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rent assets and short-term debt, given the inflated financial structure of 1920, was desirable from the standpoint of the long-run prosperity of the whole economy; and as to whether business enterprise could have avoided participating so extensively in the postwar accumulation of inventory, of current debt, and of forward commitments to buy and sell. Business concerns were, of course, following long-established practices of financing current operations, and their policies were formulated by executives whose experience did not embrace a single period of drastic price deflation. Furthermore the business contraction and price deflation of 1920-21 was more than a crisis of commitments, inventory and current debt; irresponsible cancellation of orders and the heavy liquidation of inventory and business debt seem mainly to have made the contraction more severe. Nevertheless, it was unfortunate that the postwar environment induced such widespread disregard of financial prudence.

In drawing general conclusions from this paper, it should be borne in mind that only a limited segment of the economy is dealt with here, and only a few of the factors involved. Many elements other than those associated with the financing of manufacturing and trade enterprise determined the course of the war period financial expansion, and many other elements, international as well as domestic, operated to bring about the postwar liquidation. The difficulties that beset any effort to obtain a completely comprehensive view are so great, however, that use must be made of investigations of more limited scope. Only by comparing the views of a number of different observers will it be possible to develop the entire record of World War I and absorb fully the economic lessons of that period.

FINANCING TENDENCIES, WORLD WAR II — A PRELIMINARY COMPARISON

Compared with the present conflict, World War I was part-time. Even in 1918, the year of greatest effort, probably only a little more than a fifth of the national product was devoted to war. Military output made no serious inroads on civilian supplies until the second half of 1918, and by the end of that year hostilities had ceased and demobilization was in full swing. But in 1941, before the country was directly involved in World War II, one-tenth of the nation's

product was absorbed by military outlays; in 1942 war took one-third of the national product, and in 1943 it will take at least one-half.³ The business financing problems precipitated by this greater concentration of effort upon war needs, while they find some parallels in World War I experience, are much more complex and difficult than the ones which arose in the earlier period.

At the outbreak of World War II the pattern of business debt among manufacturing and trade companies, in relation to size of enterprise, was similar to that at the outbreak of World War I. Broadly speaking, equity was high and debt was low for large corporations and very small corporations, the highest ratios of debt to equity occurring in the medium and small enterprise classes; an exception was wholesale trade, where the debt ratio rose with size. But economic changes that occurred between 1914 and 1939 had altered the significance of the pattern. First, the composition of manufacturing and trade was considerably different in terms of activities, as a result of the integration of business processes, of the growth in the importance of durable goods, and of other changes in the structure of the economy. Second, the average size of enterprises was greater, and a slightly greater proportion of enterprises, partly because of the many consolidations and mergers of the 1920s, were in the large-size-high-equity category, which includes those with total assets in excess of \$5 million; in consequence, for manufacturing and trade as a whole, the relative importance of debt in financial structure had declined.⁴

Also the financial expansion that has taken place in manufacturing and trade enterprise since the beginning of World War II resembles, in several important respects, what occurred during the World War I period. Sales of large corporations (particularly in manufacturing) have increased more than those of medium and small-size companies (except for smaller companies whose products are essential to the war effort, such as aircraft and machine tools). Asset investment, especially of large corporations in strategic industries, has once more been greatly accentuated. Current assets of

Milton Gilbert and George Jaszi, "National Income and National Product in 1942," *Survey of Current Business* (March 1943) pp. 10-19.

These general observations are drawn from an unpublished study by Sidney S. Alexander, *Changes in the Financial Structure of American Business Enterprise, 1900-1940*, National Bureau of Economic Research, Financial Research Program (ms. 1943).

manufacturing and trade — cash, marketable securities, receivables and inventory — have again expanded in relation to total assets, and current debt too has risen.⁵

But there are also conspicuous differences between the two war period expansions. Because of the increased mechanization of modern warfare the need for specialized productive plant is immeasurably greater in World War II than it was in World War I; and the loss of shipping facilities and of foreign sources of supply — of tin and rubber, for example — has greatly extended the number and variety of goods that must be produced. Much of the industrial plant capacity needed for the present war has had to be newly constructed. At the end of 1939 the total book value of plant and equipment in all manufacturing industry, net of accrued depreciation amounted to about \$23 billion; by mid-1943 almost \$20 billion of new plant capacity for war production was either finished or in process of construction,⁶ substantially over half of which was in industries whose facilities may have some peacetime application.

