand deposits.<sup>12</sup> State and political subdivisions held approximately 10 percent and the holdings of foreigners, exclusive of foreign banks, amounted to 6 percent. The remainder, 48 percent, was held by "all others." This category includes individuals, unincorporated businesses, personal trust accounts, and eleemosynary institutions. A large proportion of the currency in circulation was also held by this group.

Data comparable with those of 1939 are not available to show the distribution of ownership of deposits at the end of 1942. However, we know that from December 1939 to December 1942 the demand deposit balances of all groups increased by approximately 64 percent, and a study of selected corporate balance sheets gives some indication of how this growth has taken place among different classes and users of deposits.

An analysis of these data indicates that the deposit balances of non-financial corporations increased approximately 85 percent in this period, or considerably more than the average increase for all demand deposits. This was offset by a decline of more than 30 percent in the balances of financial corporations, with the result that the deposit balances of all corporations other than banks increased at a somewhat slower rate than total demand deposits. The accounts of state and political subdivisions increased approximately 40 percent and the reported holdings of foreigners, exclusive of foreign banks, showed little change. The "all other" group increased its deposit balances more than the average. Moreover, a large part of the increased currency in circulation has also gone to this group.<sup>13</sup> In the three years ending with December 1942, the estimated rates of increase in total demand deposits and currency held by corporations and by "all others" have not been widely divergent.<sup>14</sup>

<sup>12</sup> These figures are derived from corporate cash balances which include currency on hand and time deposits as well as demand deposits. In the case of corporate groups for which details are available, demand deposits comprised over 90 percent of total cash holdings. Our calculations are based on the assumption that this ratio of 90 percent held with respect to all reported corporate cash balances. The result may be to understate slightly the amount of corporate deposit balances and to overstate the balances of "all others." Figures for 1939 are from *Statistics of Income* and for 1942 are the result of a special study of corporate balance sheets. The latter is based on samples comprising 49 financial corporations and a group of non-financial corporations including all Class I steam railroads, 31 public utility companies, and 241 industrial corporations engaged in manufacturing, trade, and construction.

<sup>13</sup> In addition to the currency held by corporations as till balances, an unknown amount has been taken outside the United States by the armed services, is held by foreigners abroad, or has been lost.

<sup>14</sup> Little is known about the growth of the deposits of the "all other" group. Sample studies

Studies made by the Securities and Exchange Commission indicate that at the end of 1942 about 40 percent of all deposits were held by domestic corporations and about 60 percent by individuals and unincorporated business. These figures were reached by methods somewhat similar to those used in the calculations presented above, and when allowance is made for minor differences in coverage the two studies agree fairly closely.

Estimates of the ownership distribution of demand deposits at the end of March 1943 have recently been released by the Federal Reserve. These are based on a survey covering principally large and medium-sized banks throughout the country. They indicate that between 70 and 80 percent of all deposits of individuals, partnerships, and corporations are held by businesses, both corporate and noncorporate, as compared with only 20 to 30 percent held by individuals. A number of factors help to explain the difference shown by the Federal Reserve estimates:

- a. Deposits of unincorporated business are included with those of corporations rather than with "others."
- b. The Federal Reserve estimates were primarily based on larger deposits in medium-sized and large banks and they do not allow for "float."
- c. In recent months corporate cash balances have begun to rise sharply because of a decline in the rate of expenditures on plant expansion, retooling, and accumulation of inventory. In some instances inventories have been reduced.
- d. The estimates relate to a date when balances were expanded with funds accumulated in anticipation of purchases of government securities in the April Treasury financing. Such accumulations were probably of relatively greater importance in business than in personal accounts.<sup>15</sup>

It is not certain to what extent the differences in the estimates are to be reconciled by the factors mentioned. At any rate they suggest the need for further study of this highly significant problem.

A further important observation is that the rate of growth of cash, meaning by this combined holdings of deposits and currency, has not been uniform among the different corporate groups: some have experienced a very large increase while others have shown a decrease. From the study

<sup>15</sup> "Much of the increase in business deposits occurred in the last three months of the fifteen-month period, and a large portion of the deposits then accumulated were utilized to purchase Government securities during the war loan drive. Insurance companies, which held exceptionally large deposits at the end of March, utilized a large portion of these to purchase securities during the drive. In addition, purchases of new securities by other corporations were substantial. During the drive bank deposits of individuals, partnerships, and corporations declined by \$5 billion or more."—Board of Governors of the Federal Reserve System, Press Release, July 7, 1943, p. 5.

made by banks suggest that a large part of the increase represents a growth of existing balances rather than the establishment of new accounts. They indicate also that the growth was not uniform among the different categories of deposits in this group.

of corporate balance sheets referred to earlier, it appears that up to the end of 1942 railroads and manufacturing and trade corporations added to their cash, while in general public utilities and financial corporations reduced cash holdings.

