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NEW LIGHT ON A STATISTICAL DARK AGE: U.S. REAL PRODUCT GROWTH BEFORE 1840*

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"... I would fain advance naught but substantiated facts. But after embattling his facts, an advocate who should wholly suppress a not unreasonable surmise, which might tell eloquently upon his cause—such an advocate, would he not be blameworthy?"—HERMAN MELVILLE

I

Prevailing scholarly opinion evinces disturbing symptoms of latent schizophrenia on the subject of economic growth in the antebellum United States. Virtually every student of the era now appears quite convinced that the long-term rate of growth of aggregate product per capita underwent a significant acceleration, "somewhere during the period between 1815 and 1860," as Douglass North [8, p. 75] recently phrased it. And, if many economic historians protest Walt Rostow's labeling the years following 1843 as the period of the U.S. "take-off" [11], most do not seem to balk at accepting the guess hazarded by Raymond Goldsmith [4, pp. 277-78]: "a fairly sharp break in the trend of real national product per head . . . occurred not very long before 1839," quite probably during the 1830's. To the uninitiated, it might seem obvious that everybody also subscribes to an explicit set of assertions about the secular rate of growth of per capita product during the period from, say, the founding of the nation to the date of the putative acceleration. Otherwise, how could all agree a significant alteration in the trend had occurred?

Yet, to find any expression of such a consensus on the rate at which per capita product had increased during the half-century following 1790 would be no mean task. Faced with the direct question, most writers draw back from specific statements, pointing to the unfortunate absence of reliable quantitative data describing the secular course of aggregate production during the decades before 1840. The present

* This paper presents some of the principal empirical findings and inferences arrived at in a study undertaken by the author in connection with the Stanford Research Project on Economic Growth in the United States. The helpful comments and suggestions of Moses Abramovitz, my colleague on that project, are gratefully acknowledged. Space limitations here prohibit supplying the appropriate documentation, explanations, and qualifications, contained in the considerably longer paper that forms the basis for this summary (and the discussants' comments). It is therefore necessary to caution readers to consult the full version, which will appear in the June, 1967, issue of the *J. of Econ. Hist.* under the title, "U.S. Real Product Growth Before 1840: New Evidence, Controlled Conjectures."

lack of satisfactory direct national product estimates, which properly induces such caution, has, somehow, not been allowed to interfere with the general conclusion that the secular pace of per capita product growth changed, becoming notably faster during the latter part of the 1790-1860 interval.

The problem of U.S. growth prior to 1840 has, curiously, come to be treated as a self-contained issue; it is usually split off for consideration in tones much less definite than those assumed in discussions of the (established?) acceleration that took place during the antebellum era. Did output grow faster than the population? How steady was the increase in output? It has been said that these two questions must be answered "if the years from 1800 to 1840 are to be understood as fully as later periods in American economic history" [10, p. 191]. But, can we really grasp the significance of developments observed after 1840 without having to provide those answers for the years before?

This is not to say hypotheses have not been advanced concerning the vexed question of U.S. growth during the 1800-40 interval. Speculation abounds. Indeed, the historiography of the pre-1840 economy, far from a barren field, begins to resemble nothing so much as a Confucian garden—or should one say a garden of confusion—where "a hundred flowers bloom . . . a thousand thoughts contend." These varieties spring up overnight in the space recently cleared by intensive critical examination of Robert F. Martin's [6] estimates of real national income. Martin's figures for the first half of the nineteenth century had real income growing more slowly than the U.S. population in each of the three decades prior to 1830, with per capita real product beginning to rise thereafter, but not reaching as high a level as prevailed in 1800-10 until the 1840's. So strenuous were the doubts subsequently raised concerning the implications of those findings, and the methods by which they were obtained, that the Martin estimates are now generally discarded as a basis for serious discussion of U.S. economic growth before 1840.

Martin's leading critics, however, were unable to come to an agreement on a more believable picture of the course of change during these decades. Without venturing direct estimates of his own, Simon Kuznets [5] argued that a rise in per capita real national income was considerably more plausible than a decline, in view of the increased proportion of the population in gainful occupations and the relative transfer of workers out of agricultural pursuits that occurred between 1800 and 1840. William Parker and Franklee Whartenby [10], on the other hand, questioned the supposition that labor productivity in agriculture increased, or at least remained constant, during this peri-

od; reviewing the available evidence, they judged it "too weak to support Kuznets' inference that per capita real income followed a rising trend from 1800 to 1840."

