

201

Magnanimous Albion: Free Trade and British National Income, 1841-1881*

DONALD N. McCLOSKEY

University of Iowa

I. FREE TRADE AND THE HISTORIANS

During the forty years from Peel's to Gladstone's second ministry the commercial policy of the United Kingdom moved decisively from fettered free trade. National income rose decisively as well, the income of labor with it. It was no surprise to free traders, of course, that the removal of a pernicious tax on enterprise, most particularly on the enterprise of industrial laborers and capitalists, brought with it greater wealth for all. They were even willing to concede that only a portion of the greater wealth, though a substantial portion, was attributable to free trade. After all, it was not the promise of material well being alone that buoyed their spirits in the struggle against protection. Their spiritual leader, Cobden, saw far beyond cheaper corn and better markets for British cotton textiles; he wrote, indeed, "in the Free Trade principle that which shall act on the moral world as the principle of gravitation in the universe—drawing men together, thrusting aside the antagonism of race and creed, and language, and uniting us in the bonds of eternal peace."¹ Such cosmopolitan visions faded in later controversy, for, unlike the material promise, they had all too plainly not been fulfilled. Later critics of free trade, such as the "fair dealer" historian, William Cunningham, could in the 1900s emphasize the

This essay was born in 1971 and has led since then a life of seminars and conferences, accumulating at them a long list of intellectual debts. The institutional debts are to the meetings of the Econometric Society in 1971, and to seminars at the Universities of Chicago, Illinois, Indiana, Michigan, North Carolina State University, Stanford University, and the University of Wisconsin; the personal debts are to Geoffrey Andron, Michael Boskin, William Byerts, Rudiger Dornbusch, Steven Easton (for which, especially, the title), Stanley German, Jacob Frenkel, Harry Johnson, Ronald Jones, Paul McGouldrick, and Michael Sessa.

¹ Speech of January 15, 1846, in Free Trade Hall, Manchester (printed in Hirst, 1903, p. 9).

more selfish motivation for free trade, namely, the fixing of Britain's monopoly of manufactures on the rest of the world for a few more decades than its natural term (Cunningham, 1910–11). Free traders could (and did) respond, of course, that great benefit accrued to Britain's trading partners as well. And in their more pragmatic moods the free traders were willing to make the selfish argument. In his testimony to the Select Committee on Import Duties in 1840, J. D. Hume argued that discouraging foreigners from supplying Britain with agricultural products encouraged them to turn instead to manufacturing. In a passage that foreshadows the gloom of many Englishmen half a century later, when the German and American threat had become plain, he argues that by protecting agriculture "we place ourselves at the risk of being surpassed by the manufactures of other countries; and . . . I can hardly doubt that [when that day arrives] the prosperity of this country will recede faster than it has gone forward" (Great Britain, 1840, Q 1198, p. 98). But whether they believed free trade was a merely selfish policy or not, or as appropriate to the 20th century as to the 19th, free trader and fair trader alike agreed that in the middle of the 19th century it could be justified if need be on selfish grounds alone: it had produced then, they believed, substantial material benefits for the nation.

Historians have adopted the contemporary view of the matter. The correlation between rising national income and the move to free trade, the apparent significance for the distribution of income of removing high duties on food, and the intense involvement of Britain in the international economy have been the elements in a demonstration that commercial policy had a substantial effect on the size and distribution of British national income in the 19th century. The depth of analysis, to be sure, has left something to be desired, for free trade has not been isolated from other factors influencing national income, the effects on distribution have been treated in merely qualitative terms, and the argument has been bound together by an unsupported conviction that foreign trade was crucial to Britain's economic welfare. Of course, free trade had ideological and political effects, and it would be idle to deny that these in turn may have had large effects on the economy: the constitution, for example, might not have survived the European revolutions of 1848 without the repeal of the Corn Laws in 1846. The direct economic effects, however, have been exaggerated. Historians have naturally if not always correctly assumed that it matters economically how a great issue of economic policy such as this is resolved, the more so as the historical study of the issue has been left largely to political rather than economic historians. The history of economics itself has lent credence to this view of the importance of British commercial policy: since the inception of the discipline its best minds (many of them British) have put commercial policy at the center of their thinking. The most impressive intellectual tools developed by Smith,

Ricardo, Mill, and Marshall were developed precisely for the examination of the effect of international trade and of government policy toward that trade on national income, and their practical motive was in large part the early encouragement and late defense of Britain's policy of free trade. The sheer weight of the intellectual achievement would incline an economist, like the historians, toward attributing great significance to free trade in the 19th century.

The theory of international trade has been considerably refined since then, to the point where it can be applied with suitable modifications to fit the circumstances of the time to the question of whether this root event deserves the attention it naturally attracts. What follows is a preliminary assault on that question.

