

Reinterpreting Britain's Social Tables, 1688–1913*

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A clearer view of the growth and distribution of British national income between the Glorious Revolution and World War I is now beginning to emerge. A previous article (Lindert and Williamson, 1982) has updated the oft-cited social tables of Gregory King for 1688, Joseph Massie for 1759 and Patrick Colquhoun for 1801–1803. The present article combines these revisions with comparable snapshots of the income structure up to 1913, in order to illuminate the path of growth and inequality over more than two centuries. A necessary first step is to make some minor repairs in a crucial 19th-century table, that of Dudley Baxter (1868) for 1867. Next we shall carefully scrutinize the apparent movements in the size distribution of income between the late 17th century and the early 20th, suggesting some modifications of an earlier path-breaking work by Soltow (1968). Finally, the revised social tables will be used to advance a tentative new hypothesis about the course of English economic growth across the 18th century.

I. BAXTER'S CLASSES OF 1867

R. Dudley Baxter's social table looks at first glance like an optimistic defense of the status quo. Baxter's reckoning of the 1867 income distribution

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was aimed at readers "who take a pride in their country," and set out to show them "the pecuniary strength of the nation" and "what progress has been made since the beginning of the (nineteenth) century." It is therefore natural to suspect overestimation of the national income. Yet Baxter's 1867 national income estimate for the United Kingdom (£814 million) is very near Feinstein's net national product estimate (£804 million (Feinstein, 1972, p. T4)) and below Deane's estimate of gross national product minus indirect business taxes (£954 million (Deane, 1968, p. 104)). In view of this apparent accuracy and the care he put into some of his calculations, Baxter's 1867 tables should be taken seriously.

Baxter worked with a set of raw materials better than those available to his predecessors. Toward the top of the income distribution he used income tax returns, with many necessary adjustments. From the middle ranks down, he drew upon the growing volume of data on occupational wage rates. Baxter wove these materials into a 13-class income distribution, using the divisions shown in Table 1.

We have adjusted Baxter's figures in three main ways. First, we have removed 350 companies from the household ranks and distributed their retained earnings across the upper income groups. Second, we accepted Stamp's (1920, pp. 432-449) criticism that Baxter overstated the number of persons in the income-tax-paying strata by 40%, and have shifted that share to the class just below £100. The third and most serious revision relates to the treatment of paupers. Baxter did not recognize a separate class of paupers, but rather assumed that what looked to many like a pauper host with fixed members was in fact a rotating population of workers out of work for less than half of the year. Surely, poverty was not shared this equally. Yet Bowley and Stamp made similar assumptions for their 1880 and 1913 estimates. To allow comparisons over time, two different Baxter estimates had to be developed, both shown in Table 1. The "with paupers" estimates accept Perkin's (1969, pp. 419-420) figure of 610,400 "wageless families" since the concept seems comparable to the paupers and vagrants of earlier tables. For comparisons with later tables, we shall use the "without paupers" estimates since these are closer to the concepts used by Bowley, Stamp, and Baxter himself.

II. NEW CLUES ON INCOME INEQUALITY, 1688-1913

Baxter's and other social tables must be read with great care, since they are based on rough guesses. Furthermore, they only show inequality between classes and not inequality within classes. We know from late 19th-century evidence on earnings, for example, that earnings varied greatly even within well-defined occupational groups, such as male domestics, male operatives in cotton manufacturing, or the clergy (Williamson, 1980, Table 1, p. 464). Thus the tables are likely to understate overall income inequality.

In spite of their flaws, these social tables tell fascinating tales about the income gaps between rich and poor in modern Britain.

A. *Victorian Inequality in International Perspective*

For all their possible errors, the tables give some clear signals. One of the clearest is that mid-Victorian England and Wales was among the most unequal of modern societies. Consider the shares of income going to the top 5 and 20% in six countries before 1920 (Kuznets, 1966, pp. 208–211; Table 3 below):

Country	Share (%) of all personal income received by	
	Top 5%	Top 20%
England and Wales, 1867	46.0	63.3
Prussia, 1875	26	48
Saxony, 1880	34	56
German Empire, 1913	31	50
Denmark, 1870	36.5	n.a.
United States, 1917–1919	24	n.a.

