ROBERT E. LIPSEY

Price and Quantity Trends in the Foreign Trade of the United States

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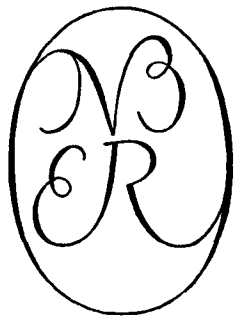
BY

ROBERT E. LIPSEY



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(Resolution adopted October 25, 1926, as revised February 6, 1933, and February 24, 1941)

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PRICE AND QUANTITY TRENDS IN THE FOREIGN TRADE OF THE UNITED STATES

Introduction

THIS study grew out of the National Bureau's interest in two related aspects of the international economic relations of the United States: "long-term movements of men, commodities, services, and securities . . . examined against the background of secular movements in the domestic economy . . ."[1]; and the cyclical behavior of American international trade and finance.

In both trend and cycle studies, a major obstacle to the analysis of changes in commodity trade has been the lack of data needed in order to separate price from quantity changes over a long period. This investigation was undertaken mainly to provide comprehensive and detailed price and quantity indexes useful for long-term and for short-term analysis.

Data previously published consisted chiefly of official U.S. Department of Commerce indexes for total exports and imports and five major economic classes. These indexes provided annual figures for 1913 and 1919-28, and quarterly or monthly figures for later years. They are fairly satisfactory,[2] except that export coverage has recently become somewhat inadequate among finished manufactures. We accepted these Commerce indexes for the period after 1923, and have concentrated our attention on the earlier years for which the data were less reliable.[3]

The only existing indexes of total trade for 1879 to 1913 are those computed by Theodore J. Kreps.[4] These measured total exports and imports

[1] Arthur F. Burns, *The Cumulation of Economic Knowledge*, National Bureau of Economic Research, 28th Annual Report, May 1948, p. 22.

[2] The export and import price indexes of the Department of Commerce are appraised by the Price Statistics Review Committee of the National Bureau in *The Price Statistics of the Federal Government*, New York, National Bureau of Economic Research, 1961, Appendix A, pp. 79–86.

[3] For use in business cycle analysis, some provision must be made for filling the gap between the end of the NBER quarterly data in 1923 and the beginning of the Commerce quarterly data in 1929. A set of monthly export indexes constructed by Dudley J. Cowden in *Measures of Exports of the United States*, New York, 1931, can be used as an interpolator for the annual Commerce series for the 1924–28 period. On the import side, however, only a very inadequate American Tariff League index is available for intervals shorter than a year. We therefore produced a quarterly interpolating series for the five major economic classes of imports. The calculation of these is explained in Appendix D.

[4] "Import and Export Prices in the United States and the Terms of International Trade, 1880–1914," *Quarterly Journal of Economics*, August 1926.

A very crude pair of export and import price indexes was constructed from wholesale price data for 1866–78 by Frank D. Graham in "International Trade Under Depreciated Paper. The United States, 1862–79," *Quarterly Journal of Economics*, February 1922. These were extended back to 1860 by Matthew Simon in "The United States Balance of Payments, 1861–1900," in *Trends in the American Economy in the Nineteenth Century*, Studies in Income and Wealth 24, Princeton University Press for NBER, 1960. Douglass C. North presents new export and import price indexes for the U.S. in the period before 1860 in *The Economic Growth of the United States, 1790–1860*, Englewood Cliffs, N.J., 1961.

only, with no breakdown by commodity group. They were heavily overweighted with primary, as against manufactured, products, and were available only annually for years ending June 30.

Our new indexes are intended to give a more detailed and a more accurate picture of the period covered by Kreps and the early estimates of the Department of Commerce. The requirement that the data be useful for business cycle analysis necessitated the computation of quarterly indexes. Since quarterly data on imports for consumption were not published, we followed the somewhat asymmetrical procedure of using general imports (rather than imports for consumption) in combination with exports of domestic products.

Because we accepted the Commerce figures for the later period, no important alterations were made in applying the Commerce classification system to earlier years, even where changes seemed desirable to make the categories more homogeneous or economically significant.

We have, however, subdivided the Department of Commerce economic classes considerably and constructed a number of combinations of the detailed indexes. For example, Export Class 207 (foodstuffs, excluding tobacco and products) matches the two Department of Commerce food classes (crude and manufactured), while Export Class 208 (foodstuffs, including tobacco and products) was constructed to fit more closely into the United Nations classification[5] or that used by the United Kingdom. Some of the minor classes of Appendix C fit fairly well into the industrial classification of domestic output, although not as well, of course, as if they had been specifically designed for that purpose.

Commodity prices and volumes describe a good deal, but by no means all, of what one might wish to know in order to analyze the changing size and composition of American trade. The American data, unlike those of many other countries, exclude ocean freight costs on both sides of the account, thus removing the need for an f.o.b.=c.i.f. adjustment to make export and import data comparable. This characteristic of the data leaves the development of transportation costs outside the area of this study, although these costs are of great importance. A forthcoming study by Douglass C. North[6] should make possible a combination of commodity prices and transportation costs for much of the period covered here.

Another missing variable, on both the export and import sides, is the tariff. There is no information readily available on tariff rates applicable

[5] United Nations, *Standard International Trade Classification*, Statistical Papers, Series M, No. 10, 2nd Edition, New York, 1951.

