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Wartime Prosperity? A Reassessment of the U.S. Economy in the 1940s

ROBERT HIGGS

Relying on standard measures of macroeconomic performance, historians and economists believe that “war prosperity” prevailed in the United States during World War II. This belief is ill-founded, because it does not recognize that the United States had a command economy during the war. From 1942 to 1946 some macroeconomic performance measures are statistically inaccurate; others are conceptually inappropriate. A better grounded interpretation is that during the war the economy was a huge arsenal in which the well-being of consumers deteriorated. After the war genuine prosperity returned for the first time since 1929.

“War prosperity is like the prosperity that an earthquake or a plague brings.”

—Ludwig von Mises¹

For nearly half a century historians and economists, almost without exception, have misinterpreted the performance of the U.S. economy in the 1940s. The reigning view has two aspects: one pertaining to the conceptualization and measurement of the economy’s performance; the other pertaining to the explanation of that performance in macroeconomic theory. The two are encapsulated in the title of a chapter in a leading textbook: “War Prosperity: The Keynesian Message Illustrated.”²

I shall challenge the consensus view. The accepted profile of the economy’s performance during the 1940s—peak prosperity from 1943 to 1945, followed by much worse performance from 1946 to 1949—is indefensible as a description of economic well-being. Further, the most widely accepted explanation of the events of the war years cannot withstand critical scrutiny. The prevailing misinterpretations of economic performance during the 1940s have arisen because historians and

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¹ Mises, *Nation, State, and Economy*, p. 154.

² Hughes, *American Economic History*, p. 493.

economists have failed to appreciate that the wartime economy, a command economy, cannot be readily compared with either the prewar or the postwar economy.

THE CONSENSUS

According to the orthodox account, the war got the economy out of the Depression. Evidence for the claim usually includes the great decline in the standard measure of the unemployment rate, the large increase in the standard measure of real GNP, and the slight increase in the standard measure of real personal consumption. The entire episode of apparent business-cycle expansion during the war years is understood by most writers as an obvious validation of the simple Keynesian model: enormous government spending, with huge budget deficits, spurred the military economy and produced multiplier effects on the civilian economy, the upshot being increased employment, real output, and consumption and decreased unemployment. Some analysts, recognizing the rapid increase of the money stock during the war, have blended Keynesian and monetarist explanations, treating them as complements. This consensus account, occasionally with minor qualifications or caveats, appears in the works of historians, economists, and other writers.³

EMPLOYMENT AND UNEMPLOYMENT

The standard measure of the unemployment rate (persons officially unemployed as a percent of civilian labor force) fell between 1940 and 1944 from 14.6 percent to 1.2 percent.⁴ Michael Darby's measure, which does not count those in "emergency government employment" as unemployed, fell from 9.5 percent to 1.2 percent.⁵ Either measure signals a virtual disappearance of unemployment during the war, but in the circumstances neither measure means what it is commonly taken to mean.

The buildup of the armed forces to more than 12 million persons by 1945 made an enormous decline of the unemployment rate inevitable. But the welfare significance of the decline is hardly the usual one. Of the 16 million persons who served in the armed forces at some time during the war, 10 million were conscripted, and many of those who volun-

³ *Ibid.*, pp. 493, 495, 504 (but compare the statement in Hughes, "Stagnation without 'Flation,'" pp. 154-55); Puth, *American Economic History*, pp. 521, 531-32; Stanley Lebergott, *The Americans*, pp. 472, 477; Niemi, *U.S. Economic History*, p. 390; Walton and Rockoff, *History of the American Economy*, pp. 520, 523-24, 535; Polenberg, *War and Society*, p. 36; Blum, *V Was For Victory*, pp. 90-91; Winkler, *Home Front*, pp. 19-23; Vatter, *The U.S. Economy*, pp. 14, 20; Melman, *The Permanent War Economy*, pp. 15, 16, 19; Stein, *Presidential Economics*, pp. 65-66; Offer, "War Economy," pp. 876-77; and Cowen, "Why Keynesianism Triumphed," pp. 525-26.

⁴ U.S. Council of Economic Advisers, *Annual Report*, p. 330.

⁵ Darby, "Three-and-a-Half Million," p. 8.

teered did so only to avoid the draft and the consequent likelihood of assignment to the infantry.⁶ The civilian labor force between 1940 and 1945 ranged from 54 to 56 million.⁷ Therefore, the 12 million serving in the armed forces during the last year of the war, most of them under duress, constituted about 18 percent of the total (civilian plus military) labor force, itself much enlarged during the war.

What actually happened is no mystery. In 1940, before the military mobilization, the unemployment rate (Darby concept) was 9.5 percent. During the war the government pulled the equivalent of 22 percent of the prewar labor force into the armed forces. Voilà, the unemployment rate dropped to a very low level. No one needs a macroeconomic model to understand this event. Given the facts of the draft, no plausible view of the economy is incompatible with the observed decline of the unemployment rate. Whether the government ran deficits or not, whether the money stock increased or not, massive military conscription was sure to decrease dramatically the rate of unemployment.⁸

Between 1940 and 1944 unemployment fell by either 7.45 million (official measure) or 4.62 million (Darby measure), while the armed forces increased by 10.87 million. Even if one views eliminating civilian unemployment as tantamount to producing prosperity, one must recognize that placing either 146 or 235 persons (depending on the unemployment concept used) in the armed forces to gain a reduction of 100 persons in civilian unemployment was a grotesque way to achieve prosperity, even if a job were a job.