Approximately 80 percent of this new construction has been publicly financed, either under Emergency Plant Facilities Contracts of the Army, the Navy or the Maritime Commission, or by the Defense Plant Corporation, the Reconstruction Finance Corporation,⁷ or the British government. In comparison with a figure of about \$15 billion of publicly financed additions to industrial plant made during the present war, the amount so spent during World War I probably did not exceed \$750 million,⁸ and the bulk of this investment was for production of munitions and ships. For the most part the financing of World War I additions to manufac-

⁵ See Roy A. Foulke, *Our Critical Wealth in Inventories*, Dun & Bradstreet, Inc. (New York 1942) pp. 37-39 and 52-71, which gives a significant summary report of financing tendencies in 70 lines of business activity (42 manufacturing, 21 wholesaling and 7 retailing) for the years 1937-41.

⁶ Based on War Production Board press release, June 30, 1943.

⁷ As of November 1, 1942, the Reconstruction Finance Corporation and its subsidiaries had financed or contracted to finance the construction, equipment or expansion of 1,337 plants for the production of war materiel, the total cost being in excess of \$8.3 billion.

⁸ Lowell J. Chawner, "Capital Expenditures for Manufacturing Plant and Equipment, 1915 to 1940," *Survey of Current Business* (March 1941) p. 10, gives a figure of \$500 million total publicly financed additions to manufacturing facilities, 1917-19. Although information is not available, it appears that some additional facilities were financed by Allied governments, 1915-17.

uring capacity was effected through industrial channels without direct participation by the Federal government in the risks of ownership, and such additions were on a moderate scale in comparison with those in the present war. Thus there was no serious legacy of government-owned plant and facilities to be disposed of by dismantlement and scrap, by public operation, by outright or installment sale to private interests, or by lease.

What differences World War II plant expansion may make in postwar property expenditures cannot be foreseen, but they are almost sure to be relatively large, as they were in the first postwar period, because of heavy reconversion and replacement outlays. Property expansion in trade during World War II has probably been more severely curtailed than during World War I.

With the wartime increase in consumer incomes, retail and wholesale trade lines have prospered in terms of sales during World War II, as they did in World War I. But although the growth of trade inventory was stimulated in both war expansions, in World War II the sharp curtailment of production of civilian supplies has abruptly checked the increase in trade inventory and has resulted in depletion of accumulated stocks in spite of the imposition of a general price ceiling, and the introduction of consumer rationing. Thus while trade concerns generally were well stocked in November 1918, the shelves and warehouses of many such enterprises may be almost empty at the end of World War II. As for manufacturing industry, durable and non-durable goods producers appear to have increased their dollar inventory at approximately the same rate during World War I, but during the present war the rate of inventory growth of durable goods producers has greatly exceeded that of non-durable goods manufacturers.

Throughout World War I the risks of current inventory accumulation were to a large extent a primary responsibility of private enterprise, though in war production there were contract cancellation clauses that provided compensation for the purchase of materials needed in filling orders for war supplies. During World War II, on the other hand, special public financing agencies, mainly subsidiaries of the RFC, have undertaken to share in risks attendant on inventory accumulation for war output: by agreeing to purchase inventories for prospective war contractors, whether prime or sub-contractors, in advance of visible sales to public agencies; and also

by direct acquisition of inventory of strategic supplies, holding and selling it as needed. In addition, these agencies have undertaken to finance inventory immobilized by rationing or other restrictions or have committed themselves to purchase it. No estimate of the total World War II participation by public agencies in the risks of inventory accumulation is possible, but fragmentary information indicates that in manufacturing alone it may have amounted to as much as a fifth of total inventory by the beginning of 1943.