[6] Summarized in "Ocean Freight Rates and Economic Development, 1750–1913," *Journal of Economic History*, December 1958.

to exports; some kind of composite of the tariffs of importing countries would be the appropriate rate. For American imports there is a tariff index with U.S. wholesale price index weights covering the period 1907 through 1946.[7] There are also data, covering a much longer period, on the ratio of total tariffs collected to total dutiable imports, or total imports. These, as tariff indexes, have the obvious defect that the level of the tariff rate on a commodity influences the weight of the commodity in the index. A sufficiently high tariff could conceivably remove itself from the index by eliminating the import. Nevertheless, these ratios, which were used as tariff indexes by Humphrey[8] for example, were appraised by Lerdau as being "far less suspect than it would appear on theoretical grounds."[9] Neither of these indexes is altogether satisfactory, but Lerdau found that his had some net explanatory value in a correlation analysis in which the ratio of imports to gross national product was the dependent variable. Either of these indexes could be combined with our price indexes to produce a crude estimate of changes in the prices actually facing American purchasers of foreign goods.

A number of adjustments to the official series on the total value of U.S. exports and imports have been suggested, both in official customs reports and by independent scholars. We have incorporated into our indexes only those two adjustments which proved allocable by commodity, but it would be fairly simple to make other adjustments in the totals.

For example, exports by land, omitted from U.S. customs data before 1893, could be added. Matthew Simon, using Canadian import data,[10] made such an adjustment in the aggregate figures, but our attempt to break these down by commodity groups was frustrated by difficulties in matching Canadian and U.S. commodity classifications. For a number of products, exports reported by the U.S. were greater than the reported Canadian imports despite the presumed exclusion of exports by land from the U.S. data.

Simon also adjusted for a discontinuity in the prescribed method of valuation of imported commodities: he increased the 1884-91 values by 5 per cent to add certain inland freight and other costs. This followed a suggestion made by the Chief of the Bureau of Statistics.[11] We were not able to find any basis for applying this adjustment to individual com-

[7] E. Lerdau, "On the Measurement of Tariffs: The U.S. Over Forty Years," *Economia Internazionale,* May 1957.

[8] Don Humphrey, *American Imports*, New York, 1955.

[9] "On The Measurement of Tariffs," p. 239.

[10] "The United States Balance of Payments, 1861–1900."

[11] U.S. Bureau of Statistics, Treasury Department, *Annual Report and Statement of the Chief of the Bureau of Statistics on the Commerce and Navigation of The United States, 1884,* p. XI.

modities. Since it could have varied a great deal from one commodity to another, we did not take it into account at all.

We have tampered with the official value series in only two ways. The first was a correction for the overvaluation of imports from Brazil in the early 1890's which resulted from the depreciation of the paper milreis. The error was conspicuous and was concentrated in two important commodities, coffee and rubber. More realistic values were estimated by using official quantity data (which were not affected) in combination with outside data on rubber and coffee prices. A description of the adjustment is given in Appendix C.

Official values were further adjusted for changes in the U.S. customs area which took place in 1900. Here again the adjustment, which is described in Appendix F, rested on fairly reliable data and was concentrated in two commodities, exports of green coffee and imports of sugar.

Many fundamental questions about the meaning or validity of long-term comparisons of price levels and terms of trade have been ignored here, as in most empirical discussion of these problems. Except in Chapter 3, where several types of index numbers are compared, we have generally used the Fisher "ideal" indexes to represent "price" and "quantity" as if these terms were unambiguous and independent of the particular weights from which they were computed. It is also assumed that the shift after 1923 from one type of index to another, and the shifts from one base (or weighting pattern) to another before that date, do not by themselves make comparisons meaningless.

The first two chapters survey the outstanding changes in the foreign trade of the United States over the last eighty years. The remaining chapters deal primarily with the construction of the NBER indexes, appraisals of their quality, and an interpretation of the relations among the several types of indexes.

Chapter 1 sets forth the findings on U.S. export and import prices, and their relation to domestic prices and to the export prices of other countries. It describes the evidence relating to the terms of trade of the United States and the terms of trade of primary and agricultural products. Relations between price and productivity changes are also discussed.

Chapter 2 is concerned mainly with quantity trends in relation to domestic output and to the trade of foreign countries. Possible price-quantity reactions are also explored.

The method by which the NBER indexes were constructed is explained in Chapter 3, and comparisons of Paasche and Laspeyres indexes are used as evidence of the connections between price and quantity changes.

Characteristics of the basic data on export and import quantities and prices are discussed in Chaper 4, with particular reference to the problems involved in using unit value data as prices.

Chapter 5 contains an account of the use of sampling ideas in the construction and appraisal of index numbers and describes estimates of sampling error in the NBER indexes.

Finally the new price and quantity indexes are compared, in Chapter 6, with those of Kreps and the Department of Commerce, as well as with indexes of the Department of Agriculture and the Bureau of the Census.

CHAPTER 1

Trends in Prices and Terms of Trade

Summary View of U.S. Export and Import Prices and Terms of Trade

The history of the international trade of the United States during the last eighty years is divided into three segments by the two world wars. The "prewar period" covers the thirty-five years before World War I. For these years the NBER indexes presented here provide an extensive set of new data. The interwar period covers the twenty-one years from 1919 to 1939. For this segment, we use new NBER data only through 1923; Commerce Department estimates and other series are used for later years. The "postwar period", from 1946 through 1960, is discussed entirely in terms of data compiled originally by others.

In any analysis of long-term trends in this eighty-year period, the treatment of the 1930's poses a difficult problem. For many series, such as the terms of trade and import prices shown in Chart 1, the levels of the 1930's were unprecedented and seem unlikely to recur. Yet, because these years stand nearer to the end than to the beginning of our period, they exert a strong influence on estimated trends. (In the terms-of-trade series, for example, they impart a considerable upward slant to a fitted trend.) For this reason, we have frequently omitted consideration of the interwar period and compared the 1950's directly with the prewar years.