II. THE MOVE TO FREE TRADE

The first step in assessing the economic effects of the change in British commercial policy is to discover what it was and how it changed. The free trade movement began in earnest in the 1840s, the most dramatic event in its beginnings (although, despite its symbolic importance, not by itself constituting free trade) being the repeal of the Corn Laws on June 26, 1846. The 1840s are no exception to the historiographic lemma that it is always possible to smooth the discontinuities of events by examining their preparations in the past. One can date the beginning of the ideological preparation, of course, to the appearance of *The Wealth of Nations* and the administrative preparation in the 1780s, with some tentative simplifications of a complex tariff inherited from an age in which as Maitland put it "the British parliament seems rarely to rise to the dignity of a general proposition" (1910–1911). The Napoleonic Wars interrupted many trends in the British economy, among them these stirrings of a rational tariff policy. Every commodity or transaction within reach of the government was taxed and retaxed to fight the French, from dogs and attorneys to incomes and imports. One major tax alone, that on incomes—"the oppressive and inquisitorial tax" as contemporaries knew it—was repealed with the peace, reducing the government to a policy of continuing other war taxes to meet payments on the national debt (over half of the budget down to the 1850s) and irreducible expenditures on the civil service. In 1820, Sydney Smith could write, after 5 years of peace, that "the dying Englishman, pouring his medicine, which has paid 7 percent, into a spoon that has paid 15 percent, flings himself back upon his chintz bed which has paid 22 percent, and expires in the arms of an apothecary who has paid a license of a hundred pounds for the privilege of putting him to death."²

² In the *Edinburgh Review*, 1820, January, p. 77 (quoted in Buxton, 1888, Vol. I, p. 20).

What few changes were made during the next 20 years in the role of customs revenues in this mélange of taxes were accomplished largely by Huskisson's budgets of 1824 and 1825: obsolete duties were repealed on imports of manufactured commodities such as cotton textiles and iron (for which Britain had in any case a crushing comparative advantage), some duties on raw materials were reduced, many export bounties were abolished, and most prohibitions, except those on certain agricultural products, were abolished as well. The goal was rationalization more than reduction—who, after all, could quarrel with a program of removing contradictory or inoperative duties?—and even this modest program was far from complete in 1840. The Select Committee on Import Duties (filled with free traders, who had of late become a formidable political force) reported that in 1839, 17 of 721 articles in the tariff schedule produced 94.5% of the tariff revenue.³ This was a Benthamite calculation: the tariff revenue, it argued, could be collected more efficiently even without a fundamental change in commercial policy. By 1840 the hard political decision to move to lower rather than merely simpler duties—involving as it did the reimposition of the income tax, the removal of duties discriminating in favor of the colonies, and, hardest of all, the abandonment of protection to agriculture—had yet to be made. Even with these rationalizations the tariff on the eve of the move to free trade was complex. It contained prohibitions of imports of live or dead meat, duties on “slave-grown” sugar two or more times higher than those on sugar from British colonies, drawbacks on timber for use in the mines of Cornwall or in churches, 80-odd different specifications of skins, from badger to weasel, with associated duties, export duties on coal and wool, and over 2000 import duties on items ranging from agates to zebra wood.⁴

Despite the bewildering detail, however, the thrust of the tariff is relatively clear. Its protective effect was felt primarily in land-intensive products, these being in any case the dominant products of importation: late in the 19th century, under a regime of free trade and of increasing foreign competition in manufactures, nearly four-fifths by value of British net imports were land-intensive raw materials and food.⁵ In other words,

³ Great Britain, 1840, p. iv. Sir Henry Parnell (Lord Congleton), a member of the Committee of 1840, had made a similar calculation 10 years before in his influential book, *Financial Reform* (1831, p. 114), with similar results: in 1827, 18 of 566 articles produced 89% of the revenue. He argued that “The effect . . . is to render the accounts complex, and to generate smugglers. Prices are enhanced with little or no advantage to the revenue . . . [T]he saving of expense in management would, in all probability, be greater than the revenue . . . which would be lost by repealing [the 510 duties with low yields]” (p. 115).

⁴ The retrospective study of *Customs Tariffs of the United Kingdom from 1800 to 1897* (Great Britain, 1898, LXXXV, c. 8706), gives the complete tariff schedule. The schedule in effect from 1833/1834 to 1841/1842 takes up 100 large pages in this volume; that from 1876/1877 to 1885/1886, 10 pages.

⁵ Calculated from the Trade and Navigation Accounts for 1891 (Great Britain, 1890/1891, LXXXI). Corn of all sorts was 14% of the value of imports—this after the disasters that

the categories of the simple theory of trade—importables, exportables, and nontraded goods—correspond well in Victorian Britain with agriculture (including some mining), manufacturing, and the residual sector, services. The Navigation Acts (repealed in 1849) protected shipping services, to be sure, but it is doubtful whether the protection was by this time important for the industry, particularly for its more modern branches. A few manufacturing industries, notably silk manufacturing, received substantial protection in the tariff, but for most protection would have been superfluous. Indeed, by 1840 the effective rate of protection for factors of production specialized in manufacturing was slightly negative: as free traders pointed out, Britain's exports of manufactures contained raw materials made more expensive by tariffs, whether for revenue on warm-climate raw materials such as raw cotton, for the good of the empire and its land owners on cold-climate materials such as Canadian timber, or for the protection of British rents on metals such as copper and tin ore. The British tariff in the early 1840s, then, raised the price of land-intensive raw materials and food relative to manufactures and services. A tariff designed by committees of landlords in Parliament and imposed on the imports of a nation that required from the rest of the world little but raw materials and food could hardly be expected to achieve any other result.

The tariff in the early 1840s, furthermore, bulked large in British economic and political life: it was high and, as we shall see in a moment, imports were substantial in relation to national income and the revenues from taxing them were a significant fraction of the revenues of the central government. The height of the tariff and the changes in its height may be measured by the ratio of tariff revenues to the value of imports. Changes in the ratio, of course, reflect not only changes in tariffs but also changes in the composition of imports. For example, we know that tariff rates changed little from the budget of 1825 to 1840, yet the ratio fell from 47% in 1826–1830 to 31% in 1836–1840. As Albert Imlah, who made these calculations, observed, this was a result of “a rise in the rate of flow of goods bearing low duties,” principally raw cotton (1958, p. 121). The solution is to calculate tariff rates weighted by shares of imports before and after the move to free trade. For a dozen items making up 56% of the value of imports in 1841 and 41% in 1881, and paying always over 80% of tariff revenues, Table 1 gives the materials of such a calculation.

