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increase in the ratio of stocks to sales on all market levels in the last few months of the year, which suggests that the rise in inventory investment in the fourth quarter may have been unplanned. Perhaps a period of voluntary inventory disinvestment would have followed had the United States not entered the war in December.

## The Expansion of 1940–1941: Government Operations and Supply Bottlenecks

A federal deficit existed in 1940, but it was partially offset by a surplus on state and local government account.<sup>27</sup> The federal deficit grew more rapidly than the state and local surplus in 1941, so that the combined deficit increased sixfold. The quarterly figures (Table 4) demonstrate that the combined deficit did not become large until the last half, and particularly the last quarter, of 1941. Nonetheless, the growing deficit was adding to the inflationary pressure after the first quarter of the year, at the very time when prices began their rapid climb.

The mobilization effort of 1940–1941 would probably have promoted an increase in total spending even had federal expenditures been financed by noninflationary means. Part of the 25 per cent increase in real private investment during 1941 was the direct result of the mobilization program. Mobilization for war production required an expansion of industrial facilities, not only in the armament industries, but in basic industries as well; iron and steel, non-ferrous metals, and machine tools were the most important. About half the fixed capital outlay in manufacturing in 1941 was in arms

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17). The decline in sales may have been a reaction to forward buying by consumers, but there is no evidence of extensive forward buying; retail sales merely rose proportionally with personal income up to September.

<sup>27</sup> The figures, in billions of dollars, are as follows:

	1939	1940	1941	1942
Government deficit (+) or surplus (-)	+1.87	+0.55	+3.49	+31.16
Federal	+2.21	+1.41	+4.89	+32.95
State and local	-0.35	-0.86	-1.40	-1.79

Source: *National Income Supplement, 1951, Survey of Current Business*, Table 5.

TABLE 4

GROSS NATIONAL PRODUCT, GOVERNMENT RECEIPTS AND EXPENDITURES,  
AND GOVERNMENT SURPLUS OR DEFICIT, IN CURRENT PRICES,  
QUARTERLY, 1939-1942

(billions of dollars)

Year and Quarter (1)		Government Expenditures (2)	Government Receipts (3)	Government Deficit (+) or Surplus (-) (2-3) (4)	Gross National Product (5)	Ratio of Deficit (+) or Surplus (-) to GNP (per cent) (4 ÷ 5) (6)
1939	I	4.2	3.8	+0.4	21.6	+1.9
	II	4.4	3.7	+0.7	21.8	+3.2
	III	4.1	3.8	+0.3	22.9	+1.3
	IV	4.4	4.0	+0.4	25.0	+1.6
1940	I	4.4	4.4	0.0	24.0	0.0
	II	4.6	4.3	+0.3	24.3	+1.2
	III	4.4	4.4	0.0	25.0	0.0
	IV	5.0	4.8	+0.2	28.1	+0.7
1941	I	5.8	5.9	-0.1	27.7	-0.4
	II	6.5	6.2	+0.3	30.4	+1.0
	III	7.3	6.4	+0.9	32.1	+2.8
	IV	9.2	6.5	+2.7	36.2	+7.5
1942	I	10.7	8.8	+1.9	35.3	+5.4
	II	14.6	7.9	+6.7	38.5	+17.4
	III	18.1	8.1	+10.0	41.7	+24.0
	IV	20.6	8.0	+12.6	46.1	+27.3

Note: The annual totals of the quarterly figures in column 4 may differ from the values in footnote 27 because of rounding of the quarterly components of columns 2 and 3.

Source: *National Income Supplement, 1951, Survey of Current Business*. Government Expenditures is the sum of Government Purchases of Goods and Services (Table 42) and Government Transfer Payments, Net Interest Paid by Government, and Subsidies less Current Surplus of Government Enterprises (Table 46). Government Receipts is the sum of Personal Tax and Nontax Payments (Table 44), Corporate Profits Tax Liability (Table 40), and Indirect Business Tax and Nontax Liability and Contributions for Social Insurance (Table 46).

industries, one-fourth in basic industries, and one-fourth in civilian industries.<sup>28</sup> Although the largest part of the investment for defense was financed by government (about two-thirds of industrial

<sup>28</sup> *Survey of Current Business*, February 1942, p. 6.

construction, including nine-tenths of the armament plant, was on federal account in 1941),<sup>29</sup> some of it was privately financed. Again, part of the large increase in inventory investment during this period was in the form of materials and products which would eventually be purchased on government account.