Douglass North [7] [8] approached the problem from a rather different direction. Shifting attention away from developments impinging immediately upon agricultural productivity, and directing it toward the sharp alterations that took place in the condition of U.S. foreign commerce in the period 1790-1815, North suggested that the years of Neutral Trade (1793-1807) formed an era of "extraordinary prosperity," even in comparison with the period of peace after 1814. Much the same view has recently been propounded by George R. Taylor [12], save that the post-Embargo Act decline is made to appear somewhat less severe, or the subsequent recovery rather more rapid than the movements envisioned by North. Whereas North concludes that "per capita real income was higher in 1799 than it was to be again for a half-century" [7, p. 387], Taylor writes [12, p. 440]: "My own estimate is that the average level of living in 1799-1806 was not reached again until the early 1830's at the earliest, and . . . the average for 1836-40 was at best not much higher than that for the prosperous years around the beginning of the century."

Thus the matter presently stands. Martin's estimates have been banished from sight, but without any specific figures having replaced them, an after-image of a more or less stagnant level of per capital real product still lingers on.

This impression, and the explanations advanced in its favor, are, I suggest, barely more substantial than the Cheshire cat's smile. The evidence that can now be brought to bear upon relevant considerations of a thoroughly familiar kind impels me to advance several counterpropositions about U.S. economic growth prior to the Civil War. For the sake of exposition, these may be stated as robustly as good conscience will allow and rather more categorically than the presently available evidence warrants.

To begin with, the level of real gross domestic product per capita neither declined nor remained stagnant over the 1800-40 period. According to the figures shown in Table 1, per capita real GDP increased during this interval at an average annual rate exceeding 1 percent but probably less than 1.5 percent. While the rate of advance was thus slower than that attained after the Civil War, the gain was hardly insignificant; by 1840 per capital real GDP was probably 60 percent higher than it had been at the beginning of the century.

The growth of real GDP per capita did not, however, proceed steadily during these decades, just as it was not stable over the course of the 125 years that followed. Within the first 70 years of our existence as a

TABLE 1
 CONJECTURAL AND MEASURED RATES OF GROWTH OF REAL GDP AND
 REAL GDP PER CAPITA IN THE U.S., 1800-60
 (Average Annual Percentage Rates)

Intervals*	Real GDP Per Capita (1)	Real GDP (2)
	Long-Term Trend Rates of Growth:	
1800-60†	1.27 (1.38)†	4.32 (4.42)†
1800-35‡	1.22 (1.35)	4.28 (4.48)
1835-55	1.30	4.40
	Rates of Growth over 20-year Intervals:	
1800-20§	0.24 (0.27)	3.29 (3.31)
1810-30§	1.54 (1.75)	4.53 (4.74)
1820-40‡	1.96 (2.30)	4.96 (5.28)
1830-50‡	1.37 (1.51)	4.39 (4.53)
1835-55	1.31	4.39
1840-60	1.59	4.73

* Initial and terminal dates refer to U.S. census periods; e.g. census year 1799 or calendar year(s) 1799-1800, census year 1859 or calendar 1859-60.

† Parentheses indicate the underlying conjectural estimate(s) is drawn from the Variant I series in Table 2. Unbracketed conjectural rates refer to estimates from Variant II series, also in Table 2, col. 4.

‡ Indicates the initial date observation is a conjectural estimate.

§ Indicates both initial and terminal observations are conjectural.

SOURCE: Col. 1—Table 2, cols. 4 and 5, for chained indexes of real GDP per capita in 1840 and 1860 prices. Col. 2—Underlying real GDP index derived from Table 2 and population statistics in *Historical Statistics of the U.S.* (1960), p. 7, Series A-2.

nation, there were, I suggest, three distinct episodes of accelerated growth, in the course of each of which per capita real product may have increased at rates exceeding 1.5 percent per annum, if not 2 percent per annum.

The first of these movements extended from the early 1790's into the opening decade of the century. In all likelihood, the boom had already begun to slacken before it was brought to an abrupt end by the disruption of the U.S.'s opportunities for continued large-scale participation in international commerce and shipping. As North and Taylor maintain, the heights of prosperity to which the expansion of neutral trade had carried the economy could not be sustained after 1807. But, the ensuing decline hardly could have been as drastic as they have been led to suppose; the sharp deterioration of the international terms of trade, to which North has drawn attention, might have been responsible for something like half of an estimated 10 percent total decline in per capita real income, appropriately defined, between 1800 and 1810. Of course, were we to insist on following conventional real product accounting procedures, the estimated fall would be even less serious, for the 1800-10 deterioration of the terms of trade would have the statistical effect of raising the measured level of real product in 1810 rela-

tive to that in 1800. But, regardless of the way terms of trade effects are treated, it appears that the 1800 level of real GDP per capita had been regained, if not surpassed, before the crisis and depression of 1818-19.