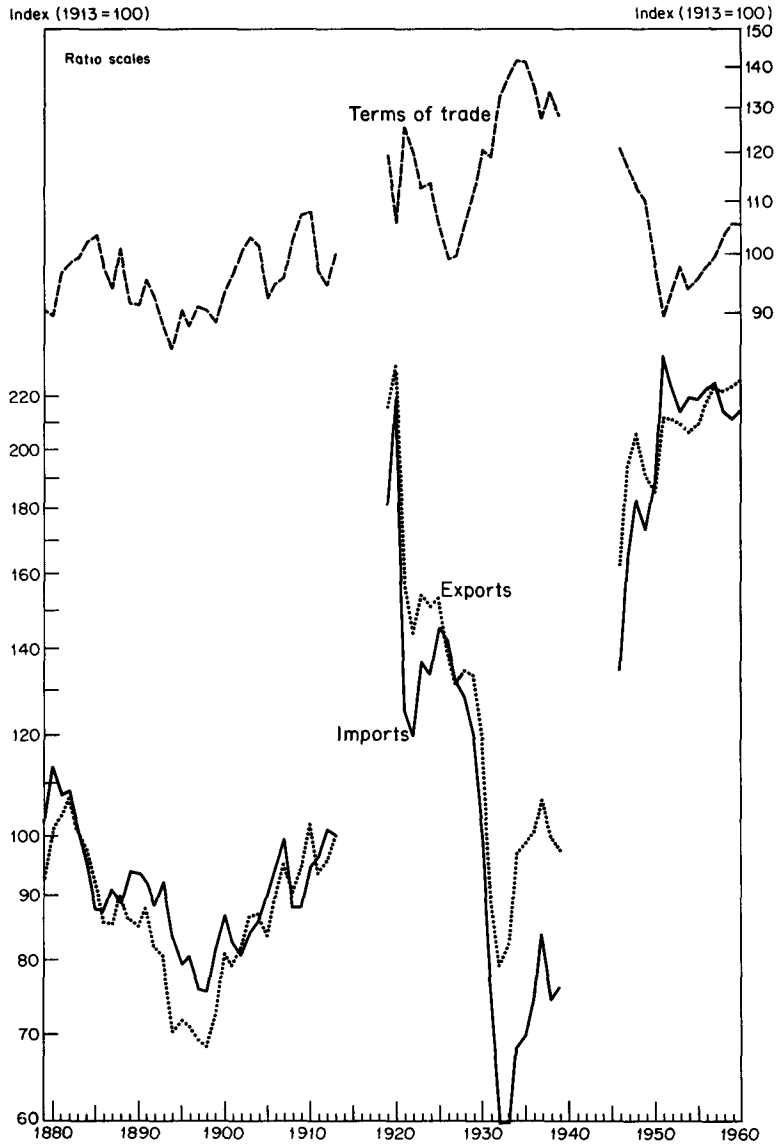
This period should not, however, be ignored completely. Much recent discussion of the terms of trade, ratios of trade to output, and price-quantity relations has been colored by, and can only be understood in terms of, the events of the depression years.

EXPORT AND IMPORT PRICES

In the prewar years, a period of declining prices before 1898 was followed by rising prices up to World War I (Chart 1). No substantial trend for the period as a whole can be discerned, although import prices in 1909-13 were below the level of thirty years earlier. At the end of World War I, and for two years thereafter, prices were far higher than before—in 1920, almost twice the prewar peak for imports and more than twice for exports. After 1920, however, the interwar period was characterized by devastating price declines and comparatively weak recoveries. In the single year 1921, and again in 1931-32, export and import prices fell a distance equal, or almost equal, to the whole range of their prewar fluctuations. The fall

CHART 1

U.S. Export and Import Prices and Terms of Trade



Source: Appendix Tables A-1, A-3, and H-1.

brought import prices in twelve years from the post-World War I peaks to a level substantially below that of the trough in the late 1890's. Even a sharp recovery after 1933 did not carry them much above the prewar low. For exports, the decline in prices was slightly less severe, but they too fell below the prewar average. The recovery in the late 1930's brought export prices back to the level of the higher prewar years.

The end of World War II again found prices far above the interwar levels. In contrast to the earlier experience, it was import prices that had risen the most. In even stronger contrast, the postwar rise was followed, not by a collapse, but by further price increases. These tapered off somewhat or, in the case of imports, were mildly reversed after 1951. The postwar peaks barely surpassed those of the early 1920's but were far above any of the longer-lasting prewar or interwar price levels.

A distinct shift took place also in the relative volatility of export and import prices. Before World War I, export prices underwent sharper fluctuations than imports, reaching a lower trough in the 1890's particularly. After 1918 prices of imports suffered the more violent changes, and continued to do so into the postwar period.

U.S. TERMS OF TRADE

Export and import prices determine the net barter terms of trade which have been the subject of much acrimonious discussion in the postwar period (the controversy is discussed in a later section of this chapter). Despite the suspicion, current since the late 1930's, that the developed countries have experienced very large long-term gains in their terms of trade, little trend can be discerned in the U.S. figures. This is illustrated by the fact that the 1949-58 terms of trade were close to most prewar levels. The average for all the postwar years, however, was slightly higher, and the 1959-60 indexes matched the highest prewar figures. But all except the first few postwar figures are far below the heights reached in the interwar period.

Much more definite changes have taken place in the pattern of short-term movements. The prewar fluctuations in the terms of trade roughly followed those of prices. After rising at first, they fell to a low point in the 1890's (earlier than prices), and then rose again. During World War I, the terms-of-trade index increased sharply, as did the price level; but there the resemblance ended. During both the interwar period and the postwar years, the movement in the terms of trade was closer to being inverse than conforming to the price level, particularly during sharp price fluctuations.