But military "jobs" differed categorically. Often they entailed substantial risks of death, dismemberment, and other physical and psychological injuries. Military service yielded little pay under harsh conditions and, like it or not, lasted for the duration of the war. Sustained involvement in combat drove many men insane.⁹ Physical casualties included 405,399 dead and 670,846 wounded.¹⁰ To treat military jobs as commensurable with civilian jobs, as economists do in computing the tradeoffs between them, betrays a monumental obtuseness to their realities.

To see more clearly what happened to the labor force, one can examine the percentage of the total (civilian plus military) labor force occupied in what I call the labor force "residuum." This includes unemployed civilians, members of the armed forces, civilian employees

⁶ U.S. Bureau of the Census, *Historical Statistics*, p. 1140; and Higgs, *Crisis and Leviathan*, p. 202.

⁷ U.S. Council of Economic Advisers, *Annual Report*, p. 330.

⁸ For those who insist on a macroeconomic framework, the employment question can be considered with reference to the model estimated by Evans, "The Effects of General Price Controls." Evans concluded on pp. 960-61 that in an explanation of changes in civilian employment during the war years "emphasis . . . on conscription makes sense."

⁹ Fussell, *Wartime*; and Manchester, *Goodbye Darkness*.

¹⁰ U.S. Bureau of the Census, *Historical Statistics*, p. 1140.

TABLE 1
EMPLOYMENT AND UNEMPLOYMENT, FISCAL YEARS 1940–1949
(as percent of total [civilian plus military] labor force)

Fiscal Year	Nondefense Employment	Defense Employment	Civilian Unemployment (BLS concept)	Labor Force Residuum
1940	82.4	1.8	15.7	17.6
1941	79.4	8.5	12.0	20.6
1942	67.3	25.7	7.0	32.7
1943	57.6	39.4	3.0	42.4
1944	58.4	40.3	1.3	41.6
1945	59.5	39.2	1.3	40.5
1946	88.5	8.9	2.6	11.5
1947	90.9	5.3	3.8	9.1
1948	90.9	5.3	3.9	9.1
1949	88.4	5.2	6.4	11.6

Notes: Defense employment includes military personnel, civilian employees of the military, and employees of defense-related industries. The labor force residuum is 100 minus nondefense employment.

Source: Computed from data in U.S. Dept. of Defense, *National Defense Budget Estimates*, p. 126.

of the armed forces, and employees in the military supply industries. (See Table 1). This measure rose from 17.6 percent, almost all of it being unemployment, in fiscal year 1940 to more than 40 percent, almost all of it being war-related employment, during the fiscal years from 1943 to 1945, then dropped abruptly to about 10 percent during the fiscal years from 1946 to 1949. The extraordinarily high level of the labor force residuum during the war indicates that the “prosperous” condition of the labor force was spurious: official unemployment was virtually nonexistent, but four-tenths of the total labor force was not being used to produce consumer goods or capital capable of yielding consumer goods in the future. The sharp drop of the labor force residuum between fiscal years 1945 and 1946 marks the return of genuine prosperity.

REAL OUTPUT

To find out what happened to real output during World War II, historians usually reach for *Historical Statistics*, economists for the most recent issue of the Council of Economic Advisers’ *Annual Report*. As Table 2 shows, which source one chooses makes a big difference. Although the two series show roughly the same profile of real GNP during the 1940s, the latest Commerce Department version indicates, in index number form (1939 equals 100), a peak value of 192.7 in 1944, versus a peak value of 172.5 in 1944 in the series taken from *Historical Statistics*. Both series show a large drop in real GNP from 1945 to 1946: 12 percent in the older series, 19 percent in the newer. Another series, constructed by John Kendrick, moves similarly with the first two in the

TABLE 2
 REAL GROSS NATIONAL PRODUCT, 1939-1949
 (index numbers, 1939 = 100)

Year	Commerce		Kendrick	Kuznets			GNP*
	Estimate of 1975	Estimate of 1990		Wartime	Revised	Variant III	
1939	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1940	108.5	107.9	109.7	109.3	109.0	109.0	108.7
1941	125.9	126.9	128.7	125.9	121.8	121.7	119.4
1942	142.2	150.8	145.5	131.9	126.5	118.2	108.4
1943	161.0	178.1	160.6	148.6	132.5	117.6	102.2
1944	172.5	192.7	172.4		135.8	122.1	105.4
1945	169.6	189.1	171.3		139.4	125.6	114.3
1946	149.3	153.1	156.7		151.0	146.5	144.8
1947	148.0	148.9	153.4		154.5	148.0	147.3
1948	154.6	154.7	160.0		155.5	153.1	152.3
1949	154.8	154.8	156.9		152.6	148.5	147.5

Sources: Column 1 was computed from data in U.S. Bureau of the Census, *Historical Statistics*, p. 224 (series F-3); column 2 from data in U.S. Council of Economic Advisers, *Annual Report*, p. 296; column 3 from data in Kendrick, *Productivity Trends*, pp. 291-92 (national security variant); column 4 from data in Kuznets, *National Product in Wartime*, p. 89 (Variant a); column 5 from data in Kuznets, "Long-Term Changes," p. 40; and column 6 from data in Kuznets, *Capital*, p. 487. GNP* is equal to Kuznets's variant III minus gross war construction and durable munitions and was computed from data in Kendrick, *Productivity Trends*, pp. 291-92.

table but displays some discrepancies. Notably, from 1945 to 1946 Kendrick's estimate drops by just 9 percent. Analysts who employ these standard series, besides ignoring the discrepancies, seem generally unaware that the figures may be conceptually problematic.