The second surge of accelerated growth, getting under way in the early 1820's, thus came after a protracted period which may well have seen no permanent advance in per capita real income above the level attained when the century was new. This second expansionary movement was no mere recovery from a business cycle downturn; it seems to have lasted for a decade and a half—far outliving the Era of Good Feelings which had attended its initiation—before yielding to marked retardation. Direct estimates of real GDP per capita indicate an average annual growth rate in the neighborhood of 0.6 percent per annum during the decade from the mid-1830's to the mid-1840's, whereas an average growth rate as high as 2.5 percent per annum may have been sustained during the 1820's and early 1830's. (Compare Table 2.)

It is, consequently, quite unwarranted to suppose the accelerated growth of per capita real product observed from the mid-1840's to the late 1850's was unprecedented in U.S. experience or constituted the continuation of a truly secular movement whose origins reached back into the 1830's. This third surge of growth—so much discussed in recent years—had already lost considerable momentum before the outbreak of civil conflict, like the disturbed international conditions of 1807-14, brought in its wake an attenuated period of retarded per capita real product growth.

The instability of the rate of per capita product growth during the antebellum era makes it a treacherous business to infer secular trends from observations drawn at arbitrary census-year intervals. We may attempt to abstract from such variations by considering the trend between 1800, the mid-1830's, and the mid-1850's, occasions on which, it is generally agreed, the U.S. economy experienced strong pressure upon existing capacity and rising prices generated by high levels of effective demand. When this approach is adopted, very serious doubts arise regarding the occurrence of any "sharp break in the trend," let alone an 1843-60 "take-off," or the upward shift "not very long before 1839," which North and others would seem to favor.

Instead, it appears more reasonable to maintain that no significant acceleration of the secular trend in real GDP per capita took place within the era of our national history preceding the Civil War. The evidence now points to average annual rates of increase very close to 1.3 percent in the two trend intervals, 1800-35 and 1835-55, as well as over the whole time span from 1790 to 1860.

II

The foregoing statements, I am well aware, are provocative if not rash. It must be stressed that they do not rest entirely on detailed direct estimates of real product in the U.S. before 1840 comparable with those Robert Gallman [3] has recently published for the years following 1834. Their basis is, nonetheless, a concrete set of "conjectural estimates" (Table 2) arrived at by formally drawing together fragments of quantitative evidence that have accumulated since Kuznets first addressed himself to the problem of U.S. income growth before 1840.

In view of the remaining limitations imposed by the available data, it is still convenient to adhere to a familiar general approach to the problem. Making use of a simple identity, an index of output per capita may be represented as the product of two other indexes: the first describing the relative level of per capita labor inputs and the second the relative level of output per unit of labor input, or, using the labor input measure adopted here, average real product per worker. The problem of estimating the relative levels of per capita product in any pair of years can thus be decomposed into the tasks of arriving at consistently defined estimates of these two underlying magnitudes. Within this general framework it is comparatively easy to marshal evidence bearing directly upon the major empirical issues raised by the controversy over the 1800-40 period. Yet, the provision of answers to questions about the impact of the changing industrial distribution of the labor force upon average labor productivity in the economy, or the effect of the westward movement upon labor productivity in agriculture, is treated here as subsidiary to the task of deriving plausible estimates of per capita real product. And that problem can best be regarded as one of controlled prediction or "retro-diction" rather than as an exercise in the analysis of observed phenomena.

The particular prediction model within which available scraps of information relating to the period 1800-40 can be readily assembled is, in its general features, extremely simple, almost too naïve to claim so fancy a title. Specifically, (*a*) the economy is sectorized into agricultural pursuits and all other productive activities; (*b*) the intersectoral shift component of overall labor productivity change is gauged with reference to the relative levels of output per worker in the farm and non-farm sectors at one point in the period, the 1839-40 census year; (*c*) it is assumed that the (weighted) average intrasectoral rate of labor productivity growth in both sectors equaled the rate of growth of output per worker in the dominant activity, agriculture. With these speci-