The increased business activity has necessitated a large expansion in the working capital needs of many organizations. Even so, cash balances of the larger corporations often exceed their current working needs. Maintenance of large balances may be designed to enable a company to retire debt or to invest in inventories or fixed assets while continuing operations in the face of a temporary drop in income. The growth of cash holdings of some companies in the period under review appears to represent the establishment or extension of such a cash cushion. In addition, most corporations have experienced a sharp increase in federal tax liability, and many companies are holding cash to meet at least part of this claim.<sup>16</sup>

The increased cash holdings of railroads represent in part an accumulation of funds which would have gone into maintenance and replacement but for inability to obtain materials. Some of the increased cash represents funds set aside for debt retirement and as an offset to increased tax liabilities. The railroads studied made temporary investments, largely in tax notes, roughly equal to the increased tax accruals. The increased amount of cash held by manufacturing and trade corporations represents the accumulation of larger working capital and, to a greater extent than for the railroads, the earmarking of funds for tax payments.

Relative to total assets, the "very large" corporations increased their cash balances less than the "large" companies. This is partly the result of the great expansion of companies, classified as large, in the aircraft, ship-building, and other industries producing military goods. The very large corporations had less need to build up working balances because of substantial amounts of cash accumulated during the thirties. By 1942, cash represented a smaller percentage than before of the current assets of both large and very large companies.

All items in current assets—inventories, receivables, marketable securities, and cash—showed an increase in the period from 1939 to 1942. Between 1941 and 1942, however, some of the companies decreased both receivables and inventory,<sup>17</sup> and this may have resulted in an accumulation of cash.

<sup>16</sup> The corporations examined offset a large part of their increased tax liability by purchasing tax anticipation certificates or short-term government securities, with a resulting reduction in cash. As long as earnings are maintained or are increasing, the tax liability may be met in whole or part out of current income; this implies a temporary increase in cash to the tax date. To a large extent the increased cash holdings represent a provision for the corporations' tax and other needs at some future time when earnings are declining.

<sup>17</sup> Twenty-seven percent of the companies in a sample of 125 reduced both receivables and inventory during 1942.

Another factor contributing to increased cash holdings was the increased bank borrowing of corporations. The total of commercial and industrial loans was 33 percent higher in 1942 than in 1939, but was lower than the 1941 peak.

Public utility companies included in the sample held slightly less cash in 1942 than in 1939; the growing tax liability appears to have been offset by the increase in tax notes and marketable security holdings. The decrease in cash balances of financial corporations is partly attributable to their participation in the Treasury borrowing program. Other financial corporations, notably sales finance companies, greatly reduced their field of operations as a result of production curbs and the regulation of consumer credit.<sup>18</sup>

### *The Relative Growth of Currency*

The comparisons just made relate to the growth in the volume of circulating medium in general and of deposits in particular, but they throw little light on the other aspect of recent monetary developments, namely, the relatively greater growth in currency than deposits. This phenomenon has been associated with certain pronounced changes in the character of payments and in the methods of effecting them.

The growth in wage payments has been much greater than the increase in other income shares. Between 1939 and 1942 civilian employment rose by 7.7 million persons.<sup>19</sup> Factory employment increased nearly 57 percent between the start of the war in 1939 and the end of 1942.

In addition to the growth in number of workers employed, there has been a substantial increase in wage rates. Average hourly earnings in factories, including higher pay for overtime, are estimated to have increased by from 33 to 37 percent between the end of 1939 and the end of 1942. An additional factor operating to bring about a rise in labor income has been an increase in the average number of hours worked per employee. The composite effect of changes in the three factors mentioned—number of workers employed, hourly wage earned, and number of hours worked—accounts for the spectacular rise in factory payrolls since the beginning of the war. On the basis of the average for 1939 as 100, factory payrolls rose to an average

<sup>18</sup> The financial change in corporate structure during the second World War will be the subject of a subsequent study in the current series of the National Bureau of Economic Research on the Effects of War on the Financial System.

<sup>19</sup> Figures for total civilian employment include the self-employed, farmers, professional groups, unpaid family workers, and students in school who work part-time. Thus the employment figures cover far more than the number of people receiving regular wages. Since a very large proportion of the reported increase in employment was in industry, the percentage increase in number of people on payrolls was much greater than the nominal rise of 15 percent would suggest.

of 242 in 1942. At the end of 1942 the figure stood at 288, or not far from three times the average for 1939.

While wage payments are made partly by checks, currency is employed to a relatively greater degree in paying wages than in paying dividends, rents, and other shares. To a large extent wage earners either draw their wages in currency or immediately exchange their checks for currency. The rise in factory payrolls has therefore contributed to the increased use of currency.<sup>20</sup> Moreover, as employment and wages increase, places of business which, for goodwill or profit, cash employees' checks are obliged to increase the amount of currency held as till money.

Additions to civilian employment alone provide a very incomplete picture of either the growth in number and amount of income payments or the changed pattern of income distribution. Among other things, it leaves out of account the growth of the armed forces. By the end of 1942 this group had increased by about 6½ million persons. The character of life in the armed services requires that remuneration be largely in cash and the mobility of the armed services is not conducive to the establishing of deposit accounts. Furthermore, substantial amounts of United States currency are taken outside the United States by the military authorities in order to provide for the payrolls of the various branches of the service, and this enters into the statistics of money in circulation. On the other hand, the practice of remitting part of the pay of service men in the form of allowances to their dependents has offset to some extent the need for currency to meet military payrolls.