By contrast, Simon Kuznets, a pioneer in national income accounting, expressed many concerns. In *National Product in Wartime* Kuznets noted that national income accountants must make definite assumptions about "the purpose, value, and scope of economic activity." He observed that "a major war magnifies these conceptual difficulties, raising questions concerning the ends economic activity is made to pursue" and "the distinction between intermediate and final products." Moreover, "war and peace type products . . . cannot be added into a national product total until the differences in the valuation due to differences in the institutional mechanisms that determine their respective market prices are corrected for." During the war Kuznets constructed several alternative series, one of which appears in Table 2, column 4. Its values for 1942 and 1943 are substantially lower than those in columns 1, 2, and 3, in part because Kuznets used preliminary nominal data as well as different deflators for expenditure on munitions.¹¹

After the war Kuznets refined his estimates, producing a series (Table 2, column 5) that differs substantially from the standard series "partly

¹¹ Kuznets, *National Product in Wartime*, pp. viii-ix. See also Mitchell, "Wartime 'Prosperity,'" p. 13.

because of the allowance for overpricing of certain types of war production, partly because of the exclusion of nondurable war output (essentially pay and subsistence of armed forces).” Contrasting his estimate and that of the Commerce Department, he found the latter “difficult to accept” because it made too little correction for actual inflation during the war years and did not deal satisfactorily with the decline in the relative prices of munitions during the war.¹² Kuznets’s refined estimates follow a completely different profile for the 1940s. Most notable is that whereas the Commerce Department’s latest estimate of real GNP drops precipitously in 1946 and remains at that low level for the rest of the decade, Kuznets’s estimate *increases* in 1946 by about 8 percent, then rises slightly higher during the next three years.

Kuznets might have made an even greater adjustment, deleting *all* war outlays. Although computing GNP in this way now seems highly unorthodox, a strong argument can be offered for it, and Kuznets considered it seriously.¹³ The crucial question: does war spending purchase a final good and hence belong in GNP, or an intermediate good and hence not belong?

In his studies of long-term economic growth, Kuznets always insisted on a “peacetime concept” of GNP. In this, government spending counts only if it pays for a flow of goods to consumers or a flow to capital formation. Military spending enters only to the extent that it finances additions to the military capital stock, the justification being that even though military durables and construction are used for military purposes, they represent capital that could be employed for nonmilitary purposes—a justification that seems far-fetched with regard to many forms of military capital.

Application of this approach in estimating real GNP during the 1940s yields the series that Kuznets designated Variant III (Table 2, column 6).¹⁴ This estimate reached a peak in 1941, stalled throughout the war period, then surged with the demobilization and reconversion. It jumped by nearly 17 percent between 1945 and 1946 and remained at the higher level for the rest of the decade. No wartime prosperity here.

Kuznets himself did not accept the Variant III concept as applicable to the war years.¹⁵ Beginning with *National Product in Wartime* and

¹² Kuznets, “Long-Term Changes,” pp. 39–40. The Commerce Department later admitted the validity of Kuznets’s criticism but failed to make the implied corrections. See U.S. Department of Commerce, *National Income*, p. 157. For detailed documentation of the falling relative prices of munitions during the war, see Miller, *Pricing*, pp. 203–11, 283–86; and U.S. War Production Board, *American Industry in War*, pp. 11, 21–22, 38–39.

¹³ Kuznets, “Government Product,” pp. 184–200, and *National Product in Wartime*, pp. 3–31.

¹⁴ Differences between Kuznets’s 1952 figures and the Variant III estimates reflect the incorporation of new data showing lower proportions of durables in military purchases during the war as well as a switch (justified by the need for continuity in a longer series) back to Commerce Department deflators. See Kuznets, *Capital*, pp. 470–71.

¹⁵ Although one might infer from his later discussion in *ibid.*, pp. 465–84, that he ultimately did.

continuing through elaborations in his contributions of the early 1950s, he maintained that although ordinarily one ought to count as part of national product only goods that either contribute immediately to consumer satisfaction or add to the stock of capital from which future flows of consumer goods can be derived, the situation changes during the “life and death struggle” of a great war. Then, one must temporarily recognize “success in war and preservation of a country’s social framework as a purpose at least equal in importance to welfare of individuals.” Kuznets insisted that this approach was justified only “during these extraordinary and necessarily brief intervals in the life of a body social. One must particularly beware of extending this viewpoint, justified by the necessarily temporary crises in the life of a nation, to the common run of public activities.”¹⁶ But when the Cold War developed and persisted, most economists took the position that military expenditures *always* perform the function that Kuznets viewed them as performing only during a war for national survival.¹⁷

Not everyone accepted the dominant view. Among the dissenters were William Nordhaus and James Tobin, who made numerous adjustments to the standard GNP concept to transform it into what they called a measure of economic welfare. They aimed to eliminate from GNP all “activities that are evidently not direct sources of utility themselves but are regrettably necessary inputs to activities that may yield utility”—in other words, “only instrumental.” Accordingly they deleted, among other things, all national defense spending. They did not consider military spending wasteful; they merely insisted that it purchases an intermediate good. It is a “necessary regrettable” expense.¹⁸

Earlier Kuznets had come close to adopting this position. He regarded warfare as “the central difficulty in distinguishing between final and intermediate output of government.” He found it “difficult to understand why the net product of the economy should include not only the flow of goods to ultimate consumers, but also the increased cost of government activities necessary to maintain the social fabric within which the flow is realized.” Still, Kuznets did not disavow his insistence on recognizing “two end purposes” in estimating real output during World War II.¹⁹

Kuznets’s own logic, however, required that he go all the way: maintenance expense remains maintenance expense, even though much

¹⁶ Kuznets, “Government Product,” pp. 184–85.

¹⁷ Kendrick, *Productivity Trends*, p. 236; and Abramovitz’s comment in National Bureau of Economic Research, *Economic Growth*, p. 86.