Inequality in England and Wales stands out even when gauged by the standards of Germany. Indeed, the inequalities of Victorian England exceeded those of all advanced countries since World War II. Of the 70-odd countries yielding postwar estimates of the size distribution of income, only a handful in the throes of rapid population growth and early development—Iraq, Mexico, Brazil, and ten other countries in Africa and Latin America—can match the unequal Workshop of the World in 1867 (Paukert, 1973, Table 6; Chenery, Ahluwalia, *et al.*, 1974, Table 1.1).

Had British inequality always been that severe?

B. *The Soltow Hypothesis*

In 1968 Soltow published a pioneering article on long-term trends in British income inequality. Drawing on the arithmetic of Gray, King, Colquhoun, Baxter, and Bowley, Soltow formed the tentative hypothesis that income inequality did not change, either in England and Wales or in the United Kingdom, between 1688 and 1913 (Soltow, 1968, p. 22). Beneath this constancy, he saw an egalitarian undercurrent implicit in the industrialization process, an undercurrent that became visible in the overall income distribution only after World War I (Soltow, 1968, pp. 27–29).

Even if no new data were now available, Soltow's results would require revision. For 1688 he used Colquhoun's error-ridden transcription of

TABLE 1
Baxter Revised: All Income Recipients, England and Wales, 1867

Class	"Without paupers"		"With paupers"	
	Number	Total income (£ 1000)	Number	Total income (£ 1000)
£5000 +	4,290	90,384	4,290	90,384
£1000-5000	25,200	75,544	25,200	75,544
£300-1000	90,000	79,296	90,000	79,296
£100-300	510,300	101,976	510,300	101,976
"Near" £100	1,422,860	106,715	1,422,860	106,715
Wage class				
I	56,770	3,366	51,757	3,366
II	1,066,200	52,782	972,050	52,782
III	876,520	35,183	799,119	35,183
IV	2,943,060	92,739	2,735,246	92,739
V	419,340	11,923	382,310	11,923
VI	1,676,310	42,313	1,550,054	42,313
VII	202,620	4,221	187,969	4,221
VIII	544,540	12,202	496,455	12,202
Paupers	0	0	610,400	0
	9,838,010	708,644	9,838,010	708,644

Sources and notes. Baxter (1868, Appendix IV, Tables I and II), with revisions discussed in Appendix A of the discussion-paper version of this article, available from the authors. The "without paupers" estimates are those for which paupers are not separately numbered and are instead mixed into the other wage-earning classes according to Baxter's assumptions. The "with paupers" estimates isolate 610,400 "wageless families" (Perkin, 1969, pp. 419-420) and remove these from Baxter's wage-earning classes.

King's original tables. Massie's table for 1759 was ignored altogether. Soltow also counted relief as income of the poor in 1801-1803, marring the comparability of this benchmark estimate with others. Finally, Soltow took no account of the later revisions of the 1867-1913 estimates by Stamp (1920), Bowley (1937), and others. These defects have been repaired while making the revisions used here.

C. Income Inequality Trends among Nonpaupers

These new estimates suggest that our view of British inequality history should be changed. The new view can be seen by proceeding along two paths, both impaired by the difficulty of measuring pauper incomes. Unfortunately, our sources did not deal with pauperism consistently, so this tough issue will be set aside until inequality trends among the non-paupers are clearly understood.

English and British inequality trends without the pauper host are summarized in Table 2. The main result is unmistakable: 1867 looks like a watershed. Sometime around this mid-Victorian benchmark an episodic

TABLE 2
Clues about Income Inequality Trends in England-Wales and in the United Kingdom, 1688-1913, "without Paupers"

Observation (with revisions)	Income recipients and number of income classes	Gini coeff.	Income shares (%)				Atkinson index:			
			Bottom 40%	40-65% group	65-90% group	Top 10%	Top 5%	$\epsilon = 1.5$	$\epsilon = 2.5$	$\epsilon = 4.0$
England and Wales										
King, 1688	Households and single individuals, 13 classes	0.468	15.4	16.7	26.0	42.0	27.6	0.393	0.491	0.569
Massie, 1759	Households and single individuals, 13 classes	0.487	15.8	14.1	25.8	44.4	31.2	0.399	0.474	0.531
Colquhoun, 1801/1803	Households and single individuals, 13 classes	0.519	13.4	13.3	28.0	45.4	29.8	0.450	0.542	0.607
Baxter, 1867	Households and single individuals, 13 classes	0.551	14.8	11.7	20.8	52.7	45.1	0.473	0.523	0.562
United Kingdom										
Baxter, 1867	All income recipients, 8 classes	0.538	15.2	32.4		52.4	46.8	0.464	0.510	0.547
Bowley, 1880	All income recipients, 6 classes	0.520	17.0	28.8		54.2	49.4	0.462	0.502	0.532
Bowley-Stamp, 1913	All income recipients, 12 classes	0.502	17.2	33.0		49.8	43.8	0.427	0.475	0.522