This switch in behavior is a reflection of the fact, mentioned above, that export prices fluctuated more violently than import prices before World War I, and import prices more sharply thereafter.

The greatest fluctuations in the terms-of-trade index took place during the interwar and early postwar period. In several instances, the index covered the whole span of prewar changes within two or three years.

The interwar period was the most "favorable" to the United States in the eighty years considered here. In the mid-1930's, the terms of trade briefly reached 40 per cent above the 1913 level and more than 50 per cent above the trough levels of the 1890's, but these levels were never reached again after World War II.

During World War II and for several years after, the terms of trade shifted sharply against the United States, falling briefly during the Korean War to the level of the 1890's before rising moderately again.

COMPARISON OF NBER AND KREPS INDEXES

The only previously available series on prewar United States foreign trade prices were those published by Kreps in 1926.[1] Our indexes differ substantially from his, as can be seen in Table 1.[2]

For export prices, the two series agree in showing virtually no change between 1880 and 1913. However, the Kreps index shows a rise more than double that of the NBER index between the 1880's as a whole and 1913. In addition, the Kreps index undergoes sharper fluctuations, particularly before 1900, and falls more steeply to the trough in the late 1890's.

TABLE 1
COMPARISON OF KREPS AND NBER INDEXES OF U.S. EXPORT AND IMPORT PRICES AND TERMS OF TRADE
(1913 = 100)

	Fiscal Year 1880		*Average of Fiscal Years 1880–89*	
	Kreps	NBER	Kreps	NBER
Exports	100.0	99.7	91.3	95.9
Imports	131.7	109.3	108.9	98.1
Terms of Trade (E/I)	75.9	91.2	84.2	98.0

SOURCE: Appendix Tables G–1 and H–2.

[1] Theodore J. Kreps, "Export and Import Prices in the United States and the Terms of International Trade, 1880–1914," *Quarterly Journal of Economics*, August 1926, p. 708.

[2] A more detailed comparison of the two sets of indexes and some explanations of the discrepancies between them appear in Chapter 6.

The import price series differ even more radically; the Kreps index exhibits not only wider fluctuations but a much stronger downward trend. It declines by 24 per cent between 1880 and 1913, as compared with 8 per cent for the NBER series; and by 8 per cent from 1880-89 to 1913, when our series actually rises slightly.

These differences in opposite directions for export and import prices make the two terms-of-trade indexes diverge even more widely. Kreps shows a 32 per cent improvement in U.S. terms of trade from 1880 to 1913 and 19 per cent from the decade of the 1880's to 1913. The corresponding increases in the NBER index were 9 per cent and 2 per cent.

If we stretch this comparison, perhaps recklessly, to the 1950's, the Kreps indexes, linked to those of the Commerce Department suggest an improvement in the U.S. net barter terms of trade of about 15 per cent since the 1880's. Our indexes indicate virtually no change.

International Comparisons of Terms of Trade

TERMS OF TRADE OF INDUSTRIAL COUNTRIES

The NBER export and import price indexes for the United States provide new evidence in the controversy over long-run trends in the terms of trade. There are really two questions at issue, and an answer to one does not, as is sometimes assumed, necessarily provide a key to the other.

(1) Have long-run trends in the terms of trade been favorable to developed or industrialized countries[3] and by inference, unfavorable to underdeveloped countries?

(2) Have the terms of trade moved in favor of manufactured goods as compared to primary products? We attempt to develop some evidence on the first question here, and on the second in the next section, but much of the evidence is applicable to both questions.

There is a widely-held belief that the terms of trade have moved in favor of industrialized countries in the long run.[4] It is, therefore, of some interest to review the existing data and to observe the effect of introducing the new U.S. indexes.

One set of comparisons was made by K. Martin and F. G. Thackeray

[3] The terms are not, of course, interchangeable; an agricultural country could well be developed. Most of the comparisons have referred to countries which were both developed and industrialized.

[4] See, for example, United Nations, *Relative Prices of Exports and Imports of Under-Developed Countries,* (New York, 1949), pp. 21–23, where U.K. data are offered as evidence.

in 1948.[5] Of the three industrial nations for which they presented prewar data, Germany showed a decline in the terms of trade and the U.S. and U.K. a rise. The U.S. figures, however, were derived from Kreps' data. A substitution of the NBER indexes would put the U.S. in an intermediate position and shift the results toward a finding that no substantial change had taken place in the terms of trade of industrial countries between 1879 and 1913.[6]

For the interwar period, Martin and Thackeray show improved terms of trade for the U.S., the U.K., and Germany, and a deterioration only for Japan. But the final year of their study was 1938, almost the peak for terms of trade of industrialized countries. Extension of these data to 1960 would wipe out all the gains since 1920 for the U.S. and the U.K. and all since 1925 (the first year shown) for Germany. The U.K. terms of trade would remain, however, considerably above the 1913 level.[7]

Kindleberger's data showed that the improvement in U.K. terms of trade, from which the deterioration in underdeveloped countries' terms of trade had been inferred, was not characteristic of the rest of industrial Europe. For both 1870-1913 and 1870-1952, U.K. terms of trade improved while those of industrial Europe as a whole (including the U.K.) declined.[8] The implication is that there was a considerably larger decline in the terms of trade of continental industrial Europe (CIE).[9]

A positive relationship between stage of development and terms of trade does, however, emerge from other features of Kindleberger's data. The more developed countries within industrial Europe, such as Belgium, Sweden, and Switzerland, improved their long-run terms of trade by comparison with the less developed members of that group, France and Italy.