¹⁸ Nordhaus and Tobin, “Is Growth Obsolete?” pp. 7–8, 26–28.

¹⁹ Kuznets, “Government Product,” pp. 193–94. Again, his discussion in *Capital*, pp. 465–84, may be read as an implicit disavowal. There he no longer defended or even mentioned the “two end purposes” argument. Referring to a comparison of his approach and the Commerce Department’s approach to treating military spending *for a period that includes World War II*, he said (p. 471) that “one errs less” by using his approach, that is, the “peacetime concept” of national product.

more maintenance is required when the weather is stormy than when it is placid. As Kuznets himself said, “there is little sense in talking of protection of life and limb [against external enemies] as an economic service to individuals—it is a pre-condition of such service, not a service in itself.”²⁰

When one adopts this position on the treatment of military outlays, that is, when one deducts all of them from GNP on the grounds that they purchase (at best) intermediate rather than final goods, one arrives at a starkly different understanding of economic performance in the 1940s. Constructing an index purged of all military spending, one obtains the measure designated here as GNP* (Table 2, column 7). Like Variant III, GNP* shows a peak in 1941 followed by a U-shaped profile during the war years with a trough in 1943. However, the U is much deeper in GNP*, with real output in 1943 more than 14 percent below its value in 1941. Moreover, while Variant III exceeded its 1941 value by 1945, GNP* did not. Between 1945 and 1946 GNP* surged upward by almost 27 percent, versus less than 17 percent for Variant III. From 1946 to 1949, with military spending at a much lower level, the two indexes were virtually identical.²¹

Finally, one can make an even more unorthodox—which is not to say incorrect—argument for rejecting the conventional wisdom. One can simply argue that outside a more or less competitive equilibrium framework, the use of prices as weights in an aggregation of physical quantities loses its essential theoretical justification. All presumption that price equals marginal cost vanishes, and therefore no meaningful estimate of real national product is possible.²²

In fact, price was “never a factor” in the allocation of resources for war purposes. The authorities did not permit “the price-cost relationship . . . to determine either the level of output or the distribution of the final product to individual uses.”²³ Clearly, all presumption of equalities between prevailing prices, consumers’ marginal rates of substitution, and producers’ marginal rates of technical substitution vanished. Ab-

²⁰ Kuznets, “Government Product,” pp. 193–94.

²¹ Even if one accepts GNP* conceptually, one might object that my estimate of it makes too large a deduction. Some of the military durable equipment and construction purchased during the war was used after the war for the production of civilian as well as military outputs. To delete all military spending gives rise to the error exposed by Gordon, “\$45 Billion.” If one could make a correction completely consistent with the spirit of the argument, one would arrive at an estimate somewhere between Variant III and GNP*, the exact location being determined by the distinction between military capital potentially capable of augmenting civilian output and military capital lacking this capability. Data on war durables purchases are insufficient to allow the separation to be made with precision.

²² Abramovitz, “The Welfare Interpretation”; and Vedder and Gallaway, “The Great Depression of 1946,” pp. 10–11.

²³ Novick et al., *Wartime Production Controls*, pp. 16–18. This is not to say that prices played no role; much of the planning had to do with the manipulation of prices. But *market-determined* prices and costs were never permitted to play a fundamental role. See Miller, *Pricing*, pp. 97–110.

sent those equalities, at least as approximations, national income accounting loses its moorings; it necessarily becomes more or less arbitrary.

Some economists appreciated the perils at the time. Noting that the government had displaced the price system, Wesley Mitchell observed that comparisons of the war and prewar economies, even comparisons between successive years, had become "highly dubious." Index number problems lurked around every corner. Much output during the war, especially the weapons, consisted of goods that did not exist before the war. Even for physically comparable goods, price structures and output mixes changed radically. Production of many important consumer goods was outlawed. Surrounding everything were the "obvious uncertainties concerning [price] quotations in a land of price controls and evasions."²⁴ Kuznets declared that the "bases of valuation for the war and nonwar sectors of the economy are inherently noncomparable It is impossible to construct directly a price index of war products that would span both prewar and war years." Kuznets's own efforts to overcome these problems never escaped from arbitrariness, as he himself admitted.²⁵

It will not do to maintain, as some economists have, that although the standard indexes of real GNP are deficient from a welfare standpoint, they can serve as indexes of production or resource consumption. Economics is not a science of hammers and nails, of production or consumption in the raw; it is a science of choice, and therefore of values. Valuation is inherent in all national income accounting. In a command economy the fundamental accounting difficulty is that the authorities suppress and replace the only genuinely meaningful manifestation of people's valuations, namely, free market prices.²⁶

REAL CONSUMPTION

Most writers insist that real personal consumption increased during the war. In Seymour Melman's flamboyant but otherwise representative portrayal, "the economy [was] producing more guns *and* more butter Americans had never had it so good."²⁷

This belief rests on a weak foundation. It fails to take sufficiently into account the understatement of actual wartime inflation by the official price indexes, the deterioration of quality and disappearance from the

²⁴ Mitchell, "Wartime 'Prosperity,'" pp. 7, 13. For documentation of the extent of evasions of the price controls, see Clinard, *The Black Market*, pp. 28-50.

²⁵ Kuznets, *National Product in Wartime*, pp. 38-41. Sixteen years later, having changed his approach in several respects, Kuznets was still apologetic: "These changes in the treatment of durable military output may seem arbitrary, and there is no denying a large element of personal judgment in the procedures" (*Capital*, p. 471).

²⁶ Buchanan, "General Implications of Subjectivism," p. 86.

²⁷ Melman, *The Permanent War Economy*, p. 15.