In World War I, manufacturing and trade companies commonly valued inventory by methods that approximated the first-in, first-out ("fiffo") principle, which operated in a period of rising prices to inflate book profits, and in a period of falling prices to accentuate book losses. Realization of this fact led a few manufacturing concerns to introduce, during the '20s, the last-in, first-out ("liffo") method of inventory valuation, which moderates the effects on profits of rapid changes in inventory values. The price deflation of the '30s increased the use of this method of inventory pricing in manufacturing, and the outbreak of World War II greatly accelerated its application, especially among large concerns.⁹ A number of trade concerns, while precluded by their inventory control methods from a strict application of the last-in, first-out method of inventory pricing, have sought to obtain comparable results by adjusting their closing inventory on the basis of a retail price index to a value approximating "normal or average" cost.¹⁰

During World War I the financing of working capital requirements of manufacturing and trade was chiefly by private enterprise itself, through short-term credits from banks and trade sources. In World War II these sources have again been important, but trade credit and deferred tax payments, that is, tax accruals, have played a larger role than in the last war period. Whereas total loans and discounts of all banks increased 39 percent over the first three years

⁹ "It is interesting to note the increasing use of the last-in, first-out method. With generally increasing prices of materials, more and more people object to showing profits and paying taxes on what, under the first-in, first-out method, is merely an increase in the price level for the same inventory quantities and not a real profit." C. Olive Wellington, "Financial Statements in Wartime," *Journal of Accountancy* (July 1943) p. 57.

¹⁰ See the *New York Sunday Times*, June 27, 1943, Section 3, p. 6, in which close to 100 retail concerns are credited with applying this method in filing their income tax returns for 1941-42.

World War I, they decreased by 7 percent over the equivalent period of World War II. Commercial and industrial loans have risen, as in the first war, but thus far they have been quite a small factor in the total wartime inflation of bank credit.

Cash balances of medium and small business concerns in manufacturing and trade increased about in proportion to demand deposits of banks during the war years 1915-18, while those of large corporations increased somewhat more rapidly. In the early stages

of World War II, cash balances of business concerns of all sizes grew in rough proportion to demand deposits, but after late 1942 they increased at a substantially greater rate.¹¹ This reflects an increased need for cash to meet the greatly expanded volume of war-time disbursements; it also reflects, in many cases, the liquidation of inventory and receivables, the postponement of maintenance and replacement expenditures, the accumulation of reserve funds, the accrual of tax liabilities, and the failure to reinvest retained earnings in other assets. The fact that the cash balance gains of manufacturing and trade enterprise during 1915-18 were not lost in the immediate postwar years may have prophetic significance.

Progress payments and, in some industries, advances on war contracts helped to meet working capital needs in World War I. The broader scale of World War II, and the greater number of prime and subcontractors, have magnified the problem of providing working capital aid to war production industries. To expedite the financing of subcontractors, and to alleviate the dependence of prime contractors upon contract advances and progress payments, commercial banks have been guaranteed since May 1942 by the Army, the Navy and the Maritime Commission against losses on loans to war contractors arising out of the cancellation of war contracts. Advances outstanding under loan agreements, guaranteed through the Reserve Banks as agents (under Regulation V of the Board of Governors of the Federal Reserve System), amounted to about one-tenth of total commercial and industrial loans of all insured banks by the middle of 1943, and total loans authorized exceeded one-third of total commercial and industrial loans outstanding. To

See the results of the survey by the Federal Reserve System, "Ownership of Bank Deposits," *Federal Reserve Bulletin* (October 1943) pp. 917-22; also C. R. Whittlesey, *The Effect of War on Currency and Deposits*, National Bureau of Economic Research, Financial Research Program, Occasional Paper 11 (1943) pp. 20-24.

help meet the special financing needs of small business concerns engaged in producing war materials or essential civilian goods, the Smaller War Plants Corporation instituted in November, 1943, a repurchase plan for bank loans up to \$25,000 extended to small-scale producers. Restrictions on consumer credit, and limitations on inventory accumulation as a result of rationing, have operated to hold down the expansion of working capital in trade, and hence have checked demands for short-term bank credit in this field.