Kindleberger further found that, in its trade with industrial Europe, the area he calls "all other countries"[10] suffered a major deterioration in terms of trade, by as much as one-quarter between 1872 and 1952. This was the most unfavorable experience among all the areas he distinguished.[11]

[5] *Bulletin of the Oxford Institute of Statistics*, Vol. 10, No. 11, November 1948, pp. 373–398.

[6] Martin and Thackeray classify the United States as a primary producer before 1900 (*Ibid.*, p. 374). It is true that the United States was at that time an exporter primarily of agricultural products, but it was already a developed, industrial country in terms of the distribution of the labor force or of income originating by sector.

[7] These statements are based on our data for the U.S. and on indexes for European countries from Charles P. Kindleberger, *The Terms of Trade: A European Case Study*, New York, 1956.

[8] *Ibid.*, pp. 53–57.

[9] Industrial Europe excluding the United Kingdom.

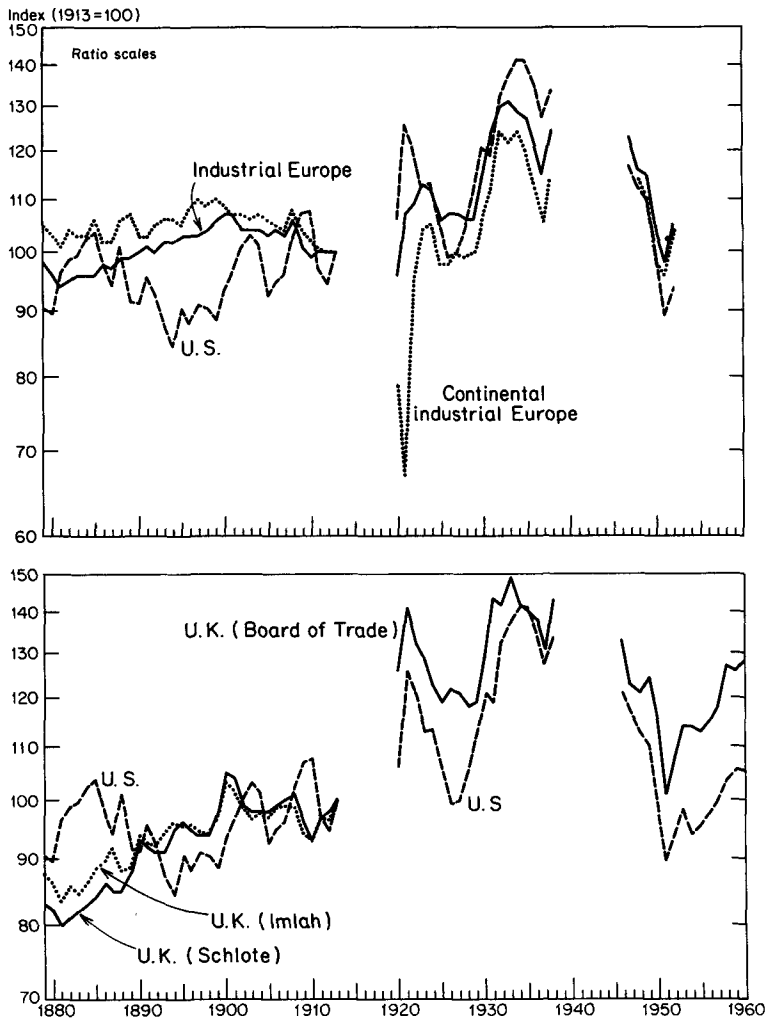
[10] Mostly made up of underdeveloped countries but also including Japan.

[11] Kindleberger, "The Terms of Trade and Economic Development," in *Problems in International Economics*, Special Conference 9, New York, NBER, 1958.

COMPARISONS OF TERMS OF TRADE : U.S. AND OTHER COUNTRIES

Two features stand out in the comparison of U.S. terms of trade with those of the U.K. and with our crude estimates for "Continental Industrial Europe" (CIE) in Chart 2. One is that British terms of trade increased considerably relative to the other two over the period for which they can be compared. The other is that the behaviour of U.S. terms of trade,

CHART 2
Terms of Trade of U.S., U.K., and Industrial Europe



Source: Appendix Tables H-1, H-3, and H-4.

independent of or even inverse to that of Europe before 1920, became quite similar after that date.

Over the whole time span, as was pointed out earlier in this chapter, U.S. terms of trade did not change substantially. Those of industrial Europe rose somewhat, but most or all of this increase disappears if we make a very crude adjustment to remove the U.K. The reason for this effect is clear (see lower half of Chart 2) : British terms of trade rose substantially from 1879 to the end of World War II. From the 1880's to the 1950's they gained by over 37 per cent according to Schlote's index for the period up to 1913—slightly less if Imlah's data are used.[12] The largest gains in the U.K. index, relative to CIE and the U.S., came in the prewar period and during World War I. The end of the war found U.K. terms of trade 20 per cent higher than in 1913, and those of CIE, 20 per cent lower.[13]

In the short-run behavior of U.S. terms of trade, a sharp shift may be noted. In the prewar years, as was pointed out earlier in this chapter, they moved with prices and were roughly inverse to the terms of trade of the U.K. and CIE. They reached a peak in the 1880's (but later than the trough in the other series) and a trough in the 1890's (earlier than the peak in the others). After World War I, when U.S. terms of trade became inverse to price changes, they conformed well to both British and CIE terms of trade. It might be said that the trade pattern matured, developing from one that is characteristic of a primary goods exporter to one characteristic of a nation exporting manufactured products.