TABLE 3
 REAL PERSONAL CONSUMPTION EXPENDITURES, 1939-1949
 (index numbers, 1939 = 100)

Year	Commerce 1975	Commerce 1990	Kendrick	Kuznets
1939	100.0	100.0	100.0	100.0
1940	105.1	104.6	105.4	105.4
1941	111.6	110.5	112.2	112.5
1942	108.9	109.8	110.2	110.6
1943	111.9	112.4	113.3	113.6
1944	115.7	115.9	117.8	117.5
1945	123.5	123.4	126.4	125.4
1946	137.3	136.3	140.7	140.6
1947	139.2	138.7	142.7	143.6
1948	142.2	141.9	145.6	146.6
1949	146.1	144.7	149.6	150.2

Sources: Column 1 was computed from data in U.S. Bureau of the Census, *Historical Statistics*, p. 229 (series F-48); column 2 from data in U.S. Council of Economic Advisers, *Annual Report*, p. 296; column 3 from data in Kendrick, *Productivity Trends*, p. 295; and column 4 from data in Kuznets, *Capital*, p. 487.

market of many consumer goods, the full effects of the nonprice rationing of many widely consumed items, and the additional transactions costs borne and other sacrifices made by consumers to get the goods that were available. When one corrects the data to provide a more defensible measure of what happened to real consumer well-being during the war, one finds that it declined.

Table 3 shows the standard series on real personal consumption expenditure during the 1940s. They do not differ much. The similarity is hardly surprising, as all rest on nearly the same conceptual and statistical bases. These figures have led historians and economists to conclude that the well-being of consumers improved, though not by much, during the war.

Even if one stays within the confines of the standard series, the conclusion is shaky. Notice, for example, that the data indicate that consumption in 1943 hardly differed from consumption in 1941. The change between 1941 and 1944 varies from 3.7 percent to 5.0 percent, depending on the series considered. But the population was growing at a rate of more than 1 percent per year, so the official data imply that real personal consumption per capita remained essentially unchanged between 1941 and 1944. Merely to maintain the level of 1941, a year in which the economy had yet to recover fully from the Depression, hardly signified "wartime prosperity."²⁸

²⁸ In a personal communication Professor Vatter has noted that the *civilian* population actually fell between 1941 and 1944 by nearly five million, and hence consumption per civilian rose more rapidly than the per capita data indicate. The point is well taken but somewhat unsettling. It suggests a civilian population enhancing its well-being by forcing millions of men into military

The more serious problem, however, is that the standard real consumption series are quotients fatally flawed by their deflators. Everyone who has looked closely at the official price indexes recognizes that they understate the actual inflation during the war and—an important point usually overlooked—overstate the actual inflation during the immediate postwar period. But investigators have not agreed on exactly how the actual price level moved or the proper technique for finding out.

During the war a committee headed by Wesley Mitchell investigated how far the official consumer price index had fallen short of the true price level, but the committee neither attempted to adjust nor succeeded in correcting for all the factors creating the discrepancy. In 1978 Hugh Rockoff made additional adjustments, concluding that the official consumer price index understated the true price level by 4.8 to 7.3 percent in June 1946, just before the price controls lapsed.²⁹ Rockoff's adjustments remained incomplete, as he recognized. He commented that "if anything, the errors were larger than" the estimates indicated. Moreover, "evasion and black markets were probably more severe outside the group of commodities that were covered by the consumer price index."³⁰

More recently, Rockoff and Geoffrey Mills, using a different (macroeconomic) approach, have estimated an alternative deflator for NNP during the war. This shows that the official deflator understated the price level by 2.3 percent in 1943 (the first year that the price controls had a significant effect), 4.9 percent in 1944, 4.8 percent in 1945, and 1.6 percent in 1946.³¹ These discrepancies seem too small to be credible. By comparison, Kuznets's alternative (GNP) deflator, published in 1952, differed from the official deflator for the corresponding years by 11.1 percent, 13.4 percent, 11.4 percent, and 2.2 percent, respectively.³²

Perhaps the most credible alternative deflator has been produced by Milton Friedman and Anna Schwartz. They found the official deflator for NNP to be understated by 3.7 percent in 1943, 7.7 percent in 1944, 8.9 percent in 1945, and 3.3 percent in 1946.³³ Their deflator is for NNP,

service, where civilian goods became wholly irrelevant to them while their more fortunate fellows enjoyed those goods exclusively. The more fundamental problem, however, is that the numerator (*total* real consumption) is overstated.

²⁹ Rockoff, "Indirect Price Increases," p. 417. For a recent analysis of the wartime consumer price controls, see Rockoff, *Drastic Measures*, pp. 85–176. The official history is summarized in Mansfield and Associates, *A Short History of OPA*. See also Friedman and Schwartz, *A Monetary History*, pp. 557–58; and Anderson, *Economics and the Public Welfare*, pp. 545–46.

³⁰ Rockoff, *Drastic Measures*, pp. 169, 171.

³¹ Mills and Rockoff, "Compliance with Price Controls," p. 203.

³² Calculated from data in Kuznets, "Long-Term Changes," p. 40. Barro, in "Unanticipated Money," p. 572, has obtained econometric results suggesting that all the genuine inflation occurred during the war years, none of it during the immediate postwar years, and 1946 actually witnessed deflation.