Sources and notes. For 1688-1867, see Lindert and Williamson (1982, Tables 2-4) and Table 1 of this paper, excluding the pauper and vagrant classes for reasons discussed in the text. Note that we have condensed the data from 1801-1803 and earlier into 13 income classes approximating those of Baxter and Table 1. This step is necessary to make the inequality statistics comparable over time. A corollary is that all these measures understate the true inequalities in roughly equal degrees as a result of aggregation into 13 income classes. Yet this aggregation does not affect the view of trends, as these Gini coefficients confirm.

	1688	1759	1801/1803
Original class detail	0.482	0.495	0.531
13 classes, as above	0.468	0.487	0.519

Baxter, 1867: the UK distributions follow the procedures used to derive the distributions for England and Wales "without paupers," as shown in Table 1.

Bowley, 1880: From Bowley (1920, p. 16), augmented and revised. The income from wage earnings is taken from Bowley's (1937, p. 139) own revisions. Bowley's (1937, p. 46) distribution of wage-earning heads of households is then applied to these revised totals.

Bowley-Stamp, 1913: a revision of Bowley (1920, p. 16). The 1913 figure for incomes over £160 is taken from Bowley (1937, p. 139). The distribution between the high-income groups £160-700, £700-5000, and £5000+ is based on the 1910 distribution reported in Bowley (1920, p. 22). The distribution of income among the super-rich £5000+ class is based on Stamp's (1920, p. 331) application of Pareto's Law. The 1913 "intermediate income" figure is Bowley's (1937, p. 139) revision, and the wage distributions are taken from the same source (pp. 46, 139).

The Atkinson index is explained in Atkinson (1970).

shift took place. It now appears that income inequality declined for at least a century after 1867. Table 2 also suggests that the 1860s were preceded by at least a century of rising inequality.

The early rise in inequality seems to have characterized the whole income spectrum. From 1688 to 1801/1803, the top 35% in the income ranks gained larger shares of the pie at the expense of both the bottom 40% and the middle group (those in the 40–65% range). Between 1801/1803 and 1867 the widening continued, but with a different twist: the top 5 and 10% gained enormously, the unskilled bottom 40% gained slightly, while those in between got squeezed. Of course, the 40–90% “middle income group” was a mixed bag. According to Massie’s and Colquhoun’s social tables, they would have included the skilled and white collar—military officers, lawyers, clergy, and clerks; small and large capitalists—tradesmen, innkeepers, ale-sellers, and manufacturers of all kinds, and farmers plus freeholders. These very mixed inequality trends from Colquhoun to Baxter suggest a subtler hypothesis about the early and mid-19th century than has been offered before. It contrasts with the pervasive inequality march posited by Marx (1947 ed., Chaps., XXV, XXXII, esp. pp. 659, 660) and Perkin (1969, Chaps. V and X). It also contrasts with the egalitarian triumph posited by Greg (1853), Giffen (1883, as cited in Perkin, 1969, p. 410), Clark (1940), and Hartwell (1961). Nor is it clear just how much of the 1801/1803–1867 trends are a peculiar result of offsetting Napoleonic and post-Napoleonic events, offsetting movements apparent at least in pay ratios among wage and salary earners (Williamson, 1982).

The post-1867 trends are sharper and far less clouded by qualifications. Marshall (1910, p. 687) thought a leveling trend had appeared, and data on the distribution of earnings and house tax returns agree (Williamson, 1980). The social arithmetic summarized in Table 2 now adds further confirmation. From 1867 to 1880, the Lorenz curve continued the rotation it had begun at the start of the century: both the bottom 40% and the top 5% gained further ground relative to groups in the middle. After 1880, the gains for the bottom 40% were more modest, while the share going to the top 5% dropped off sharply. Despite these variations, overall inequality declined unambiguously throughout the half-century ending in World War I.