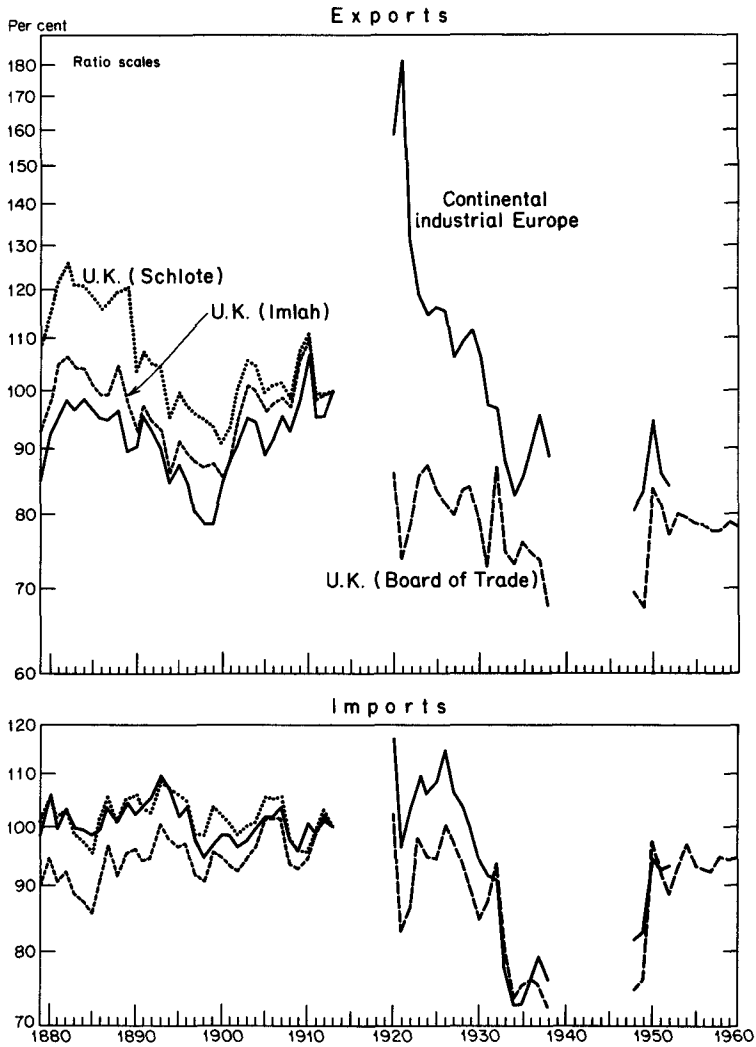
The terms of trade may be resolved into export and import price components which are shown in Chart 3. After 1913, the rise in U.K. trade terms in relation to those of the U.S. is seen to be mainly on the export side, where American prices fell by 20 per cent relative to British prices. For the prewar period, there are two explanations for the behavior of U.K. terms of trade. In Schlote's estimates, most of the change relative to the U.S. (and to CIE as well) took place on the export side of the account; U.S. export prices fell by roughly 15 per cent relative to British prices between the 1880's and 1913. Imlah, on the other hand, finds U.K. export prices keeping pace with those of the U.S. over the same periods, and rising only slightly by comparison with CIE.

[12] Werner Schlote, *British Overseas Trade from 1700 to the 1880's*, Oxford, 1952, and Albert H. Imlah, *Economic Elements in the Pax Britannica*, Cambridge, Mass., 1958.

[13] There are some peculiarities in the CIE index in the first few years after World War I. Germany does not appear to be included in 1920 and then apparently enters at very low export-price and terms-of-trade levels in 1921 and 1922. See Kindleberger, *Terms of Trade*, pp. 13 and 23.

CHART 3

Ratio of U.S. Export and Import Prices to Those of the U.K. and Continental Industrial Europe
(1913 ratio = 100)



Source: Appendix Tables H-5 through H-8.

For imports, Schlote's estimates show the U.K.'s prices moving with those of both the U.S. and CIE, while Imlah's data show them falling relative to both by about 6 per cent. Both authors agree, however, in finding considerable improvement in U.K. terms of trade—Schlote, a somewhat greater one.

If U.S. prices are compared with those of CIE, they show a fall in both exports and imports with, perhaps, a slight relative decline in U.S. terms of trade.

To summarize, among the three industrialized areas compared, only one —the U.K.—showed evidence of substantial gains in its terms of trade. Neither our new indexes for the U.S. nor Kindleberger's data for continental industrial Europe confirm the belief that industrial countries as a whole have enjoyed large improvements in their trade terms since the 1870's or 1880's. The experience of the U.K. cannot be taken as typical of developed countries.[14]

Prices of Primary and Manufactured Products

OTHER STUDIES

The conviction has been widespread in the last twenty years that, compared to prices of manufactures, primary product prices inexorably decline in the long run and that they have, in fact, declined by a substantial amount since the 1870's or 1880's. This idea has become widely accepted despite its contradiction of the classical belief, dating back at least to Robert Torrens, that "the exchange value of manufactured articles, compared with the products of agriculture and of mines, have, as population and industry advance, a certain and decided tendency to fall."[15]

It was noted, during the British debate over the terms of trade in the 1920's, that the operation of this "law" seemed to have been suspended at

[14] Robert E. Baldwin in "Secular Movements in the Terms of Trade," *American Economic Review*, No. 2, May 1955 (Papers and Proceedings), suggests that differences in the type of index number used are sources of bias or of divergent interpretations. During the period covered by the NBER indexes, however, the U.S. terms of trade calculated from Laspeyres indexes diverged greatly from those calculated from Paasche indexes only during World War I. The difference between them widened from 2.5 in 1879 to 4.7 in 1923 (1913 as 100).

[15] John Stuart Mill, *Principles of Political Economy*, New York, 1909, Vol. II, Book IV, Chapter 2, p. 282.