³³ Friedman and Schwartz, *Monetary Trends*, p. 107. Using a different macroeconomic procedure, Vedder and Gallaway, in "The Great Depression of 1946," pp. 6–7, 33, estimated a GNP

TABLE 4
ALTERNATIVE ESTIMATE OF REAL PERSONAL CONSUMPTION PER CAPITA
(index numbers, 1939 = 100)

Year	Personal Consumption Per Capita (current dollars)	Friedman and Schwartz's Deflator	Real Personal Consumption Per Capita
1939	100.0	100.0	100.0
1940	105.3	101.1	104.2
1941	118.6	109.1	108.7
1942	128.6	123.4	104.2
1943	142.3	139.6	101.9
1944	153.0	150.0	102.0
1945	167.3	156.6	106.8
1946	199.2	158.0	126.1
1947	219.8	170.8	128.7
1948	233.5	182.0	128.3
1949	233.9	179.6	130.2

Sources: Column 1 was computed from data in U.S. Council of Economic Advisers, *Annual Report*, p. 325; and column 2 from data in Friedman and Schwartz, *Monetary Trends*, p. 125. Column 3 is column 1 divided by column 2 and multiplied by 100.

not for just the consumption component of NNP. In using it as a deflator for consumption alone, one is taking a risk. It definitely moves in the right direction, however, as it implies larger adjustments than Rockoff's admittedly incomplete adjustments of the official consumer price index. Moreover, it is well established that munitions prices rose much less than the prices of civilian goods; hence, a deflator for official NNP, which includes munitions, most likely still understates the extent to which the prices of consumer goods rose during the war.

If one uses the Friedman-Schwartz price index to deflate personal consumption spending per capita, the results are as shown in Table 4, column 3. The pattern shown there diverges markedly from that shown by the standard data. According to the alternative estimate, real consumption per capita reached a prewar peak in 1941, nearly 9 percent above the 1939 level; it declined by more than 6 percent during 1941-1943 and rose during 1943-1945; still, even in 1945 it had not recovered to the level of 1941. In 1946, however, the index jumped by 18 percent, and it remained at about the same level for the rest of the decade.

In fact, conditions were much worse than the data suggest for consumers during the war. Even if the price index corrections considered above are sufficient, which is doubtful, one must recognize that consumers had to contend with other extraordinary welfare-diminishing changes during the war. To get the available goods, millions of people had to move, many of them long distances, to centers of war production.

deflator whose overall changes for the periods 1941-1945 and 1945-1948 are similar to the corresponding changes of the Friedman-Schwartz NNP deflator.

(Of course, costly movements to areas of greater opportunity always occur; but the rate of migration during the war was exceptional because of the abrupt changes in the location of employment opportunities.)³⁴ After bearing substantial costs of relocation, the migrants often found themselves crowded into poorer housing. Because of the disincentives created by rent controls, the housing got worse each year, as landlords reduced or eliminated maintenance and repairs. Transportation, even commuting to work, became difficult for many workers. No new cars were being produced; used cars were hard to come by because of rationing and were sold on the black market at elevated prices; gasoline and tires were rationed; public transportation was crowded and inconvenient for many, as well as frequently pre-empted by the military authorities. Shoppers bore substantial costs of searching for sellers willing to sell goods, including rationed goods, at controlled prices; they spent much valuable time arranging (illegal) trades of ration coupons or standing in queues. The government exhorted the public to “use it up, wear it out, make it do, or do without.” In thousands of ways, consumers lost their freedom of choice.³⁵

People were also working harder, longer, more inconveniently, and at greater physical risk in order to get the available goods. The ratio of civilian employment to population (aged 14 and over) increased from 47.6 percent in 1940 to 57.9 percent in 1944, as many teenagers left school, women left their homes, and older people left retirement to work.³⁶ The average work week in manufacturing, where most of the new jobs were, increased from 38.1 hours in 1940 to 45.2 hours in 1944; and the average work week increased in most other industries, too—in bituminous coal mining it increased by more than 50 percent.³⁷ Night shifts occupied a much larger proportion of the work force.³⁸ The rate of disabling injuries per hour worked in manufacturing rose by more than 30 percent between 1940 and its wartime peak in 1943.³⁹

It is difficult to understand how working harder, longer, more inconveniently and dangerously in return for a diminished flow of consumer goods comports with the description that “economically speaking, Americans had never had it so good.”

³⁴ Vatter, *The U.S. Economy*, pp. 114–15; Polenberg, *War and Society*, pp. 138–45; and U.S. War Production Board, *American Industry in War*, pp. 14, 16–17.

³⁵ On wartime living conditions, see Rockoff, *Drastic Measures*, pp. 85–176; Novick et al., *Wartime Production Controls*, pp. 18, 302; Fussell, *Wartime*, pp. 195–98; Polenberg, *War and Society*, pp. 5–37, 131–53; Blum, *Was For Victory*, pp. 92–105; Winkler, *Home Front*, pp. 24–47; Schweitzer, “World War II,” pp. 91–93; and Brinkley, *Washington Goes To War*.

³⁶ U.S. Council of Economic Advisers, *Annual Report*, p. 330; and Schweitzer, “World War II,” pp. 89–95.

³⁷ U.S. Bureau of the Census, *Historical Statistics*, pp. 169–73; and Anderson, *Economics and the Public Welfare*, p. 515.

³⁸ U.S. War Production Board, *American Industry in War*, pp. 7, 32.

³⁹ U.S. Bureau of the Census, *Historical Statistics*, p. 182.

IRRELEVANT MACRO MODELS

None of the standard macroeconomic theories employed to account for the wartime experience provides an acceptable explanation. The models cannot do the job because they do not pertain to a command economy, and the United States between 1942 and 1945 had a command economy. Regardless of the peculiarities of their assumptions, all standard macro models presume the existence of functioning *markets* for commodities, factor services, and bonds.