Since part of the increased expenditures contingent on defense production supplemented rather than replaced other expenditures, total spending and hence disposable income increased. The growth of income induced additional consumer spending, which in turn encouraged inventory investment by consumer goods industries and the distributive trades. The previous discussion revealed no evidence of extensive speculative inventory accumulation by consumers or distributors. However, the vigorous rise in disposable income ensured a continuous growth in consumer demand even though personal saving absorbed a large and increasing fraction of the consumer's dollar. Given the inflationary impact of investment and government expenditures, a considerably higher saving ratio would have been required to produce a softening of consumer demand comparable to that which occurred in 1951.

Rigorous government controls were not used to moderate the pace of expansion until late in 1941. Stringent controls were neither desirable nor politically feasible during the first year of the mobilization. Nearly 15 per cent of the civilian labor force was unemployed in the second quarter of 1940, just before the defense expansion began. With so much slack in the economy, the increased spending which accompanied the rise in defense expenditures was all to the good, since it promoted an expansion of production and employment. Production grew much more rapidly than prices in the first half of the period. However, after the first few months of 1941, prices began to climb rapidly, notwithstanding the fact that 11 per cent of the civilian labor force was then seeking employment. Supply bottlenecks were beginning to develop in many sectors of the economy.

The ratio of unemployed to labor force probably gives a misleading impression of the volume of unutilized productive

<sup>29</sup> *Ibid.*, p. 37.

capacity in 1941. This ratio is not an index of unutilized capacity, although it is no doubt ordinarily true that when unemployment is large, surplus capacity exists in most sectors of the economy. Nonetheless, ten of a group of fifteen industries for which data are available operated at a higher percentage of capacity in 1941 than in 1929, while the percentages for most of the other five were only slightly lower (Table 5), despite the fact that 9 per cent of the civilian labor force was unemployed in 1941 and only 3 per cent in 1929.<sup>30</sup> At the least, these figures indicate that production was pressing heavily on capacity in some sectors of the economy in 1941. At the most, they suggest that the growth of the labor force may have exceeded the growth of plant and equipment in the economy during the depression decade, so that an unemployment ratio of 9 per cent in 1941 may not imply as much unused capacity as would have accompanied the same amount of unemployment in 1929.

It is a familiar proposition that supply bottlenecks may develop during any general expansion of economic activity before full employment is reached. The nature of defense mobilization is such that bottlenecks may easily develop while a large fraction of the labor force is still unemployed. Supplies of metals may prove inadequate at an early date, since metals are so necessary to the production of modern munitions. Perhaps more important in 1940-1941 was the fact that the United States had not maintained a sizable peacetime military establishment. Mobilization required large expenditures for military construction and for the establishment of facilities to produce munitions. The mobilization program thus called for the large-scale consumption of resources important in the production of durable commodities. In the first year or so of the expansion, defense production did not interfere with civilian production, but after mid-1941 the production of materials used in construction and in the manufacture of durable

<sup>30</sup> The data from which these unemployment percentages were computed are based on the 1940 labor-force concept. (The quarterly data previously used were based on the 1945 concept.) They were obtained from Frederick C. Mills, who developed annual series by a process of interpolation from the estimates for census years made by Clarence D. Long, who had adjusted the original census data for comparability.

TABLE 5

## CAPACITY AND PERCENTAGE OF CAPACITY UTILIZED, SELECTED INDUSTRIES, 1929 AND 1941

INDUSTRY	CAPACITY <sup>a</sup>		PERCENTAGE OF CAPACITY UTILIZED	
	1929	1941	1929	1941
1. Beehive coke	21.1	10.0	30.7	67.0
2. Byproduct coke	59.9	62.5	89.2	93.6
3. Pig iron	57.6	59.0	82.2	94.8
4. Steel ingots	72.2	86.4	87.5	95.9
5. Electrolytic copper	152.3	155.5	94.4	92.9
6. Portland cement	252.5	250.8	67.6	65.4
7. Petroleum refining	348.0	433.9	77.8	89.0
8. Paper	13.7	18.5	81.3	95.9
9. Wheat flour	201.5	177.4	57.2	59.8
10. Electric power	252.5	360.6	36.5	45.7
11. Black blasting powder	245.5	167.0	39.2	36.9
12. High explosives	525.9	608.0	65.1	77.3
13. Cotton spinning	96.1	100.6	103.6	111.1

<sup>a</sup> For units of capacity see notes below.

Source and notes: All capacity data have been centered on the middle of the year. Production for the year has been divided by capacity to yield the percentage of capacity utilized.