The history of the debate over this proposition is reviewed extensively by Walt W. Rostow in *The Process of Economic Growth*, New York, 1952, pp. 173 and 182–192, and by J. M. Letiche, "The Relevance of Classical and Contemporary Theories of Growth to Economic Development," *American Economic Review*, May 1959.

various times, such as during the 1890's. But the fundamental tendency toward declining relative prices of manufactures was challenged only to the point of suggesting that agricultural productivity might possibly keep up with that of manufactures indefinitely. The participants in the argument generally assumed that relative productivity trends were the key to price trends.

It was Folke Hilgerdt who first turned the classical proposition upside down. He argued that, in the sixty years before 1938, primary product prices had fallen relative to prices of manufactures and that "the general trend of the relative movements . . . of the prices of these two classes of goods can scarcely be doubted."[16] The evidence for this contention consisted of League of Nations indexes for primary product and manufactured goods prices.[17] These, for the period before 1929 when most of the apparent fall in the relative prices of primary goods took place, rested entirely on two indexes: one, a combination of Schlote's indexes for British exports and imports of manufactures; the other, for primary products, the Sauerbeck wholesale price index.[18]

The theme of declining relative prices for primary products was taken up after the war in a series of United Nations documents.[19] None of these were primarily concerned with the prewar period; they treated the long-term deterioration in primary product prices as an established fact, relying on Hilgerdt and Schlote.

The view that primary producers have suffered from deteriorating terms of trade has been challenged, on both the facts and their interpretation. We shall not deal with the questions of interpretation except in discussing U.S. productivity trends in the next section of this chapter. Haberler, Viner, and Baldwin have pointed to the likelihood that price indexes of manufactures are biased upward because of the neglect of

[16] League of Nations, *Industrialization and Foreign Trade*, 1945, p. 16. It is ironic that, despite the classical tradition on this question, the only opposing view that Hilgerdt mentioned was that of the protectionist theorist, Manoilesco.

[17] *Ibid.*, p. 157.

[18] *Ibid.*, p. 154. The Schlote indexes appear in *British Overseas Trade*.

[19] For example, *Relative Prices of Exports and Imports of Underdeveloped Countries*, 1949, pp. 21–24, and several publications of the Economic Commission for Latin America, particularly *The Economic Development of Latin America and its Principal Problems* [by Raul Prebisch], 1950, pp. 8–10.

[20] Jacob Viner, *International Trade and Economic Development*, Glencoe, Ill., 1952, p. 143; Robert E. Baldwin, "Secular Movements in the Terms of Trade," *American Economic Review*, No. 2, May 1955 (Papers and Proceedings); Gottfried Haberler, "Introduction," in *Problems in International Economics*, pp. 73–81; and *International Trade and Economic Development*, Cairo, National Bank of Egypt, Fiftieth Anniversary Commemoration Lectures, 1959.

quality changes and underrepresentation of new commodities.[20] The same authors have made the additional point that one cannot, by simply inverting a country's terms of trade, derive the terms of trade for its partners. When exports are reported in trade statistics on an f.o.b. basis (excluding, among other things, freight costs) and imports are reported c.i.f. (including freight costs), as is the case with the U.K., it is possible for the terms of trade, measured in home prices, to improve for both countries simultaneously. The necessary condition for such an outcome is a fall in shipping costs relative to prices; this does seem to have occurred during the nineteenth century.[21]

We have already mentioned the likelihood that U.K. export prices and terms of trade, particularly in Schlote's data, were biased upward as a measure of the experience of industrial nations generally. Kindleberger[22] found no clear trend in the terms of trade of primary products vs. manufactures and suggested that the large country and product dispersion in the price indexes made the question almost meaningless.

A recent study by Theodore Morgan,[23] which examined prices of manufactured and agricultural products in seven countries, concluded that there was great diversity of experience but no evidence of declining relative prices for agricultural commodities.

From a review of Kindleberger's data, combined with U.S. price indexes for the period since 1913, Sarah S. Montgomery found signs of improvement rather than deterioration in world terms of trade for primary products.[24] This was especially the case when they were measured in terms of prices within primary producing countries. The decline in freight rates relative to commodity prices tended to make the price relationships in the industrial countries (where imports were valued c.i.f.) appear less favorable to the primary producers than they really were. In other words, at least part of the decline in relative prices of primary product imports represented a fall in transport costs rather than a decline in the return to the primary producer.

[21] See P. T. Ellsworth, "The Terms of Trade Between Primary Producing and Industrial Countries," *Inter-American Economic Affairs*, Vol. X, Summer 1956. Data on freight rates appear in Douglass North, "Ocean Freight Rates and Economic Development," *Journal of Economic History*, Dec. 1958, and in Sarah S. Montgomery, "The Terms of Trade of Primary Products and Manufactured Goods in International Trade, 1870–1952," unpublished Ph. D. dissertation, University of Wisconsin, 1960.

[22] *Terms of Trade*, p. 263, and "The Terms of Trade and Economic Development," pp. 73–81.

[23] "The Long-Run Terms of Trade Between Agriculture and Manufacturing," *Economic Development and Cultural Change*, October 1959.

[24] "The Terms of Trade of Primary Products."

EVIDENCE FROM NBER DATA

The NBER export and import price indexes may be viewed as a new set of observations bearing on the relative prices of manufactured and agricultural or primary products entering into international trade. Four measures of this relationship are described in Chart 4 and Appendix Table H-9.

The clearest trends relate to U.S. agricultural exports. Between the 1880's and the 1950's, the purchasing power of manufactured imports (foreign manufactures) over American exports of farm products fell by 20 per cent or more, mostly between the middle 1890's and the 1920's. Since then there has been no clear secular trend. Within U.S. exports, the change has been more violent: the price of manufactured products declined by almost half, in comparison with agricultural products. Here too, the largest drop came after 1894; another large fall during World War II was only partially reversed afterward.