These inequality trends bear a striking resemblance to a conjecture offered by Kuznets (1955), to the effect that income inequality is likely to show an early rise and late decline as economic development proceeds. The present paper puts the inequality transition somewhat earlier than folklore has implied, since inequality seems to have stopped rising by the middle of the 19th century. The timing is intriguing: the corner was apparently turned soon after 1867—the year when Volume I of *Das Kapital* was published, well before the rise of trade union power, the introduction of Lloyd George’s progressive taxes, and the rise of gov-

ernment spending as a share of national product. If further empirical work sustains this verdict, then the time will certainly be ripe to explore anew the determinants of inequality.

D. What to Do about the Pauper Host?

Mapping the rise of income inequality up to the mid-19th century is complicated by the problem of how to count the poor who fell below conventional occupational classes. The original social tables took very different approaches to pauperism. Let us see what the revised estimates imply about inequality trends, and then explore possible biases in these estimates of the pauper host and their pretransfer incomes.

First, what happened to the pauper host? The revised social tables imply the following trends:

Year	No. of "able-bodied" income recipients plus paupers	Number of paupers	"Pauperism" or percentage in poverty
1688	1,390,586	336,672	24.2
1759	1,539,140	192,310	12.5
1801/1803	2,193,114	435,397	19.9
1812	4,248,018	630,780	14.8
1867	9,838,010	610,400	6.2

Given the massive fall in pauperism from King to Baxter, that any rise in inequality still persisted in the estimates would be remarkable. After all, what happens to the bottom 40% surely must determine in large measure what happens to the Gini coefficient. And what happens to the rate of pauperism clearly must have a major influence on trends in the bottom 40%. Thus, can we believe these measured rates of pauperism?

Second, how does pauperism affect inequality trends over the two centuries? With the pauper host included, the revised social tables' inequality implications are summarized in Table 3. Here it seems that the cause of equality scored a major victory sometime between 1688 and 1759, with the poorest 40% gaining noticeably at the expense of the upper middle class (the 65-90% group). This movement was erased and reversed between 1759 and 1801/1803 when the top third of the income distribution gained at the expense of the lower two-thirds. From 1801/1803 to 1867, both the bottom and the top groups gained at the expense of the middle, with no net change in the overall Gini coefficient. Taken at face value, then, the "with pauper" estimates confirm the shift toward more unequal incomes up to 1867, yet give it a somewhat different timing. Here the rise of inequality seems to have come in the late 18th century, preceded

TABLE 3
Clues about Income Inequality Trends in England and Wales, 1688-1867, "with Paupers"

Observation	Income recipients and number of income classes	Average nominal income (£)	Gini coeff.	Income shares (%)				Atkinson index			
				Bottom 40%	40-65% group	65-90% group	Top 5%	$\epsilon = 1.5$	$\epsilon = 2.5$	$\epsilon = 4.0$	
1688	Households and single individuals, 13 classes	39.18	0.541	10.9	15.0	30.1	44.0	29.9	0.533	0.667	0.751
1759	Households and single individuals, 13 classes	46.37	0.509	13.7	15.3	26.7	44.4	31.2	0.457	0.577	0.683
1801-1803	Households and single individuals, 13 classes	91.00	0.577	10.3	12.5	29.4	47.9	32.7	0.571	0.700	0.781
1867	All income recipients, "with paupers," 13 classes	72.03	0.577	13.2	12.1	21.3	53.4	46.0	(a)	(a)	(a)

Sources and notes. Lindert and Williamson (1982, Tables 2-4) and Table 1 above. (a) The Atkinson Index equals unity whenever any class has zero income, as do the 1867 paupers here. Note that we have again condensed the data for 1688-1801/1803 into 13 income classes approximating those of Baxter and Table 1. Trends are nowhere affected, however, as these Gini coefficients confirm:

	1688	1759	1801/1803
Original class detail	0.556	0.529	0.593
13 classes, as above	0.541	0.509	0.577

by a leveling and followed by mixed trends (e.g., rising fortunes at both the bottom and the top of the distribution).