The average tariff rates using the weights (the shares of commodities in the total value of imports) for various years are:

Notice the uniformity of result in the critical figure, the absolute change in the tariff rate from 1841 to 1881. From whatever perspective it is viewed, the move to free trade consisted in a narrowing of the wedge between world and British prices of imports by about 21% of the world price.

befell British agriculture in the 1870s and 1880s; it is not wise to construe “Free Trade” as “the fall of the Corn Laws.”

TABLE I
Net Imports, Tariff Collected, and Tariff Rates, 1841, 1854, and 1881 (£000's)

Commodity	1841			1854			1881		
	Imports value before tariff (£)	Tariff revenue (£)	Rate (Proportion)	Imports value before tariff (£)	Tariff revenue (£)	Rate (Proportion)	Imports value before tariff (£)	Tariff revenue (£)	Rate (Proportion)
Coffee	925	888	0.96	887	468	0.53	1,081	195	0.18
Wheat	6,950	386	0.056	11,800	173	0.015	31,000	0	0
Other grain	1,040	135	0.13	10,100	242	0.024	19,800	0	0
Cotton	10,400	528	0.051	17,900	0	0	38,800	0	0
Rum	738	1,060	1.4	558	1,280	2.3	462	2,358	5.1
Brandy	419	1,330	3.2	770	1,400	1.8	1,396	1,613	1.2
Sugar	7,630	5,110	.67	8,550	4,490	0.53	23,800	0	0
Tea	3,480	3,970	1.1	4,000	4,780	1.2	8,560	4,000	0.47
Staves	472	40.6	0.086	666	0	0	567	0	0
Unawn fir	4,060	568	0.14	5,260	253	0.048	3,470	0	0
Tobacco	402	3,390	8.4	998	4,780	4.8	1,369	8,380	6.1
Wine	1,510	1,720	1.1	2,250	1,910	0.85	5,426	1,380	0.25
Sum	38,000	19,000	0.50	64,000	20,000	0.31	136,000	17,900	0.13
All Other	30,000	4,700	0.16	70,000	5,000	0.07	198,000	1,300	0.01
Total	68,000	23,700	0.35	134,000	25,000	0.19	334,000	19,200	0.06

Sources. After 1854 it is no great trick to acquire the statistics from the *Annual Statement of Trade and Navigation* (S.P. 1854/1855, Vol. LI for 1854; S.P. 1882, Vol. LXVIII for 1881). As was pointed out above, before 1854 the Board of Trade did not give values of British imports. Porter's Tables for 1841 (S.P. 1843, Vol. LVI, pp. 17-27) contain physical volumes of net imports and the tariffs paid for these dozen commodities. Gayer et al. (1953), in Part III of the microfilm supplement to *The Growth and Fluctuation of the British Economy, 1790-1850*, give their prices (or for certain varieties of them) in 1841 before and after tariffs. The two methods of confining these data to arrive at figures for imports are: (1) to apply the before-tariff prices to the (known) quantities of imports; (2) to apply the rates of tariff implied by the two sets of prices (before and after tariff) to the (known) tariff revenues. The second is chosen here because it involves a more plausible (and more testable) assumption than the first: that the rate of tariff is roughly the same across varieties of, say, rum rather than that the Gayer-Rostow-Schwartz variety of rum is roughly the average variety. The two methods, in any case, give much the same result.

TABLE 2
Alternative Calculations of the Tariff Rate, 1841, 1854, and 1881

The average rate	Weighted by each commodity's share of imports		
	1841	1854	1881
1841	0.35	0.30	0.27
1854	0.25	0.18	0.16
1881	0.13	0.10	0.06
Total decline, 1841-1881	0.22	0.21	0.21

Sources. See the text and sources, Table 1.

III. EXPLAINING FREE TRADE

If a policy of free trade consisted simply of the reduction of the wedge, the explanation of the policy would present fewer difficulties. But such a view ignores the revenue function of tariffs: the British government needed revenue, and tariffs were one important way of getting it. Tariff policy, in other words, operated under a constraint of a given size of government revenues, a constraint which contemporaries felt binding. The rate of fall in tariffs was in fact held back in each budget by the demand for revenue and by opposition to increases in alternative taxes, notably the income tax. If the size of the government budget fell relative to the yield of other taxes or if the yield from the tariff itself rose in an import boom, the tariff rate could be reduced. From the perspective of tariff policy these would be favorable accidents resulting from other, independent policies—such as retrenchment in government expenditure—or other, independent events—such as a boom in imports. The pure case of a policy of free trade would be the replacement of the tariff by other taxes. By virtue of two fortunate accidents, in fact, British commitment to free trade was not put to this stringent test: the ratio of imports to national income rose, bringing a larger share of taxable transactions under the eye of the customs officer and making it possible, therefore, to collect the same revenue at lower rates; and the required government revenue fell in relation to national income.