TABLE 2
TRENDS IN REAL GROSS DOMESTIC PRODUCT PER CAPITA, U.S., 1800-60

Year*	Basic Data Used in Calculation of Col. (4): Indexes, 1840=100		Real GDP Per Capita Indexes, 1840=100, Based on:	
	sA_t (1)	$\frac{(\pi_A)_t}{(\pi_A)_0}$ (2)	(4)	
			Conjectural Estimates in 1840 Prices Variant II†	Direct Estimates in 1860 Prices (5)
1800	.826	76.4	64.4	60.2
1810	.837	73.9	61.9	57.8
1820	.790	76.6	67.6	63.6
1830	.707	90.0	84.0	81.8
1835	.....	.....	98.6	98.6
1840	.634	100.0	100.0	100.0
1845	.....	.....	"Test Predictions":	98.6
1850	.548	100.0	113.0	104.5
1855	.....	.....	138.0	110.4
1860	.532	121.5	.....	128.0
				137.0

* Census year intervals; e.g., 1799-1800, 1809-10, etc.

† Based on Definition II measure of $\delta = .511$.

‡ Based on Definition I measure of $\delta = .400$.

Sources: The sources given here do no more than identify the data by references to the tables (each accompanied by extensive notes and sources) in my forthcoming article, "U.S. Real Product Growth Before 1840: New Evidence, Controlled Conjectures," in the June, 1967, issue of the *J. of Econ. Hist.*

Columns 1, 2, 3: The variables are those defined in the text above. For Col. (1) here, cf. Table 4, col. 1; for Col. (2) here, cf. Table 6, line c. 2 for 1800-40, and Table 2, col. 3, for 1840-60; for Col. (3) here, cf. Table 3, col. 1.

Column 4: Computed, following the formula given in the text above, from Cols. (1), (2), (3) here, and the alternative estimates of the relative level of agricultural output per worker, given in notes (†) and (‡) to this table.

Column 5: Cf. Table 8, col. 3.

fications, and the available direct estimates of the overall rate of U.S. labor force participation, it is extremely easy to calculate hypothetical or, as I prefer to call them, conjectural indexes of real gross domestic product per capita.

Estimates of per capita real output (v), identical to those implied by the foregoing general specification, can be computed on the following more restrictive assumptions: (1) the ratio of agricultural output per worker π_A , to nonfarm output per worker, π_N , remains constant through time; (2) since $(\pi_A/\pi_N) = \delta$, is a fixed parameter, the average intrasectoral labor productivity trend is identical to the trend of output per worker in either of the sectors; i.e., $(\pi_A)_t/(\pi_A)_o = (\pi_N)_t/(\pi_N)_o$, by assumption.

Define real GDP per capita as: $(V/P) = v$; the farm labor force as a proportion of the total labor force as: s_A ; the ratio of the total labor force to the population as: ρ . For any given date, we may then write the identity,

$$v = [s_A\pi_A + (1 - s_A)\pi_N]\rho.$$

And, since it is assumed that $(\pi_A/\pi_N)_t = \delta$, for all dates, the desired index may be computed from:

$$\frac{v_t}{v_o} = \frac{(\rho_t)(\pi_A)_t[(1/\delta) - (1/\delta - 1)s_A]_t}{(\rho_o)(\pi_A)_o[(1/\delta) - (1/\delta - 1)s_A]_o},$$

given observations of the variables ρ , π_A , and s_A .

Simple assumptions fail to do justice to the complexities of long-run economic change, and naïve, highly aggregated models may not carry us far towards a satisfactory understanding of the way the behavior of producers and consumers meshed together to yield the historical course of events observed in a market economy. Yet, when it comes to predicting or simulating aggregate phenomena, it is quite frequently found that an admixture of naïveté and aggregation is not necessarily bad.

Consider the performance of the present prediction equation in describing the growth of per capita real GDP in the U.S. over the course of the two decades following 1840. The naïve calculations suggest that a 38 percentage point increase occurred between 1840 and 1860. (Cf. Table 2, col. 4, Variant II.) Independent direct estimates of GDP per capita in constant (1860) prices—derived from Gallman's recent work (cf. Table 2, col. 5)—show a 37 percentage point rise between those two dates. For the shorter, intercensal periods, the predictions are only slightly less impressive: they overstate the percentage change "observed" during the 1840's by 3 percentage points and understate the "observed" change in the 1850's by 2 percentage points. These, re-

member, are predictions of proportional changes in per capita real GDP; the conjectural estimates of the levels of real GDP fall still closer to their respective marks. I daresay Professor Gallman himself would not think it reasonable to strive for greater accuracy, in view of the margins of error he attaches to his real GNP estimates [3, pp. 52-57, 62].

