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THE LIQUIDITY POSITION OF MANUFACTURING CORPORATIONS, WORLD WAR I

A SHORT DISCUSSION OF THE LIQUIDITY position of our sample of large manufacturing corporations during the years of World War I will serve as a useful background for an analysis of cash balances in World War II. The war years 1915-18 were years of sharp business expansion. As in other periods of expansion, operating assets were increased, an increase that was financed by retained profits, new issues of stocks, trade credits, and new bank loans.

The question of primary interest in our analysis is whether or not companies increased their cash balances relative to their payments. As the managements of many corporations had to anticipate a conversion to peacetime production when the war was over, they might have built up a strong liquidity position during the war in order to be prepared for the contingency.

Corporations prepare for such contingencies partly by setting up special reserves. During the first World War they did this only to a small extent;[1] in fact, in our particular samples of large manufacturing corporations only one corporation had a special reserve for postwar contingencies. Probably special appropriations for contingency reserves were provided in quite a large number of cases, but taken altogether the amount of these appropriations was relatively small. At any rate, the mere setting up of a reserve on the corporation's books does nothing to make the corporation more liquid. The liquidity position depends on the composition of assets, and only if the setting up of reserves is associated with a deliberate increase of liquid assets can it be said to increase the corporation's liquidity. The income set aside

[1] See Charles H. Schmidt and Ralph A. Young, *The Effect of War on Business Financing: Manufacturing and Trade, World War I* (National Bureau of Economic Research, Financial Research Program, 1943).

as special reserves may go to swell the corporation's inventories, receivables, or fixed equipment instead of increasing its cash balance or marketable securities. The liquidity position therefore has to be investigated by analyzing not the special reserves set up during the war but the liquid assets in relation either to payments or current liabilities.

A first glance at the cash balance figures alone gives the impression that the liquidity of corporations increased greatly during the war years, since cash in 1918 was some two and a half times higher than in 1914. This impression is strengthened if the increase in cash balances of our sample of large manufacturing corporations is related to the increase in total means of payment. As Table 1 shows, the percentage increase in cash balances was

Table 1—INDEXES OF CASH BALANCES OF LARGE MANUFACTURING CORPORATIONS AND OF TOTAL MEANS OF PAYMENT, 1914-21
(*1914 = 100*)

Year	*Cash Balances*		*Total Means of Payment*[b]
	Sample A[a]	Sample C[a]	
1914	100	100	100
1915	135	135	110
1916	192	210	127
1917	237	251	141
1918	248	265	159
1919	245	262	183
1920	221	234	189
1921	215	209	188

[a] For a description of the sample see Appendix A.

[b] Includes demand and time deposits, excluding government deposits, of all banks (including savings banks) plus currency in circulation outside banks. Data from *Banking and Monetary Statistics* (Board of Governors of the Federal Reserve System, 1943) p. 34.

greater than the percentage increase in total means of payment; in other words, the large corporations increased their share in total means of payment during the first World War.

This impression of an increased cash liquidity during World War I is misleading, however. If liquidity is measured by the ratio of cash to payments, the liquidity of corporations is found to have decreased. The ratio, after rising between 1915 and 1917, fell in 1918 to a level lower than in 1915. (See Table 2.) No

Table 2—Liquidity Position of Sample C of Large Manufacturing Corporations, 1915-22[a]
(*dollar figures in millions*)

Year	Average Cash[b]	Average Marketable Securities[b]	Estimated Cash Payments	Ratio of: Cash to Payments[c]	Ratio of: Cash Plus Marketable Securities to Payments[d]
1915	$169	$ 56	$2,303	7.3%	9.8%
1916	249	127	3,397	7.3	11.1
1917	332	259	4,423	7.5	13.4
1918	372	388	5,893	6.3	12.9
1919	380	350	6,113	6.2	11.9
1920	358	262	6,088	5.9	10.2
1921	319	245	4,142	7.7	13.6
1922	315	242	4,191	7.5	13.3

[a] For a description of the sample see Appendix A.
[b] Average of two successive year-end figures.
[c] Ratio of average cash of two successive year ends to total payments in the year between the two dates.
[d] Ratio of average cash plus average marketable securities of two successive year ends to total payments in the year between the two dates.

"free" cash existed at the end of the war, whether the situation in 1918 is compared with that of the beginning of the war or with that during the expansion of the twenties. It must be pointed out that, in spite of the fact that their cash position in 1918 was not very favorable, corporations in the expansion immediately following the war drew on their cash balances with the result that in 1920 the ratio of cash to payments was the lowest in the entire period, 1915-43.