These accidents can be measured as follows. The ratio of all tax revenue to national income (t) was determined by the desirability of governmental expenditures and was to a first approximation independent of how the revenue was raised: there is no reason to believe that Britain would have spent less on servicing the government debt and maintaining its armed forces (which together were two-thirds of the total even in 1881) had some method of taxation been eliminated. The rallying cry of free traders was "Retrenchment and Reform," the one an appeal for lower

taxes in total (lower t), the other for a different set of taxes. The taxes to be reformed were of three sorts, customs, excise, and income taxes. The taxable transactions for excise and income taxes may be taken to be income as a whole, and public policy here may be summarized, therefore, in terms of ratios of excise and income tax revenues to national income (r_e and r_i). The taxable transactions for customs taxes were, of course, imports, and the rate of tax a ratio of customs revenues to imports (r_c). The magnitudes in 1841 and 1881, and in 1861 for comparison, are exhibited in Table 3.

The ratio of imports to national income (m) was determined in part by tariff policy. What part depends on the elasticity of demand for imports. Measured at current values (necessary to preserve the identity to follow in a moment), the fall in the tariff rate from 1841 to 1881 was equivalent by itself to a 29% fall in the price of imports, or a fall of 0.84% per year. Imports increased about 3.98% per year over the 40 years, and national income 1.84% per year. The higher the price elasticity of demand the more of this high rate of growth of imports can be attributed to the effect of tariff reductions alone: with a price elasticity of 2.55 and an income elasticity of 1.0, for example, the entire rise in the ratio of imports to national income can be attributed to it, for in this case 1.84 percentage points of the total 3.98% growth of imports per year can be attributed to the effects of rising income and $2.5(0.84) = 2.14$ (that is, the entire residual) to the effects of the tariff reductions. The elasticities are not known. The subsequent argument, therefore, will allow for the possibility that part, at least, of the rise in m is attributable to tariff policy itself.

It is true by definition, in any case, that total tax revenue is equal to the sum of the various sources of revenue (Y is national income, the other variables are as defined above and in Table 4):

$$tY = r_e Y + r_i Y + r_c m Y.$$

Solving for r_c , the tariff rate must be:

$$r_c = \frac{1}{m} (t - r_e - r_i).$$

Since this is identically true, the change in the tariff rate (call it Δr_c) can be expressed as:

$$\Delta r_c = (t - r_e - r_i) \Delta \left(\frac{1}{m} \right) + \frac{1}{m} (\Delta t - \Delta r_e - \Delta r_i) + \Delta \left(\frac{1}{m} \right) (\Delta t - \Delta r_e - \Delta r_i).$$

The total change in r_c , therefore, can be decomposed into the effects of the retrenchment in government expenditures (the fall in t), the rise in the

TABLE 3
Tax Revenues, National Income, and Imports, United Kingdom 1841, 1861, and 1881
(Millions of £)

	1841	1861	1881
(1) Revenue from taxes ^a	49.9	67.5	69.0
(2) Gross national product of U.K. ^b	548.0	744.0	1145.0
(3) Excise (indirect domestic) taxes ^c	24.3	30.8	32.4
(4) Income (direct domestic) taxes ^d	2.2	13.4	17.4
(5) Customs taxes ^e	23.4	23.3	19.2
(6) Net imports ^f	68.0	183.0	334.0

^a Row 1: Tax revenues of U.K. central government = rows (3) + (4) + (5). This excludes income from the post office and telegraph, as well as other nontax revenues (fees for other services and some interest income on government loans). Nontax revenues were £12.9m in 1881 (Mitchell, 1962, p. 393 f.).

^b Row 2: Gross National Product of the United Kingdom. For 1841 this is an extrapolation from an estimate of gross national income of Great Britain alone by Deane and Cole (1964, p. 166) on the basis of their estimate (p. 168) that Irish gross national income was 15 to 20% of the income of the United Kingdom before the potato famine. The midpoint (17.5%) was used, yielding a range of error in the extrapolation alone of \pm £17m. The figures for 1861 and 1881 are C. H. Feinstein's estimates of net national income of the United Kingdom (given in Mitchell, 1962, p. 367) plus his implied estimates of £17m and £28m for depreciation investment (gross investment minus net investment, given in Mitchell, p. 373).

^c Row 3: Excise (indirect domestic) taxes are approximately the sum of the categories in the official Finance Accounts entitled "Excise," "Stamps," and "Land and Assessed Taxes" given in Mitchell (1962, p. 393 f.). An attempt was made to distinguish indirect taxes (in economic terms, taxes that primarily distort the marginal rates of substitution among commodities alone) from direct taxes (that distort the marginal rate of substitution between leisure and all commodities). Clearly, an excise tax on goods complementary with leisure (beer, playing cards) will affect the choice between leisure and commodities: the distinction is not, in other words, a sharp one. On the basis of Buxton's explication of the Finance Accounts in 1886 (Buxton, 1888, Vol. II, p. 382 f, from Finance Accounts, P.P. 204 of 1887), Death Duties were shifted out of Stamps (where they were placed entirely before 1870 in the official accounts and partly—in the form in 1886 of £2m of stamps on deeds, legacies, and other instrument—thereafter) into Income Taxes (row 4). In 1841, according to Porter (1851, p. 495), stamp duties on legacies, probates, etc. were £2.12m: these were taken to be the total of Death Duties in this year. Land and Assessed Taxes (consisting in 1886 of £2.0m on house duty and £1.1m on land tax: from 1871 the assessed taxes—a miscellany of excises on horses, dogs, armorial bearings, wig-powder, etc.—were placed under Excises; they were about £1m) are taken to be taxes on housing services, with no effect on the choice between effort and leisure, and are included here.

^d Row 4: Income (direct domestic) taxes are the sum of "Property and Income Taxes" and "Death Duties" (Mitchell, 1962, p. 393 f.), the latter defined as explained in the previous note to include the Death Duties placed in the Stamp account.