The "with pauper" figures cannot be accepted at face value, however, since their treatment of pauperism is shaky at best. The "poor" have always had varying levels of pretransfer income. Perhaps more to the point, social observers changed their view of what constituted the poverty threshold over time, and changing the poverty income threshold from period to period will surely affect trends in pauper counts. Our sources clearly had differing propensities to count the poor. We suspect that the King and Colquhoun pauper counts may yet be too high and/or those of Massie and Baxter may yet be too low even after our revisions. King's bias toward pessimism may account for some of the 24.2% of families he put in poverty. The figures for 1801/1803 may also define poverty too broadly to be comparable with those from other dates. The original poor relief returns for 1802/1803 showed 11% of the total population on relief at a particular time of year. Colquhoun assumed there were almost as many other paupers not on relief. Though Table 4 has pruned his estimates, it still implies that a very large minority of paupers and vagrants went unrelieved at any one time of the year. By contrast, the estimates for 1759 (12.5% in poverty) and 1867 (6.2%) may reflect too narrow a definition of poverty, even after our attempts to revise the original estimates.

We cannot yet reject these measured changes in poverty as mere mirages created by oscillations in the propensity to look for the poor and count them. Real wages of the unskilled (Lindert and Williamson,

TABLE 4
Alternative Estimates of the National Income of England and Wales, 1688-1801/1803

Variable	Benchmark years			Annual growth rate (%)	
	1700	1760	1800	1700-1760	1760-1800
Deane-Cole index of "total real output" (1800 = 100)	39.84	58.57	100.0	0.64	1.35
	1688	1759	1801/1803	1688-1759	1759-1801/1803
Nominal personal income deflated by					
(a) consumer prices	49.40	65.03	100.0	0.39	1.01
(b) consumer prices, excluding cereals	43.88	56.21	100.0	0.35	1.35
(c) producer-good prices	56.14	56.08	100.0	-0.001	1.35
Population (1801/1803 = 100)	60.17	69.02	100.0	0.19	0.87
Per capita income, deflated by					
(a) consumer prices	82.10	94.23	100.0	0.19	0.14
(b) consumer prices, excluding cereals	72.93	81.44	100.0	0.16	0.48
(c) producer-good prices	93.30	81.25	100.0	-0.19	0.48

Sources. Deane and Cole (1969, p. 78); Lindert and Williamson (1982, Tables 2-4); Mitchell and Deane (1971, pp. 468-469).

1983), income shares of the bottom 40% “without paupers” (Table 2 above), and the ratio of income across class¹ all show time series patterns much like the estimated shares above the poverty line. Yet, it is not the trends in pauperism which are in doubt; rather, it is the *magnitude* of changes in pauperism which is at issue. We can only voice the suspicion that the revised pauper counts exaggerate the downward trend in the poverty share between 1688 and 1867; in addition, they exaggerate the rise to and fall after 1801/1803.

We conclude that the data with and without paupers best support the following tentative findings about long-run inequality trends:

(1) If overall inequality between 1688 and 1759 rose, it did so only very modestly. Both the richest 10% and the poorest 40% (with or without paupers) gained at the expense of the middle income groups.

(2) Income gaps widened in the century between 1759 and 1867. The top 5% gained enormously at the expense of the middle and upper-middle classes (from the 40th to the 95th income percentile) across the first two-thirds of the 19th century. The upper-middle gained in the last half of the 18th century, at the expense of the bottom two-thirds, the bottom 40% in particular.

(3) Between 1867 and 1913, income inequality declined in the United Kingdom. This reversal toward greater equality thus antedates the World Wars and the onset of the modern welfare state by almost a half century.

III. NEW CLUES ON 18TH-CENTURY ENGLISH GROWTH

The original social tables constructed by King and Colquhoun have had a strong influence on our views regarding the timing of growth and its acceleration before and during the Industrial Revolution (e.g., Deane, 1955; Deane and Cole, 1969, esp. Chap. 2). Now that the social tables have been revised, we can explore their implications about the onset of modern economic growth.

The revised estimates both confirm and contrast with the pathbreaking Deane–Cole estimates of 18th-century growth. As shown in Table 4, the new estimates seem to agree with the Deane and Cole conjectures about

¹ Table 2 implies the following \bar{y}_i/\bar{y} , where \bar{y}_i is the mean income within the i^{th} percentage range and \bar{y} is the overall mean:

i^{th} Class (percentage range)	Year			
	1688	1759	1801/1803	1867
Bottom 40	.39	.40	.34	.37
40–65	.67	.56	.53	.47
65–90	1.04	1.03	1.12	.83
90–100	4.20	4.44	4.54	5.27
95–100	5.52	6.24	5.96	9.02

the last four decades of the century, at least within the range of error imposed by imperfect national-income price deflators. Growth there was in the late 18th century, even in per capita terms, and the Deane-Cole rates will not be disputed here.