## Line

1. For 1929, E. G. Nourse and Associates, *America's Capacity to Produce*, Brookings Institution, 1934; for 1941, *Minerals Yearbook*, Bureau of Mines, 1949. Millions of tons.
2. *Ibid.* Millions of tons.
3. *Annual Statistical Report*, American Iron and Steel Institute, 1949. Millions of tons.
4. *Ibid.* Millions of tons.
5. For 1929, Nourse, *op. cit.*; for 1941, *Yearbook of the American Bureau of Metal Statistics*, 1945. Thousands of tons.
6. For 1929, Nourse, *op. cit.*; for 1941, *Minerals Yearbook*. Thousands of barrels.
7. *Ibid.* Thousands of barrels of crude run to stills per day.
8. *Statistics of the Paper Industry, 1951*, American Paper and Pulp Association. Millions of tons.
9. *Wheat Ground and Wheat Milling Products*, Bureau of the Census, various issues. Millions of barrels.
10. *Statistical Bulletin, 1951*, Edison Electric Institute. Billions of kilowatt hours. (Capacity in kilowatts multiplied by 8,760 hours in leap years and 8,784 hours in other years.)
11. *Production of Industrial Explosives, 1943*, Bureau of Mines, Technical Paper No. 665. Millions of pounds. (Production in pounds divided by utilization ratio.)
12. *Ibid.* Millions of pounds. (See preceding note.)
13. *Cotton Production and Distribution*, Bureau of the Census, 1943. Billions of spindle-hours on double-shift basis. (Spindle-hours run divided by activity ratio. The single-shift estimate for 1929 has been converted to the double-shift basis.)

goods could no longer expand fast enough to supply the combined public and private demand. Accordingly, direct controls were used to limit the output of many finished consumer goods and to curtail nonessential fixed investment in the last half of the year.

Despite the tight physical-supply situation in durable commodities, during 1941 the gains in the wholesale-price indexes of metals and metal products and of building materials were much smaller than those recorded by nondurable commodities (Table 6). In

TABLE 6  
 PERCENTAGE INCREASE OF WHOLESALE-PRICE  
 INDEXES DURING 1941  
 (1926 = 100)

<i>Commodity</i>	<i>Percentage Increase January–December 1941</i>
All commodities	15.8
Farm products	32.3
Foods	22.8
Building materials	8.2
Chemicals and drugs	16.2
Fuel and lighting materials	8.7
Hides and leather products	12.1
Textile products	22.1
Metals and metal products	5.7
House-furnishing goods	13.6
Miscellaneous	13.6

Source: *Survey of Current Business*, February 1942, Table 6.

part, this was a normal development—the prices of farm products ordinarily fluctuate more widely than those of industrial products over the business cycle. However, the structure of prices was also consciously altered by government policy. The Office of Price Administration sought the voluntary cooperation of producers in an effort to retard the advance of metal prices, while at the same time the government took steps to raise the prices of important farm products in an effort to encourage an expansion of output for export to the Allies and for consumption at home. A considerable number of foods and basic agricultural staples were directly

affected by the latter program.<sup>31</sup> The prices of farm products and of related foods and textiles recorded the largest gains of the year, under the combined influence of the increase in aggregate demand and of the special conditions created by war, including the government's farm-price policy.

In 1940–1941, then, the rise in spending for defense purposes promoted an expansion in total spending which was largely uncontrolled until late in 1941. Prices did not begin to rise sharply until the simultaneous expansion of government and private spending had taken up the slack in unutilized capacity that existed at the beginning of the expansion, but inflationary pressures were unabated thereafter. In these respects the expansion progressed as theory and the observation of peacetime expansions would suggest. The surprising developments of the Korean period appear all the more unusual when viewed against this background.

### **Postscript: War and Peace Cycles**

Broadly conceived, war is simply one of a number of external forces that may impinge on an economy and thereby modify the direction and pace of economic activity. The peculiar feature that distinguishes war from other external forces is the magnitude of the claim exerted by the state on the nation's resources. Once committed to mobilization, whether for defense or active warfare, the ordinary restraints on government spending must be brushed aside. An important new demand force is created, a force not constrained by income limitations or the need to estimate the potential profitability of economic decisions. This is the basic fact that gives war cycles their family resemblance and sets them apart from peace cycles. However, war cycles bear only a family resemblance—significant differences are observable in the economic developments associated with World War I, World War II, and the Korean War. The implications of those differences must be taken into account in any comparison of war and peace cycles.

<sup>31</sup> Among the commodities affected were hogs, evaporated milk, cheese, chickens and eggs, a number of vegetables, wheat, corn, cotton, tobacco, and rice. Cf. *Survey of Current Business*, February 1942, pp. 29–30.