Many of the individuals receiving increased income and dependency allowances have never been accustomed to handling their affairs through banks. Moreover, the increase in employment in the defense industries has involved shifts in population to new surroundings, and difficulties in the way of establishing banking connections as well as the possibly temporary nature of their residence have probably led the public to hold larger amounts of currency. The requirement that minimum balances be maintained and the exacting of service charges by banks have doubtless acted as additional barriers to the opening of new accounts. As a result of such developments as these, currency has come into increased importance as a storehouse of value.

Changes in the character of trade have likewise contributed to the great increase in the use of currency. An indication of the expansion in trade payments, embodying changes in both volume and price, is afforded by the indexes of retail store sales given in Table 5. What is remarkable

<sup>20</sup> Cf. the statement that at the end of the last war "the higher wage scale with the great activity in industry, and the extravagance of the wage-earner, calling for increased circulating medium, would appear to be the main factor to which the large increase in Federal Reserve notes should be attributed."—Federal Reserve Bank of Boston, *Annual Report for 1919*, p. 19.



about this table, however, is not the rise in total retail sales of 37 percent from 1939 to 1942 but the marked difference in the behavior of sales of durable as contrasted with non-durable goods. After the middle of 1941 sales of stores specializing in durable goods declined drastically, while sales of stores specializing in non-durable goods continued to rise. In general, it is to be expected that the purchase of non-durables will be effected by currency to a greater extent than the purchase of durable goods. Furthermore,

TABLE 5—INDEXES OF SALES OF RETAIL STORES <sup>a</sup>  
(June 1939=100)

<i>Date</i>	<i>All Retail Stores</i>	<i>Durable Goods Stores</i>	<i>Non-Durable Goods Stores</i>
June 1939	100.0	100.0	100.0
December 1939	106.8	113.5	104.7
June 1940	109.9	116.3	107.9
December 1940	116.5	138.7	109.3
June 1941	129.1	153.0	121.3
December 1941	129.4	126.4	130.4
June 1942	131.3	92.9	143.9
December 1942	137.1	89.1	152.8

<sup>a</sup> Based on Bureau of Foreign and Domestic Commerce, *Survey of Current Business*, August 1942, Table 15, and May 1943, p. S-7.

price rises seem to have been greater for those elements in the cost of living for which payments in currency are most important. On the average, prices of food and clothing, for example, rose considerably more than rents. Between June 1939 and the end of 1942, while the cost of living as a whole was rising by 22 percent, the price of food entering into the cost of living index rose 42 percent.

The combined effect of both price increases and the volume of goods traded is reflected in the trend of sales of stores operating largely on a currency basis as compared with those whose business is less exclusively of this type. From June 1939 to the end of 1942,<sup>21</sup> while the sales of all retail

<sup>21</sup> *Survey of Current Business*. Daily average indexes adjusted for seasonal variation.

stores rose 37 percent the sales of a group of establishments of the sort where payment is ordinarily made in currency rose as follows:

Drug stores	67%
Chain drug stores	52
Eating and drinking places	90
Food stores	61
Chain grocery stores	55

Payments for services which are normally conducted by means of currency have also expanded considerably. Between the middle of 1939 and the end of 1942, passenger revenues of Class I railroads rose by 210 percent. Large increases in revenue were experienced by restaurants and by movie theaters and other places of amusement.

Along with the relative shifts in types of expenditures have gone certain closely related modifications in the methods of payment. Restrictions have been imposed on various forms of consumer credit. The shift away from many lines of durable goods trade has involved an automatic contraction of credit, since credit ordinarily figures prominently in the marketing of durable goods. The diminishing relative importance of credit in retail trade became particularly marked during 1942. Where cash sales are calculated to have represented a monthly average of about 48 percent of department store sales in 1941, they rose to 61 percent at the end of 1942, and for the year as a whole amounted to a monthly average of 55 percent.<sup>22</sup>

The expansion of circulating medium in general and of currency in particular appears, then, as a highly understandable corollary of the social and economic changes that accompany war.<sup>23</sup> Conspicuous among these changes have been a substantial increase in civilian and military employment, a growth in the volume of production and trade, a rise in commodity prices and of income payments, a change in the character of trade and the methods of effecting payment. Some of these changes may have been exaggerated by the very increase in circulating medium itself; but all are directly and some are inseparably connected with the fact that we are a nation at war.

<sup>22</sup> *Federal Reserve Bulletins*. The cash sales referred to include checks as well as currency transactions so that the increase cannot be said to have entailed an equivalent increase in the use of currency. On the other hand, not all charge accounts and deferred payments are met by check. While it is probable that the figure for cash sales overstates to some extent the absolute magnitude of currency transactions, it clearly indicates an increase in the use of currency.

<sup>23</sup> Other factors than those mentioned here may also have contributed to the greater increase of currency than of deposits. It is frequently said, for example, that currency is being widely used for small savings and that considerable amounts of cash are held in this form to facilitate evasion of taxes. The extensive use of currency for such purposes is obviously difficult to prove and still more difficult to measure.