For the years before 1760, there is the distinct suggestion that national income² may have grown more slowly than Deane and Cole thought. If the overall Schumpeter-Gilboy consumer price index can serve as a rough national income deflator, the growth between 1688 and 1759 proceeded at about half the rate Deane and Cole suggested for 1700-1760. To be sure, 1688 is not 1700, and the intervening years saw hardships. Yet no available series show the 19% drop between these two years that would be needed to reconcile the two growth tales. Could the revised estimates be closer to the mark than the Deane and Cole estimates?

To test this possibility against independent data, we begin with some recent evidence suggesting that agricultural growth was slightly *faster*, not slower, before 1760 than Deane and Cole had imagined. Jones (1974, Chaps. 1-4) has posited a substantial rate of agricultural improvement in the late 17th and early 18th centuries. Using an ingenious argument to show that the agricultural stagnation posited by Deane and Cole for 1710-1740 could not fit the observed pattern of price and population movements, Crafts (1976) confirmed Jones' allegations about the early 18th century. Applying Crafts' approach to the longer period 1688-1759 "predicts" that agricultural output grew at about 0.30% a year, or about the same rate as national income suggested by the revised social tables.³

² Total personal income virtually equaled national income at factor cost before the mid-19th century, since retained earnings of nonhousehold enterprises were negligible (as assumed for 1688 by Deane and Cole (1969, p. 2), for example).

³ The following 1688-1759 values have been inserted into Crafts' Equation (4): national income growth = 0.39% a year, population growth = 0.19% a year, relative price shift in favor of wheat (1684/1692 to 1755/1765, from Mitchell and Deane (1971, pp. 468, 469) = 0.095% a year, income elasticity of demand for agricultural products = 0.7 (Crafts, 1980, p. 159), and price elasticity of demand for agricultural products = -0.8. These yield the predicted agricultural growth rate of 0.39% a year. Applying the same equation to the Deane-Cole total real output growth 1700-1760 "predicts" agricultural growth of 0.48% a year, still twice the Deane-Cole assumption of 0.23%. The higher predicted figure seems easily matched by the Overton estimates of growth in grain yields per acre, cited below.

Cole (1981, p. 64) has himself revised the Deane-Cole guesses about agricultural production for 1700-1740 in accordance with the suggestions made by Crafts. For the period 1700-1760, he now finds an agricultural output growth rate of 0.64% a year, in place of the Deane-Cole rate of 0.23%. Cole may now be correct, but we suspect that our rate of 0.48% a year may still be nearer the mark. Cole's new estimates are based in part on two series whose growth he may have overstated. The first is the provisional Lee-Schofield population series (Lee and Schofield, 1981), which grows faster for this period than either earlier estimates or the final Wrigley-Schofield estimates (Wrigley and Schofield, 1981, Appendix 5). The other is the unrevised Deane-Cole series for industrial production, which affects the estimate of agricultural production via the Crafts technique. This industrial series is based on Hoffman's series, and fails to reflect the slower industrial growth shown more recently by Hyde, Riden, Pollard and others.

The “predicted” long-run rate of agricultural growth is quite consistent with Overton’s recent estimates of the rise in grain yields in East Anglia up to 1735.⁴ It also squares with evidence that Gregory King overstated grain yields and employment in agricultural occupations for 1688: Overton’s data show King’s grain yields to be too high, and Tables 1 and 2 have reported a much smaller share of families in agriculture than King’s 1688 table implied.

If overall national income grew slower and agricultural output grew at least as fast as the Deane–Cole estimates before 1760, then something else has to give. Some other component of national income must have grown more slowly than Deane and Cole reckoned. Recent studies do indeed identify a candidate for such a downward growth revision: the industrial sector. Deane and Cole conjectured that commerce and industry together grew at about 1% a year between 1700 and 1760. The best data now available for individual subsectors tend toward lower annual rates⁵:

Coal production, England and Wales (E&W), 1680s–1750s	0.46%
Iron production, E&W, 1680s–1710s	0.58%

⁴ Overton has kindly supplied data underlying his 1979 article. The data (which extend back to the 16th century) show the following movements in average grain yields per acre from the 1680s to the 1730s:

	Bushels per acre			
	c.1688 (1683/1693)	c.1700 (1695/1705)	c.1710 (1705/1715)	c.1730 (1726/1735)
Wheat	13.91	12.42	11.265	14.73
Rye	7.68	9.38	7.75	10.28
Barley	15.48	11.705	12.64	16.33
Oats	12.34	13.20	14.72	16.58
Peas	9.745	6.79	7.835	15.64