Complete information on the total amounts that were involved in contract cancellations at end of World War I is not available, but it has been estimated that war agencies terminated approximately 32,000 separate contracts, with an aggregate uncompleted value of about \$5 billion.¹² In the neighborhood of 7,000 contracts remained unsettled one year after termination, of which about 8,000 contracts were ultimately adjudicated through the United States Court of Claims at an average time expenditure of three and one-half years. On the basis of the production program of World War I, it is estimated that the end of hostilities will witness cancellations in excess of a hundred thousand contracts, having an uncompleted value anywhere from \$60 to \$75 billion, and involving inventory on hand of from \$10 to \$15 billion.¹³ Sheer number of contracts and the magnitude of sums involved makes the problem of contract termination after World War II vastly more complicated than after World War I. Many manufacturing companies, prime and subcontractors, face the possibility of having to finance postwar reconversion from working capital, whose liquidity is dependent upon the fair and speedy settlement of war contracts when canceled at the close of hostilities.¹⁴

¹² Report of the Research Committee, Committee for Economic Development, *Postwar Employment and the Settlement of Terminated War Contracts* (October 1943); J. Donald Edwards, *Termination of Ordnance Contracts, 1918*, U. S. Bureau of Labor Statistics, Historical Study No. 57 (January 1943); and Lieut. Col. Harold Shepherd, *Settlement of War Contracts*, Army Ordnance Report No. 2, Army Ordnance Association (August 9, 1943).

¹³ Report of the Research Committee, Committee for Economic Development, *op. cit.*; also M. R. Gainsbrugh and M. N. Struever, "Cancellation of War Contracts, World War I," National Industrial Conference Board, Inc., *The Conference Board Economic Record* (March 1943) pp. 55-59; and "The Settlement of War Contracts," *National City Bank Letter* (March 1943) pp. 29-32.

¹⁴ The standard contract termination clause used by the War Department is discussed in Shepherd, *op. cit.*

The war finance mechanism of World War I made no advance provision for the impact of war contract termination; the World War II situation in this respect is strikingly different. To the extent that war contract inventory is covered by government purchase commitments, the threat of partial freezing of corporate working capital during contract settlement is lessened. Moreover, where working capital needs for war contracts have been financed with the aid of Regulation V loans, there are provisions for the automatic extension of outstanding advances, upon cancellation of contracts, and for relief from interest and principal repayments until settlement of contracts.¹⁵ Finally, new regulations have been issued for VT loans, called VT loans, under which guaranteed credits may be extended with the object of freeing business working capital in the event of war contract termination in response to swiftly changing war requirements, subject like Regulation V loans to the same automatic relief from interest and principal repayments until settlement of canceled war contracts.¹⁶ While Regulation V and VT loans protect war contractors against the necessity of liquidating current debt suddenly, and thus assure maintenance of postwar working capital positions, there are some who feel that the contract termination problem cannot be fully met in this way, and that some new mechanism for settling war contracts quickly and equitably must be provided.¹⁷

Maintenance expenditures have necessarily been postponed by priorities and material shortages, and this deferment has tended, especially in non-war enterprises, to inflate corporate profits subject to taxes — regardless of any impairment of the productivity of physical plant that may affect the profitability of operations in the postwar period. Material shortages were less stringent during World War I, and thus profit inflation arising from postponed maintenance

The relation of Regulation V loans to contract cancellation is clearly shown in Roy A. Foulke, "Let's Tackle the First Post-War Problem Now," *Dun's Review* (May 1943) pp. 7 ff.

Effective September 1, 1943; see the *Federal Reserve Bulletin* (September 1943) p. 849-50.

Report of the Research Committee, Committee for Economic Development, *op. cit.*, in which special legislation is recommended to create a contract settlement board with broad powers, to provide "loans" on unsettled contracts awaiting verification of claims, to establish a uniform formula for contract settlement, and to provide for expansion of legal machinery to expedite appeals of dissatisfied contractors.

nance expenditures was probably a less important factor at the time in the financial experience of manufacturing and trade.

With regard to the taxation of corporate income in the two war periods, several factors are noteworthy:

First, the over-all tax burden was considerably lighter in the first war than at the present time — 45 percent of net income in 1918, the year of heaviest taxes, as compared with a maximum effective tax rate of 80 percent under the Revenue Act of 1942. Not only is the total amount of the tax substantially larger at present, but also the structure of corporate income taxes is different: in 1918 there was a 12 percent normal tax, no surtax, and an 80 percent war and excess profits tax; under the tax law of 1942 the combined normal and surtax is 40 percent and the excess profits tax 90 percent. This difference in the structure of tax rates means that a smaller component of the total annual tax assessment is considered an abnormal wartime levy, while a larger component is regarded as a normal, continuing charge against annual earnings. Business expectations as to possible postwar reductions in corporate taxes must take this fact into account.