There is, of course, no reason to suppose the present prediction model would prove universally dependable; in an important sense, its application in this particular context does represent a judgment that the formulation is sufficiently flexible to capture two features of U.S. antebellum development which exercised a decisive influence upon the long-term growth of aggregate labor productivity and per capita real product. I take these features to be the continuing predominance of agricultural employment and the radically expanding relative importance of nonfarm employment and production. For the moment, the test results obtained for the 1840-60 interval on the basis of that judgment are sufficiently heartening to tempt inquiry into what the available data imply concerning the years before 1840.

III

On this occasion, an adequate presentation of the evidence I have assembled, including a detailed description of the new labor force and labor productivity measures which have been prepared in connection with this study, would scarcely be feasible. Adherence to the requirement of brevity permits no more than a series of bald statements of findings on the subsidiary questions around which the controversy over the pre-1840 period has swirled.

The first four points of interest relate to the growth of the labor force and its changing sectoral distribution during the 1800-40 interval.

1. Although between 1800 and 1860 the overall U.S. labor force participation rate rose 10 percent, from .32 to .35 approximately, the increase that took place over the decades prior to 1840 amounted to only a 3.5 percent gain. (Table 2, col. 3.)

2. If the course of change in labor force participation offers scant support for the view that per capita real product rose substantially during the 1800-40 interval, just the opposite must be said of the impressive structural change brought to light by the same set of labor force estimates. The proportion of the labor force engaged in nonfarm pursuits expanded from .17 in 1800 to .37 in 1840. (Table 2, col. 1.)

3. At the time of the Sixth Census (1840), average gross farm product per worker was four-tenths to one-half as large as average gross domestic product per worker in all nonfarm activities. To avoid over-

stating the intersectoral shift effect on average labor productivity, major reliance is placed on the higher ratio (0.511); it indicates a relative level of farm labor productivity more than twice as high as the figure Kuznets employed in his intersectoral shift calculations for the U.S. in the period between 1800 and 1840 [5, pp. 222-24].

4. Average labor productivity in the nation, it is estimated, increased by 16 (if not by 22) percent as a consequence of structural changes reflected in the altered sectoral distribution of the work force over the period 1800-40. This, combined with the small rise in labor force participation, would have raised real GDP per capita by at least 18.6 percent, making no allowance for the growth of average intrasectoral productivity.

What, then, can be said regarding the course of agricultural labor productivity before 1840? That is, after all, the key question. For, *pace* Professor North, it is readily shown that the trend in labor productivity within the agricultural sector must have exerted a dominant influence upon average intrasectoral productivity growth for the entire economy and, hence, upon the trend in per capita real product. Examination of the evidence now at our disposal leads me to hypothesize—for the purpose of the present calculations—that although the first two decades of the nineteenth century may well have passed without any notable advance having occurred in U.S. agricultural labor productivity, by 1840 real farm product per worker was substantially higher, perhaps 31 percent higher, than it had been c. 1800. Five supporting points should be quickly noted under this heading.

1. The foregoing pattern of farm labor productivity gain is implied by estimates of farm gross product, in constant 1839-40 prices, which are largely based on the assumption that the volume of farm production increased no faster than the nation's population. (Table 2, col. 2.) For per capita consumption of all farm products to have remained strictly constant, real farm output per worker would have had to have increased by at least 26 percent between 1800 and 1840.

2. Note that this finding implies that a reduction in agricultural labor productivity sufficient to offset the incipient rise in per capita real product over the 1800-40 period on other counts—i.e., increasing labor force participation, structural change, and labor productivity growth in the nonfarm sector—would have entailed a reduction in per capita agricultural output by more than 48 percent. One must be prepared to swallow improbabilities of that dimension in order to passively subscribe to the idea that the level of U.S. real GDP per capita was much the same in 1840 as it had been when the century opened.

3. A 31 percent overall rise in agricultural output per worker is certainly closely in line with the labor productivity trend estimates for

major farm crops, such as wheat, cotton, and corn, during the 1800-40 interval. The estimates to which I refer are those made by Cooper, Barton, and Brodell [1, p. 3] of the U.S. Department of Agriculture. Still, since doubts have been expressed [10, p. 207] as to the accuracy of these USDA trend estimates, we ought not rely wholly upon the corroboration they provide for the view that agricultural productivity was rising.