(Overton’s probate yields may be a bit low if valuers had yields net of harvest costs in mind, but this possibility should not have any significant effect on trends.) In all likelihood, yields continued to rise between 1730 and 1760. Deane and Cole imply that agricultural output rose almost 12% over this period (1969, p. 78), and acreage probably rose less. Indirect confirmation comes from the behavior of land rents over the same period. The rents per acre cited in Lindert and Williamson (1982, fn. 12) rose much faster than the 12% rise in wheat prices between circa 1730 and circa 1760. This rise in rents measured in bushels of wheat per acre is a rough measure of the rise in marginal productivity of land, which should have been accompanied by a rise in average yields per acre.

⁵ The coal production figures are from Pollard (1980, pp. 216, 229). Iron production has been estimated by Hammersley and Hyde, as reported by Riden (1977, pp. 443, 448). Wood imports, retained cotton imports, soap production, tallow candles, silk imports, and Cornish tin production figures are from Deane and Cole (1969, pp. 51, 72). Civilian maritime employment is from the “seamen’s sixpence” returns (Davis, 1956, p. 339). All other series are from Mitchell and Deane (1971, *passim*).

Pig iron production, Great Britain, 1720/1724-1755/1759	0.395%
Wood imports, E&W, 1695/1704-1755/1764	0.73%
Retained cotton imports, E&W, 1695/1704-1755/1764	1.36%
Paper charged with duty, E&W, 1695/1704-1755/1764	1.54%
Soap charged with duty, E&W, 1711/1720-1756/1765	0.34%
Tallow candles, E&W, 1711/1720-1756/1765	0.60%
Beverages, E&W, 1684/1692-1755/1764	
Small beer	-0.30%
Strong beer	-0.265%
Spirits	2.45%
Silk imports, E&W, 1695/1704-1755/1764	0.655%
Cornish tin production, 1695/1704-1755/1764	1.18%
Civilian maritime employment, E&W, 1712-1759	1.01%

To weave such materials into an overall growth rate for industry and commerce between 1688 and 1759, one needs to worry about value-share weights, about discrepancies in the years covered, and about omitted subsectors. Yet coal, iron, wood-using industries, soap, and beer were sufficiently important to create the presumption that the overall rate of growth could have been significantly below the rate calculated by Deane and Cole for 1700-1760, enough to lower the rate of national income growth despite the extra agricultural growth just discussed.

All things considered, the available data support the following *1688-1760 growth hypothesis*:

Real national income of England and Wales grew at a slow rate something like 0.39% a year. Agriculture grew at the same rate. Industry and commerce grew more rapidly, but not as rapidly as the 1700-1760 annual rate of about 1% estimated by Deane and Cole. Rent and service sectors slightly declined as a share of national income, apart from a brief expansion of military payrolls during the Seven Years' War (1756-1763).

If this is true, growth was more balanced before 1760 than Deane and Cole have suggested, and much more balanced than growth was to become after 1760.

IV. CONCLUSIONS

Using the revised social tables is clearly both risky and rewarding. It is risky because each table is a set of tentative educated guesses subject to further revision when better raw data become available. The "results" of this paper represent working hypotheses, not firm findings.

Yet the patterns here are intriguing. British income history seems to show the same sort of up-steady-down pattern of inequality that Kuznets (1955) imagined in a presidential address. The mid-Victorian era seems to emerge as the apogee of British inequality. The temporal correlation

between the trends in inequality and those in growth looks both strong and weak in a way also revealed by the American record (Williamson and Lindert, 1980, Chaps. 2–4). Though the 1760 benchmark for England and Wales happens to be an accidental byproduct of our scrutiny of Massie's 1759 table, it is interesting to note that both the growth rate of per capita income and the inequality trend may have tipped upward around this date. This parallels the simultaneous American shifts toward greater inequality and faster growth sometime around the 1820s. Yet in Britain, as in America, the later onset of a leveling trend (1870s for Britain, perhaps, and 1929–1950 for America) was not accompanied by a slowing down in the growth of per capita income. The present paper has not explored why growth and inequality should seem to coincide in the earlier phase of modern growth and not in the later, but at least this and other basic questions about the history of income distribution have been better posed.

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