As for marketable securities, the point to be stressed first is that World War I is responsible for the corporations' now well-established custom of holding marketable securities. At the close of 1914 such holdings of corporations were negligible, but under the impact of the various war loan drives the figure rose greatly. By the end of 1918 our sample of large manufacturing corporations (sample C) held more than twenty times the amount of securities which they held four years earlier. There is no doubt that this increase in marketable securities made possible the decline in cash liquidity. Since marketable securities are a close substitute for cash, the companies could lower their cash liquidity as they increased their holdings of securities. Objection may be raised to the contention that marketable securities are as good as cash, on the ground that a sudden rush to liquidate them would cause a sharp fall in their prices. There is some truth in this objection for the period under consideration. When the corporations actually did liquidate a large part of their holdings of marketable securities in 1919 prices began to break, particularly since commercial banks were not prepared to take over securities in large volume. Nevertheless, the corporations considered that their holdings of marketables added to their liquidity, even though in many cases they had to sell them at a loss.

The ratio of cash plus marketable securities to payments in 1918 was actually higher than at the beginning of the war — 12.9 percent in 1918 compared with 9.8 percent in 1915 (Table 2). In the postwar boom, corporations were able to draw on their marketable securities, with the result that by 1920 the ratio of cash plus marketable securities to payments declined to 10.2 percent. The funds obtained through sales of marketable securities apparently were used to discharge tax liabilities.[2]

The fact that marketable securities plus cash constituted a higher percentage of total payments in 1918 than in 1915 does not permit the conclusion that there was a conscious policy on the part of corporations to build up excess liquidity. If the ratios commonly in use for measuring the liquidity of an industrial company (see Chart 17) are considered, they are found to have been lower in 1918 than in previous years. The sharp decline in the ratios between 1916 and 1918 seems to indicate the absence of any conscious effort to build up a special liquidity for the purpose of postwar contingencies. Nor is the building up of such special liquidity necessary as long as the corporations can rely on obtaining bank credit. The inventory boom of 1919 and the first half of 1920 was indeed financed overwhelmingly by bank loans, and not by drawing on liquid funds built up during the war.

For medium-sized and small manufacturing corporations (for

[2] The decrease in current liabilities in 1919 was greater than the decline of marketable securities. A closer investigation shows that the item "other current liabilities" was responsible for the decline of total current liabilities. Since tax liabilities are the main part of "other current liabilities," we can conclude that the funds obtained by sales of government bonds were used to reduce the tax liabilities. Notes payable *increased* at the same time.

which figures are available only since the end of 1916) the cash liquidity shows no appreciable change over the last two years of World War I. The cash balance of this group of companies at the end of 1918 was 27.4 percent above that at the close of 1916. Since payments increased only slightly more than average cash, the ratio of cash to payments in 1918 was approximately the same as in 1917 (2.6 percent as against 2.7 percent). However, the medium and small corporations apparently were heavy buyers of marketable securities; the item "investments" which includes these securities multiplied 3½ times between the end of 1916 and the end of 1918 and continued to increase through 1920. The increase during the war years must have consisted to a large extent of government securities bought during the war loan drives. The fact that "investments" decreased sharply in 1921, the year of business contraction, also suggests that this group of corporations had made heavy purchases of marketable securities during the war period. As a result of these purchases the liquidity position of this group seems to have improved in 1918 compared with 1917. The ratio of average cash plus "investments" to payments was 8.7 percent in 1918, as against 6.5 percent in 1917. Although only part of "investments" can be considered as liquid funds, the figure indicates the direction in which the liquidity of medium-sized and small manufacturing corporations moved in the late years of World War I.[3]

SUMMARY

(1) Neither large nor medium-sized and small manufacturing corporations built up a special *cash* liquidity during World War I.

(2) The ratio of cash plus marketable securities to payments for large manufacturing corporations was higher at the end of World War I than at the beginning, indicating that a certain amount of "free" liquid funds were available at the close of the war. Medium-sized and small manufacturing corporations also possessed such free funds.

(3) These funds were used by large manufacturing corporations mainly to discharge tax liabilities. The inventory boom that set in after the war was financed not by drawing on free liquid funds but by bank credit.

[3] The available material does not separate trade payables and bank debts for this group of corporations. It is therefore not possible to tell to what extent this group of corporations had to rely on bank credit for the financing of the postwar inventory boom.