4. If one is willing to infer general trends in the marginal physical productivity of farm labor from data on real labor costs, a fine resemblance is to be observed between the broad movements in marginal productivity inferred from the latter, and the course of change suggested by our conjectural estimates of average labor productivity in the farm sector. My estimates of the marginal productivity of free farm laborers engaged in northern agriculture indicate something between a 26 percent and a 50 percent increase over the period 1800-40, the entire advance having occurred after 1820.

5. Finally, quantitative evidence now available from the work of Richard Easterlin [2] and William Parker and Judith Klein [9] discloses that at the time of the 1840 Census, physical labor productivity was considerably higher in the new, interior farming areas than it was on farms and plantations located in the eastern seaboard states. Thus, a calculation of the effect of the regional redistribution of the farm labor force during the period 1800-40 indicates the westward movement had most probably raised U.S. average farm labor productivity rather than lowering it as some writers [10] [12] have suggested. The estimated gain on this account, although biased toward understating the true magnitude of the "regional shift effect," is approximately 8 percent, or roughly one-fourth of the conjectured improvement in agricultural labor productivity during the forty years in question.

As a basis for making conjectural estimates of per capita real GDP, it has been assumed that the average intrasectoral labor productivity increase—for the farm and nonfarm sectors—followed the course of labor productivity within the farm sector. The indirect implications flowing from that assumption suggest it may not be too far from the truth, and that if it is incorrect, the direction of the resulting errors will be towards understating the long-term rise of per capita real product.

1. First, the available evidence relating to the real costs of farm and nonfarm labor—imperfect as it is—suggests that the rise in farm labor productivity prior to 1840 proceeded more slowly than the increase in output per worker in manufacturing, transportation, and other nonagricultural activities.

2. The implied total increase in average U.S. labor productivity over the period 1800-40 works out to be about 52 percent. Slightly less than a third of the total change is "attributable" to the structural change reflected in the altered distribution of the labor force. If this is purely a conjecture, at least it is not an outlandish conjecture; the relative importance of the intersectoral shifts' "contribution" to labor productivity growth is quite similar to that observed in the U.S. during the latter half of the nineteenth century.

3. Finally, the conjectural estimates of per capita real GDP to which we are led (in Table 2, col. 4) simply say that if farm production essentially kept pace with U.S. population growth between 1800 and 1840, real gross domestic product in the nonfarm sector increased 9.1-fold, or only 2.8 times as fast as the nation's population. Considering the spectacular rates of expansion of industrial production recorded in this period—such as the 10-fold rise in the volume of New England textile output achieved in the brief interval from 1826 to 1840—the 55 to 62 percent rise in per capita real gross domestic product implied by these estimates would appear a reasonably modest appraisal of the economic progress achieved in the United States during the first four decades of the century.

IV

For those who would maintain that the onset of modern economic growth in the U.S. was signaled by a decisive break in the long-term trend of per capita real product, the evidence now must pose something of a paradox, if not a bitter dilemma. No such secular acceleration can be found within the antebellum era. The present estimates, instead, place the rate of growth of per capita real GDP near 1.3 percent per annum for both the periods 1800-35 and 1835-55, as well as for the entire interval from 1790 to 1860. On the other hand, after the Civil War the long-term growth rates of per capita product were higher than this, being closer to 1.8 percent per annum than to 1.3 percent per annum. Furthermore, Gallman's [3, p. 11] most inclusive estimates of the real gross domestic capital formation ratio in the U.S. also suggest a more notable upward drift between the ante- and postbellum periods than had occurred within the years between 1834 and 1860. And yet, it was during the thirty years before 1850, not in the thirty years after, that an impressive transfer of labor into nonfarm pursuits, among them factory employments, was accomplished.

Are we then to conclude there was no true U.S. "take-off" in the antebellum era, and plunge immediately into the diverse histories of American colonies in the hope of discovering some prior fundamental "break in the trend"? Or, attempt to refurbish with cast-off Rostovian

garb the now very unfashionable idea of the industrial revolution "taking hold" in the U.S. only after the Civil War? At present, it seems a far more sensible solution would be to abandon the notion that significant, portentous stirrings of urban-industrial development within the predominantly agrarian antebellum economy would quickly be reflected in a discontinuous and permanent alteration of the per capita real product growth rate or in a parallel upward shift of the aggregate capital formation ratio.

British economic historians now freely entertain the hypothesis that some time elapsed before the structural transformations associated with rapid industrialization made their impact felt throughout the entire British economy; and that while a discontinuity can be seen in the long-term rate of industrial output growth late in the eighteenth century, the ensuing acceleration of per capita real income growth was a more gradual affair. Is it not fit that in this, as in other things, we might fruitfully follow a British lead?

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