^e Row 5: Customs taxes are the category of Customs in the official accounts (Mitchell, 1962, place cited), apparently net of drawbacks.

^f Row 6: Value of imports net of reexports (no correction is made for the divergence between c.i.f. and f.o.b. values) are Imlah's estimates for 1841 and official statistics for 1861 and 1881 (both given in Mitchell, 1962, p. 282 f.).

ratio of imports to national income, m (itself partly, but only partly, a result of tariff reductions), and pure reform, the rise in excise, r_e , and income taxes, r_i , to replace revenue lost from the customs. The values of r_e , m , t , r_e , and r_i are given in Table 4.

There are two ways of calculating the effect of each variable by itself: one can either ask how much the tariff rate would have changed if only the variable in question was allowed to change, leaving the others at their initial values; or how much it would have changed if only that variable was *not* allowed to change, allowing the others to vary as they in fact did and subtracting the result from the actual change. The choice between these two is arbitrary, but the ranking and relative magnitude of factors is the same for both.

The first four rows of Table 5 give the reductions in tariff attributable to each factor in isolation. The reduction attributable to the fall in the rate of excise taxation is negative because excise taxes fell despite a relative decline in revenues from tariffs: had other events not offset the effect of excise policy, tariffs would have had to rise. The actual fall in the tariff rate was 0.286. The sum of the four isolated factors in the first column exceeds this figure and the sum in the second falls short of it because of the way the two techniques treat interactions among the factors. The significant point is that for either technique retrenchment (the fall in t) and the rise of imports relative to national income (the rise in m) account each by itself for around half of the sum, and the variables describing pure reform (r_e and r_i) for nearly none. The fifth and sixth rows confirm this impression: the changes in m and t together more than explain the 0.286 fall in the tariff from 1841 to 1881, while those in r_e and r_i together would have yielded a slight rise, not a fall, in the tariff.

As was noted above, of course, some of the rise in the import ratio is itself attributable to the fall in the tariff. But allowing for the endogeneity of the import ratio would merely reinforce the results: because the variables describing pure reform would imply a rise in the tariff, they evidently cannot account for a rise in the ratio of imports to national income (and even if they somehow could, their combined impact, including all the

TABLE 4
Tax Rates and the Ratio of Imports to National Income,
United Kingdom 1841, 1861, and 1881

	1841	1861	1881
r_e , Rate of import duties	0.344	0.127	0.058
m , Ratio of imports to national income	0.124	0.246	0.292
t , Ratio of all tax revenues to income	0.091	0.091	0.060
r_e , Rate of excise taxation	0.044	0.042	0.028
r_i , Rate of income taxation	0.004	0.018	0.015

Source. Table 3.

TABLE 5
The Amount of Reduction in the Tariff Rate, 1841–1881, Attributable to
Certain Sets of Determinants

	Only these determinants change, 1841–1881 (1)	Only these determinants do not change, 1841–1881 (2)
(1) t	0.25	0.10
(2) m	0.20	0.076
(3) r_e	-0.13	-0.058
(4) r_i	0.089	0.035
	$\Sigma = 0.41$	$\Sigma = 0.15$
(5) m and t	0.31	0.33
(6) r_e and r_i	-0.040	-0.020
(7) r_e , r_i , and m	0.18	0.04

Sources. See the text and Table 4.

Note. Differences are from Table 4. The formula in the text can be expanded as follows (below each term is its value):

$$\Delta r_e = [(t - r_e - r_i) (\Delta \frac{1}{m})] + [\frac{1}{m} \Delta t] - [\frac{1}{m} \Delta r_e] - [\frac{1}{m} \Delta r_i] + [(\Delta \frac{1}{m}) \Delta t] \\ -0.200 \quad -0.250 + 0.129 - 0.089 \quad +0.144 \quad -0.074 \\ - [(\Delta \frac{1}{m}) \Delta r_e] - [(\Delta \frac{1}{m}) \Delta r_i] \\ +0.051$$

These terms sum to the total change in r_e of -0.286, as required. Each experiment becomes, then, a problem in addition: add together the terms that are not zero under each specification. For the second column, subtract the result (with its sign changed) from the actual Δr_e (0.286), the difference being the contribution of the factor in question.

impact of the change in m , is considerably smaller than retrenchment alone, as line 7 of Table 5 shows). The fall in the ratio of all taxes to income, on the other hand, can account for the rise in m . Were the income elasticity of demand for imports about 1.0 and the price elasticity in or around the range 3 to 8 (depending on the experiment in Table 5 chosen as relevant)—not an impossibly high elasticity considering that many imports had close domestic substitutes and were a fairly small percentage of total domestic supply (wheat, for example, satisfies these conditions)—the fall in tariff permitted by retrenchment alone could explain, if necessary, all the rise in imports relative to income.

A deliberate policy of freer international trade, in short, was responsible for only a part—a small part, indeed—of the reduction in tariff rates. The accident of a higher ratio of imports to national income, itself only partly a consequence of British financial reform, accounts for much of the reduction, the triumph of the ideology of free trade for very little of it. The related ideology of retrenchment, expressed in a lower ratio of govern-

ment expenditure to national income, appears at first to account for still more than the rise in imports, but even here historical accident, on close examination, dominates the result. In 1841 56% of the government budget was spent in servicing the government debt accumulated from the struggle with Bonaparte; in 1881, despite the addition of debts from the Crimean War, only 36%. Government expenditures on goods and services, on the other hand, rose in step with national income. It was the success of a policy of balanced budgets—that is, the absence of British involvement in major wars, itself an accident from the point of view of financial policy—not a reduction of expenditure on collectively consumed goods in relation to national income that permitted the government to reduce taxes.