The assumption fails even to approximate the conditions that prevailed during the war. Commodity markets were pervasively subject to controls: price controls, rationing, and in some cases outright prohibition in the consumer goods markets; and price controls, prohibitions, priorities, conservation and limitation orders, quotas, set-asides, scheduling, allocations, and other restrictions in the markets for raw materials, components, and capital equipment.⁴⁰ While taxes were raised enormously, many forms of production received subsidies so the price controls would not drive suppliers from the market.⁴¹ Factor markets were no freer, and in some respects (such as conscription) were much less free.⁴² Credit markets came under total control, as the Federal Reserve undertook to reduce and allocate consumer credit and pegged the nominal interest rate on government bonds at a barely positive level.⁴³ Two-thirds of the investment in manufacturing plants and equipment from July 1940 through June 1945 was financed by the government, and most of the remainder came forth in response to tax concessions and other *de facto* subsidies authorized in 1940 to stimulate the rearmament.⁴⁴

In sum, the economy during the war was the exact opposite of a free market system. Every part of it was either directly controlled by the authorities or subject to drastic distortion by virtue of its relations with suppliers and customers who were tightly controlled.⁴⁵ To suppose that the economy allocated resources in response to prices set by the unhampered interplay of demands and supplies in the markets for commodities, factor services, and loanable funds is to suppose a

⁴⁰ On the wartime controls, see the recent analyses of Vatter, *The U.S. Economy; Drastic Measures*, pp. 85–176; and Higgs, *Crisis and Leviathan*, pp. 196–236. Contemporary official and firsthand accounts include Novick et al., *Wartime Production Controls*; Harris, *Price and Related Controls*; Catton, *The War Lords of Washington*; Janeway, *The Struggle for Survival*; Nelson, *Arsenal of Democracy*; Smith, *The Army and Economic Mobilization*; U.S. Bureau of the Budget, *The United States at War*; U.S. Civilian Production Administration, *Industrial Mobilization for War*; and U.S. War Production Board, *American Industry in War*.

⁴¹ Mansfield and Associates, *A Short History of OPA*, pp. 63–65; and Harris, *Price and Related Controls*, pp. 223–46

⁴² Krug, *Production*, p. 5; and sources cited in fn. 40 above.

⁴³ Friedman and Schwartz, *A Monetary History*, pp. 553, 555, 561–74.

⁴⁴ Higgs, "Private Profit, Public Risk"; and Gordon, "\$45 Billion."

⁴⁵ Novick et al., *Wartime Production Controls*, p. 7.

complete fiction. Clearly, the assumptions that undergird standard macro models do not correspond with the empirical reality of the wartime economy.

SO WHAT *DID* HAPPEN?

As the 1940s began, the economy, although substantially affected by various government intrusions, remained one in which resource allocation for the most part reflected the operation of the price system. It was far from classic capitalism but also far from a command economy. Beginning in the fall of 1940, proceeding slowly until the attack on Pearl Harbor and then very rapidly, the government imposed such pervasive and sufficiently effective controls that, by the beginning of 1943, the economy became a thoroughgoing command system. This regime persisted until the fall of 1945, when the controls began to come off rapidly. Although some persisted, the overwhelming mass of them had been removed by 1947. In the late 1940s the economy was once again broadly market-oriented, albeit far from pure capitalism. So, within a single decade the economy had moved from being mainly market-directed to being nearly under the complete control of central planners to being mainly market-directed again. When one views any economic measure spanning the decade, one must keep this full revolution of the institutional framework in mind, because the meaning of such measures as the unemployment rate, GNP, and the consumer price index depends on the institutional setting to which they relate.

In 1940 and 1941 the economy was recovering smartly from the Depression, but in the latter year the recovery was becoming ambiguous, as substantial resources were diverted to war production. From 1942 to 1944 war production increased rapidly. Although there is no defensible way to place a value on the outpouring of munitions, its physical dimensions are awesome. From mid-1940 to mid-1945 munitions makers produced 86,338 tanks; 297,000 airplanes; 17,400,000 rifles, carbines, and sidearms; 315,000 pieces of field artillery and mortars; 4,200,000 tons of artillery shells; 41,400,000,000 rounds of small arms ammunition; 64,500 landing vessels; 6,500 other navy ships; 5,400 cargo ships and transports; and vast amounts of other munitions.⁴⁶ Despite countless administrative mistakes, frustrations, and turf battles, the command economy worked.⁴⁷ But, as always, a

⁴⁶ Krug, *Production*, p. 11. See pp. 29–32 for a detailed statement of the physical quantities of various munitions produced during the war. For even greater detail, see Smith, *The Army and Economic Mobilization*, pp. 3–31.

⁴⁷ It was hardly a well-oiled machine. Novick and his colleagues made free use of such terms as “administrative chaos,” “administrative anarchy,” “chasm between plan and operation,” and “trial-and-error fumbling.” See *Wartime Production Controls*, pp. 110, 140, 219, 291, 394, 395, 400, 403. These well-informed insiders concluded (p. 9) that the successes of the wartime planned

command economy can be said to work only in the sense that it turns out what the authorities demand. The U.S. economy did so in quantities sufficient to overwhelm enemy forces.

Meanwhile, as shown above, real personal consumption declined. So did real private investment. From 1941 to 1943 real gross private domestic investment plunged by 64 percent; during the four years of the war it never rose above 55 percent of its 1941 level; only in 1946 did it reach a new high.⁴⁸ Notwithstanding the initial availability of much unemployed labor and capital, the mobilization became a classic case of guns displacing both butter and churns. So why, apart from historians and economists misled by inappropriate and inaccurate statistical constructs, did people—evidently almost everyone—think that prosperity had returned *during* the war?