Second, as an incentive to expansion of industrial capacity, corporations in World War I were allowed to accelerate depreciation on specially constructed war plant and facilities. However, the amount of accelerated depreciation was left to be determined under normal peacetime conditions, so that tax relief was only realized in the early '20s when economic obsolescence could be established in conformity with tax laws. In World War II, concerns expanding plant and facilities under emergency conditions have been permitted to amortize costs of expansion over a 60-month period (or less, if the emergency ended sooner), provided these facilities have been certified as necessary for national defense or war purposes. Immediate tax relief by virtue of accelerated depreciation has thus been available currently on the basis of proper certification by the contracting government agency. The prospect that postwar tax rates may be lower has been the principal incentive for taking advantage of accelerated depreciation on privately constructed war

¹⁸ Effective June 10, 1940 through October 5, 1943. An illuminating account of the role of accelerated depreciation in World Wars I and II is given by E. Cary Brown and Gardner Patterson, "Accelerated Depreciation, A Neglected Chapter in War Taxation," *Quarterly Journal of Economics* (August 1943) pp. 630-45.

ants. Over \$5.5 billion worth of private investment in World War facilities has been certified for accelerated depreciation, against about \$700 million worth of facilities so amortized under World War I tax law.

Third, in view of the high level of taxes attained in World War II the government has assumed some responsibility for providing business with funds from which to meet postwar conversion and adjustment expenses. The Revenue Act of 1942 allows a postwar credit amounting to 10 percent of excess profits taxes, with a proviso that corporations retiring debt may under certain conditions avail themselves of this credit immediately.

Fourth, as a result of the carry-back provision applicable to net operating losses, a corporation whose deferred maintenance and re-adjustment expenditures are so large as to result in postwar operating losses is entitled to apply these losses against earnings of the two preceding years, and to claim a refund of taxes paid; in like manner may carry any remaining loss balance forward as an offset to succeeding years' profits. There is a similar provision with respect to unused excess profits tax credits, and a carry-forward provision applying to capital losses, both of which may be expected to influence postwar replacement and reconversion decisions. The contribution of these provisions may prove very great, but their efficacy remains to be tested.

In the period of World War I larger companies established reserves for possible postwar contingencies and future declines in the market value of inventory, but the amount of such reserves was in most cases relatively small. The experience of the last war, and the progress made by accountants in evaluating economic conditions, however, in the present war, led a much larger number of companies to set up such reserves and to make substantial allocations to them. The American Institute of Accountants took early recognition of the problem, and in January 1942 its committee on accounting procedure issued a bulletin recommending to corporate management and accountants the principles to be followed in accounting for special reserves arising out of the war.¹⁹ A recent survey, based on 1941 fiscal year-end reports of 429 large companies in 15 trade and manufacturing industry groups, reveals that about one-fifth of the American Institute of Accountants, *Accounting for Special Reserves Arising Out of War*, Accounting Research Bulletin No. 13 (January 1942).

companies had established contingency reserves of one type or other for such postwar purposes as: reconversion of plant and facilities; deferred maintenance and repairs; dismissal compensation and inventory revaluation.²⁰ Tabulations of corporate annual reports for 1942 show a considerable increase in the proportion of companies providing postwar reserves by charges against earned income or by earmarking other reserves. In contrast to World War I experience, the sums involved in such reserves were in most cases substantial.²¹

The likenesses and differences between financing tendencies in World Wars I and II, as observed at this stage of the second conflict, provoke conjecture regarding the future. It is clear that some of the differences arise from the larger scale of the present war effort, and that some of them grow out of the financial lessons learned during the first war and in the intervening years. It remains to be seen whether from now on the resemblances will increase or diminish. The war and postwar record of the World War I period, although not an infallible guide, is certainly suggestive of problems that must have to be met, and of experiences that may have to be avoided.

²⁰ The survey was conducted by the Research Department of the American Institute of Accountants. See *Journal of Accountancy* (August 1942) pp. 125-32, and (November 1943) pp. 391-408.

²¹ The question of postwar reserves is treated at some length in Mark S. Marshall, *Business Reserves for Postwar Survival*, National Planning Association, Planning Pamphlets Nos. 19-20 (April 1943).