Keynes had in mind the doctrines of free traders, among others, when he wrote: “the ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else.” It is possible, however, to make the opposite error, and attribute to an idea such as Retrenchment and Reform results that are more properly attributed to the momentum of events. If free trade had substantial effects on the British economy, it was not so much by policy that it did, but by inadvertence.

IV. THE EFFECTS ON INCOME

The effects on the British economy of the move to free trade from 1841 to 1881 can be divided into changes in the size of national income and changes in its distribution. Contemporary observers, and historians after them, have considered these to be the important issues: the one an issue of how much free trade increased British income as a whole, the other of how much it helped or hurt specific groups, landlords and laborers in particular. Both depend on how free trade affected the British terms of trade, for the only effect of altering a tariff is to alter the equilibrium terms of trade. The effect of the terms of trade on the distribution of national income will be considered briefly later; here the question is one of their effect on its size.

The simplest way to frame an answer to the question is to view the sector of an economy in which trade with other economies takes place as an industry gaining importable goods through the sacrifice of the resources embodied in exportable goods, just as the steel or clothing industries gain goods through the sacrifice of resources which could be employed elsewhere to produce other goods. The terms of trade are the productivity of this industry: if some external event such as increase in foreign demand for British goods or the manipulation of a British tariff increases the terms of trade, more importables can be gained from any given sacrifice of exportables, just as technological improvement in steel allows more to be gained from any given sacrifice of alternative uses of the resources to make steel. Clearly, the more important the industry is in the

economy, the more significant for the size of national income is a given increase in productivity. Because the increase saves resources whose value in alternative uses is the value of output, the relevant definition of an industry's “importance” is the ratio of the value of its output to national income (and not, for example, the ratio of its value added to national income, or the strength of its links with the rest of the economy). In consequence, with imports at a quarter of British national income, a 10% improvement in the terms of trade through a change in the tariff would increase British national income by $(1/4)(10)$, or 2.5%.

An alternative way of looking at the effect of free trade on national income which has been popular among free traders and their historians is to focus not on improved British terms of trade but on larger British exports. Lower tariffs, it is argued, permitted more imports and therefore, from either the accounting identity between the two or from the rise in foreign incomes with greater purchases by Britain, more exports. And (although this step in the argument is seldom made explicit) more exports are desirable. As Peter Mathias puts it, summarizing a long tradition of reasoning on the issue (which may fairly be described, with no intent to belittle such reasoning in more appropriate contexts, as mercantilist):

The great gains of free trade came from stabilizing wheat prices and developing steadier, rising food-import trades which . . . create[d] purchasing power abroad for British exports and fed a great increase in international trade in a generation when Britain was the pivot of the international economy. The main immediate gain from free trade thus became the increase in exports markets as imports to Britain expanded, not a fall in food prices.⁶

On one interpretation of this argument it confuses movements along a given demand curve with movements of the curve itself. Britain, to be sure, chose to trade at another point on the rest of the world's demand curve by abandoning tariffs. But the rest of the world's demand curve—or, to state the argument more completely, its offer curve—did not on this account move. On another interpretation of the argument it equates exports with income, which is legitimate only if British and other economies were operating always at less than full employment to the full extent of the increased exports. Since exports grew considerably faster than national income, and unemployment was surely not increasing in the period (and was in any case low), this position is difficult to maintain. The neomercantilist approach to the issue, in short, is misleading.

⁶ Mathias, 1969, p. 302 f. Compare Imlah, 1958, p. 144, where the assumption of less-than-full employment lies just below the surface. It is made explicit in Matthews, 1954, p. 78, for example. But his is a study of trade cycles, not of secular trends, and for his purposes the neomercantilist reasoning has the usual Keynesian justification. It is startling to find free traders in the early 19th century, sworn foes of mercantilism, putting forward with no sense of the incongruity involved a mercantilist's argument for free trade.

The alternative, and sharper, weapon in the intellectual armory of the free traders was an appeal to the logic of comparative advantage. In 1820 Thomas Tooke, in his so-called "Petition of the Merchants" to Parliament, the opening shot in the long postwar campaign to make free trade the policy of the nation, wrote: "[F]reedom from restraint is calculated to give the utmost extension to foreign trade, and the best direction to the capital and industry of the country. . . . [A] policy founded on these principles would render the commerce of the world an interchange of mutual advantages" (Hirst, 1903, p. 118). This passage and the many others like it in the subsequent outpouring of pamphlets and books on free trade contains an error in economic reasoning, the significance of which was not fully realized by economists until long after the debate on free trade closed. Tooke's argument is that free foreign trade is better than no trade at all, which is certainly correct. The argument is irrelevant, however, to the point at issue, namely, whether Britain was made better off by moving from *some* trade to *more* trade. The elimination of duties increased British demand for importables by enabling British consumers to buy at the true, low world price of importables in terms of other commodities. If British demand for importables was a nonnegligible portion of the world's demand (as, in fact, it was) the increase would raise the world price to a nonnegligible extent. That is to say, the terms of trade would turn against Britain. The deterioration of the terms of trade from the lowering of duties could be large enough to offset the advantage of more trade. In other words, it is not self-evident that it was wise policy to permit British consumers to buy or sell in foreign markets free of all encumbrances: free trade, by way of its adverse effect on the terms on which imports were purchased with exports, may have reduced British national income.