The question has several answers. First, everybody with a desire to work was working. After more than 10 years of persistently high unemployment and the associated insecurities (even for those who were working), full employment relieved a lot of anxieties. Although economic well-being deteriorated after 1941, civilians were probably better off on the average during the war than they had been during the 1930s. Second, the national solidarity of the war effort, though decaying after the initial upsurge of December 7, 1941, helped to sustain the spirits of many who otherwise would have been angry about the shortages and other inconveniences. For some people the wartime experience was exhilarating even though, like many adventures, it entailed hardships. Third, some individuals (for instance, many of the black migrants from the rural South who found employment in northern and western industry) were better off, although the average person was not. Wartime reduction of the variance in personal income—and hence in personal consumption—along with rationing and price controls, meant that many people at the bottom of the consumption distribution could improve their absolute position despite a reduction of the mean.⁴⁹ Fourth, even if people could not buy many of the things they wanted at the time, they were earning unprecedented amounts of money. Perhaps money illusion, fostered by price controls, made the earnings look bigger than they really were. In any event, people were building up bank accounts and bond holdings; while actually living worse than before, they were feeling wealthier.

Which brings us to what may be the most important factor of all: the performance of the war economy, despite its command-and-control character, broke the back of the pessimistic expectations almost every-

economy were “less a testimony to the effectiveness with which we mobilized our resources than they are to the tremendous economic wealth which this nation possessed.”

⁴⁸ U.S. Council of Economic Advisers, *Annual Report*, p. 296.

⁴⁹ Vatter, *The U.S. Economy*, pp. 142–44; and U.S. Bureau of the Census, *Historical Statistics*, pp. 301–2.

TABLE 5
STOCK PRICES AND CORPORATE PROFITS, 1939–1949

Year	Standard & Poor's Index of Common Stock Prices (1941–1943 = 10)	Market Value of Stocks on Registered Exchanges (billions of current dollars)	Corporate Profits ^a (billions of current dollars)
1939	12.06	11.426	4.0
1940	11.02	8.404	5.9
1941	9.82	6.240	6.7
1942	8.67	4.309	8.3
1943	11.50	9.024	9.9
1944	12.47	9.799	11.2
1945	15.16	16.226	9.0
1946	17.08	18.814	8.0
1947	15.17	11.587	11.7
1948	15.53	12.904	17.8
1949	15.23	10.740	17.8

^a After tax, with inventory valuation and capital consumption adjustments.

Sources: Columns 1 and 2 are from U.S. Bureau of the Census, *Historical Statistics*, pp. 1004, 1007; and column 3 is from U.S. Council of Economic Advisers, *Annual Report*, p. 395.

body had come to hold during the seemingly endless Depression. In the long decade of the 1930s, especially its latter half, many people had come to believe that the economic machine was irreparably broken. The frenetic activity of war production—never mind that it was just a lot of guns and ammunition—dispelled the hopelessness. People began to think: if we can produce all these planes, ships, and bombs, we can also turn out prodigious quantities of cars and refrigerators.⁵⁰

When the controls began to come off and the war ended more quickly than anticipated in 1945, consumers and producers launched eagerly into carrying out plans based on rosy forecasts and, by so doing, made their expectations a reality. Of course, the ability to draw on the accumulations of financial assets built up by “forced saving” during the war was important, especially in conjunction with the Federal Reserve’s continued support of bond prices. But the liquidation of those assets alone could not have turned the trick—if such tricks were possible, a government could produce prosperity simply by cranking the money presses.⁵¹

Probably the most solid evidence of expectations comes from the stock markets, where thousands of transactors risk their own wealth on the basis of their beliefs about future economic conditions. (See Table 5.) Evidently investors took a dim view of the prospect of a war

⁵⁰ Winkler, *Home Front*, pp. 2, 23–24, 96.

⁵¹ Compare the explanation of the economy’s performance just after the war in Vedder and Gallaway, “The Great Depression of 1946,” pp. 19–27. Their argument calls attention to, among other things, the huge swing in the federal government’s fiscal position, from massive deficit to substantial surplus, between 1945 and 1946–1947 (calendar years), hence “reverse crowding out.” See also some new ideas on how wartime events affected the operation of the postwar labor market, in Jensen, “The Causes and Cures,” pp. 581–82.

economy. After 1939, stock values dropped steadily and substantially; U.S. entry into the war in December 1941 did not arrest the decline. By 1942 the Standard & Poor's index had fallen by 28 percent, and the market value of all stocks on registered exchanges had plunged by 62 percent in nominal terms. (Adjustment for price level changes would make the declines even greater.) The declines occurred even though current corporate profits were rising steadily and substantially. In 1943, as the tide of war turned in favor of the Allies, the stock market rallied and small additional advances took place in 1944. Still, in 1944, with the war economy operating at its peak, the stock market's real value had yet to recover to its 1939 level.

By early 1945, almost everyone expected the war to end soon. The prospect of a peacetime economy electrified investors. Stock prices surged in 1945 and again in 1946. In just two years the Standard & Poor's index increased by 37 percent and the value of all shares on registered exchanges by 92 percent, despite a decline of current-dollar after-tax corporate profits from their peak in 1944. Did people expect the end of "wartime prosperity" to be economically deleterious? Obviously not.

To sum up, World War II got the economy out of the Great Depression, but not in the manner described by the orthodox story. The war *itself* did not get the economy out of the Depression. The war economy produced neither a "carnival of consumption" nor an investment boom, however successfully it overwhelmed the nation's enemies with bombs, shells, and bullets.⁵² But certain events of the war years—the buildup of financial wealth and especially the transformation of expectations—justify an interpretation that views the war as an event that recreated the possibility of genuine economic recovery. As the war ended, real prosperity returned.

⁵² The phrase "carnival of consumption" comes from Blum, *V Was For Victory*, p. 90.

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