Economists will recognize this as the argument for an "optimal tariff." By analogy with the optimal behavior of a monopolist, a nation whose purchases and sales abroad have a discernible effect on world prices is well-advised to restrict its purchases and sales to some degree. And, just as one can deduce from the elasticity of demand facing a monopolist the optimal extent of divergence between his marginal cost and the price he charges, one can deduce from the elasticities of British export demand and import supply the optimal British tariff, compare it with the tariffs actually in force, and gauge the consequent loss, if any, of British income.

It is possible to create a presumption that British tariffs by 1881 were less than optimal and that, therefore, welfare was reduced by the move to free trade. A full demonstration would require an estimate of the elasticity of the foreign offer curve. Lacking such an estimate, one can nonetheless infer that it was low from the sheer bulk of British trade. By a familiar line of reasoning, for given elasticities of world demand for British exportables and of world supply of importables, the elasticities of excess demand and

supply facing Britain would be lower the higher was the British share in world production of exportables and consumption of importables. In the limit, infinitesimal shares yield infinite elasticities, that is, given prices of imports and exports over which the country—a "small country" in the jargon of trade theory—has no influence. The critical point is that 19th century Britain was not in this sense a small country: in 1870, for example, when German and American industrialization was already well advanced, British exporters supplied about a ninth of the rest of the world's demand for manufactures.⁷ The elasticity of demand facing British exporters, therefore, was likely to be low. With world elasticities of manufacturing demand and supply on the order of 1, to be sure, the implied elasticity is rather high: 17.⁸ But in view of Britain's far larger shares of world output in the particular products in which she specialized—cotton textiles and iron, for example—this is surely an extreme upper bound. The elasticity of supply of imports into Britain was probably low, on the same grounds: for many imports—raw cotton, for example—the British share was high and the elasticity of world supply low.

The implication is that the optimal tariff was high. The standard formula for an optimal tariff is:

$$t = \frac{\frac{1}{\epsilon_m} + \frac{1}{\eta_x}}{1 - \frac{1}{\eta_x}}$$

in which t is the optimal tariff on imports, ϵ_m the elasticity of foreign supply of British importables (i.e., food and raw materials) and η_x the elasticity of foreign demand for British exportables (i.e., manufactures and mercantile services). The tariff of 0.058 in 1881 would be optimal only

⁷ Britain produced a third of world manufacturing output in 1870 (inferred from Hilgerdt, 1945, pp. 128, 138–140). Britain regularly exported a quarter of her manufacturing output (inferred from the ratio of Schlote's (1952) estimate of manufacturing exports to manufacturing output at the time of the first British census of industry (1907) checked against the Hoffmann index of industrial output and the Imlah index of commodity exports). Thus, Britain consumed herself 3/12 (=34) (1/3) of total world demand for manufactures, and supplied one-ninth of the rest of the world's demand ((1-3/12) ÷ (1/4) (1/3)). By similar reasoning, British exports were an eighth of the rest of the world's supply of manufactures.

⁸ The excess demand for British exportables by the rest of the world (ED_B : that is, British exports) is equal to the demand in the rest of the world (D_R) minus the supply (S_R). Therefore, by the usual argument,

$$\frac{D_R}{ED_B} \epsilon_R^D - \frac{S_R}{ED_B} \epsilon_R^S = \epsilon_B^{ED}$$

Inserting the shares developed in the previous footnote, $\epsilon_R^D = 1$, and $\epsilon_R^S = 1$ yields $9(-1) - 8(1) = -17$.

if the elasticities were impossibly higher than they in fact were. If $\epsilon_m + \eta_x$ were equal, for example, they would each have to be in excess of 35 (in absolute values, of course) to make the optimal tariff as low as 0.058. Britain, in other words, magnanimous in her midcentury conquest of the world's markets, gave back some portion of her booty by moving this far towards free trade.⁹

The conclusion is that free trade caused the British terms of trade to deteriorate, reducing national income. It might seem possible to rescue the prevalent notion that free trade was a Good Thing for Britain by pointing out that other countries followed the British example. As more countries became convinced (from a selfish point of view, irrationally) that tariffs should be reduced the demand and supply curves facing Britain would move out, improving the terms on which Britain exchanged cotton textiles for wheat. This pleasing prospect, however, has historical flaws. Well before free trade became the ruling ideology in Britain, Alexander Hamilton and Friedrich List had provided an opposing rationale for high duties, which their countrymen and others adopted with enthusiasm. The French and Prussian enchantment with free trade in midcentury was brief, and some important trading partners of Britain—most notably the United States—never came under the spell. If the British example was followed briefly, it was soon abandoned, leaving Britain in 1881, if not before, with the lowest duties in the world. In the 1930s Britain herself finally did abandon free trade, but by then, alas, the dominant position that would have enabled her over the preceding century to exploit the rest of the world was gone.

It must be understood, however, that to say that British income was reduced by the move to free trade is not to say that the reduction was large. The worst that the 0.21 fall in the rate of tariff could do would be to reduce the terms of trade by 21%. This is because at best (for Britain) foreigners would pay all the tariff imposed on British imports, accepting a 21% lower price for, say, wheat and timber in exchange for Britain's cloth and iron; the world price of Britain's imports would be 21% lower than it would be without the tariff; that is, the price of her exports relative to her imports would be 21% higher. Reverting to an earlier line of argument, then, the maximum percentage reduction in national income was the maximum percentage deterioration in the terms of trade occasioned by abandoning high tariffs (21%) multiplied by the share of the foreign trade "industry" in national income (one-fifth would here be a high estimate of the share, given the dependence of the share on the tariff), or $21 (1/5) =$

⁹ The tariff Britain should have imposed, on this reasoning, is not the issue here, though interesting in itself. The 34% tariff of 1841 is not impossibly high: with equal elasticities the elasticities would need only to be as low as 6.8, well above levels estimated recently for countries with a much looser grip on their markets than Britain had in 1881, not to speak of 1841.

4% of national income at most. This is not a trivial fall in national income, but neither is it a disaster. Neither the negative sign nor the small size of the result will be surprising to students of the theory of international trade. This, however, is the point: thinking in simple economic terms, one cannot attribute great significance to free trade as a cause of economic growth. It accompanied a political and intellectual upheaval in mid-Victorian Britain, but did not itself determine the wealth of Victoria's subjects.

V. CONCLUSION

Thinking in simple economic terms is not an infallible route to historical truth. Free trade had other, more complex economic effects, and these in turn could have been important in raising national income. For the present it will suffice to name them and to encourage others to give them deeper thought.

At bottom most of the secondary effects of free trade depend on induced changes in the composition of British output. There is little doubt that free trade reinforced a specialization in manufacturing at the expense of agriculture, although it may be surprising to learn that from 1841 to 1881 the share of domestic trade and transport in British production rose as much as did manufacturing, and that manufacturing itself rose only from 35 to 40% of production.¹⁰ Whatever the magnitudes, in qualitative terms the changes in composition have potential effects on income as a whole. One could attempt to assemble evidence, for example, that manufacturing exhibited economies of scale that agriculture did not; or that the rate of technological advance in manufacturing was faster than in agriculture. Either of these would present the British economy with a gain in efficiency unattainable without a shift in the composition of output. But it would be necessary to show that the effects were in fact asymmetric between the export and import industries. Again, one could attempt to measure the extent of disequilibria in the British labor market at midcentury, locating pools of badly employed labor ready to move to higher wages in industries connected with exports. This, too, would raise efficiency. One would have to recognize, of course, that the pools might exist in export industries as well (coal comes to mind): again, asymmetry is essential to the argument. Or, still again, one could attempt to show that free trade altered the distribution of income in a way that raised the savings rate, and therefore the rate of growth of income. Here the chief difficulty would be that the savings rate did not rise; and a subsidiary one would be that it is at least uncertain that the distribution of income between savers and nonsavers changed in the four decades after 1841.

¹⁰ Deane and Cole, 1964, p. 166, removing the income from foreign investment.

Such ruminations are enough, perhaps, to illustrate the difficulties in

placing free trade at the center of mid-Victorian growth. In any case, the purpose here has been to loosen free trade from its traditional historical moorings. Its moorings to the ideology of Reform has been shown to be weak: reductions in tariffs were in good part due to a shrinking government budget and to an expanding volume of trade, not merely to the powerful arguments of Cobden, Bright, and their manufacturing allies. Its moorings to the mid-Victorian boom is weaker still:¹¹ free trade did not cause British growth; indeed, it may have retarded it. The moorings loosened, then, let the ship set sail.

REFERENCES

- Buxton, S. (1888), *Finance and Politics; An Historical Study*. London: John Murray.
- Church, R. A. (1975), *The Great Victorian Boom, 1850-1873*, London: Macmillan.
- Cunningham, W. (1910/1911), "Free Trade." In *Encyclopedia Britannica*. 11th ed.
- Deane, P., and Cole, W. A. (1964), *British Economic Growth, 1688-1959*. Cambridge: Cambridge University Press.
- Gayer, A. D., Rostow, W. W., and Schwartz, A. J. (1953), *The Growth and Fluctuation of the British Economy, 1790-1850*, Oxford: Oxford University Press. 2 Vols.
- Great Britain, Parliament (1854, 1854/1855, and 1881), *Sessional Papers, Annual Statement of Trade and Navigation*.
- Great Britain (1898), Parliament, *Sessional Papers, Customs Tariffs of the United Kingdom from 1800 to 1897*.
- Great Britain (1890/1891), Parliament, *Sessional Papers, Trade and Navigation Accounts, 1891*.
- Great Britain (1840), Parliament, Select Committee on Import Duties, *Report, Evidence*.
- [Hilgerdt, F.] (1945), *Industrialization and Foreign Trade*. Geneva: League of Nations.
- Hirst, F. W. (1903), *Free Trade and Other Fundamental Doctrines of the Manchester School*. London.
- Imlah, A. H. (1958), *Economic Elements in the Pax Britannica*. Cambridge: Harvard University Press.
- Maitland, F. W. (1910/1911), "English Law." In *Encyclopedia Britannica*. 11th ed.
- Mathias, P. (1969), *The First Industrial Nation: An Economic History of Britain, 1700-1914*. London: Methuen.
- Matthews, R. C. O. (1954), *A Study in Trade-Cycle History: Economic Fluctuations in Great Britain, 1833-1842*. Cambridge: Cambridge University Press.
- Mitchell, B. R., with Deane, P. (1962), *Abstract of British Historical Statistics*. Cambridge: Cambridge University Press.
- Parnell, [Sir] Henry [Lord Congleton] (1831), *Financial Reform*. London. 3rd ed.
- Porter, G. R. (1851), *The Progress of the Nation*. London.
- Schlote, W. (1952), *British Overseas Trade from 1700 to the 1930's*. Trans. by W. O. Henderson and W. H. Chaloner. Oxford: Blackwell.

¹¹ A perspicacious discussion with a similar theme but from another perspective is contained in Church, 1975, pp. 59-65.