Although the purchasing power of U.S. manufactured exports over agricultural imports rose during the 1930's to heights 60 to 90 per cent above 1879 or 1913, it has since declined to the point where no definite trend can be identified. The 1950's as a whole show some deterioration compared with the 1880's and 1913—in fact, with the whole prewar period. But the levels of the ratio for 1879-81, 1913, and 1958-60 are almost identical, and the verdict must be—probably no change, possibly a slight decline.

Only within imports do manufactured goods prices exhibit a relative gain. Manufactures imported into the U.S. increased in price by about 25 per cent between the 1880's and the 1950's, compared with foreign agricultural products. The gain took the form of a substantial increase before World War I followed by a great jump during the war and in the 1930's and then a retreat to the level of the 1920's.

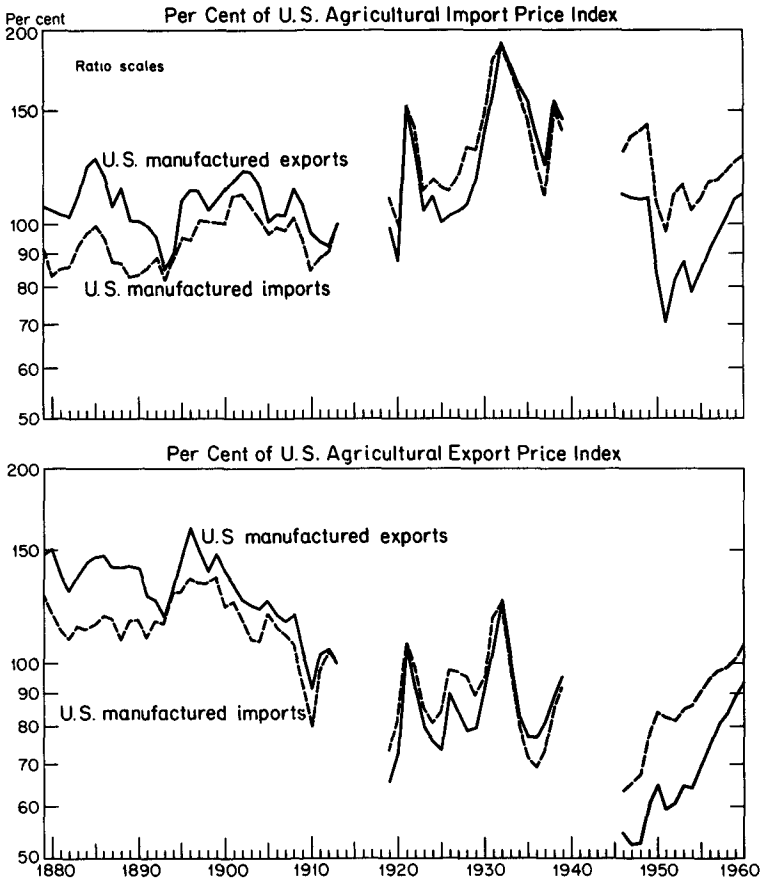
Two price relationships are implied, but not stated, in these indexes. One was a great decline in the ratio of export to import prices of manufactured goods (from 1.24 in the 1880's to .78 in the 1950's);[25] the other was a large increase in the ratio of export to import prices among agricultural products—from .79 in the 1880-89 decade to 1.25 in 1950-59.

Not all primary products are agricultural, and the proportion which is has undoubtedly fallen over the last eighty years within both exports and imports. For the years through 1923, in addition to the index for finished manufactures, we have an NBER index for "all commodities other than manufactures"—a broad definition of primary products. But for the later

[25] From 1951 to 1959, however, there was a steady rise, pausing only in 1954.

CHART 4

Ratio of Manufactured to Agricultural Product Prices (1913 ratio = 100)



Source: Appendix Table H-9.

years, there is no similar index available. The direction of change in the ratio of manufactured to primary product prices can be calculated, however, by comparing manufactured to total export and import prices; the relation to total primary product prices would always be in the same direction, but stronger.

This comparison is made, using only prewar and postwar data, in Table 2. On the export side, the relation with agriculture is confirmed. U.S. export prices for manufactures fell by more than one quarter with

respect to both total export and total import prices, and thus even further with respect to primary prices.

For manufactured imports, however, prices rose by about 15 per cent compared with total prices on both sides of the trade account between the 1880's and the 1950's.

Until 1913, the comparison of manufactures with total trade confirmed the results of the comparison with agricultural product prices almost exactly. Manufactured exports fell substantially in price relative to total exports and imports, while manufactured imports hardly changed relative to total U.S. exports and rose very slightly in price only by comparison with total U.S. imports.

TABLE 2

RELATION BETWEEN MANUFACTURED PRODUCT AND TOTAL EXPORT AND IMPORT PRICES, FIVE YEAR AVERAGES
(1913 = 100)

	Price Index for Manufactured Exports as Per Cent of Price Index for:		*Price Index for Manufactured Imports as Per Cent of Price Index for:*	
	Total Exports	Total Imports	Total Exports	Total Imports
1879–83	122.8	116.6	102.1	96.9
1884–88	125.4	125.2	99.4	99.2
1889–93	116.4	106.7	102.0	93.5
1894–98	125.7	111.5	114.2	101.4
1899–03	118.9	114.6	108.1	104.3
1904–08	110.7	107.7	102.8	100.0
1909–13	100.7	101.9	94.4	95.6
1949–53	87.7	85.2	116.8	113.5
1954–58	90.4	88.6	113.3	111.0
1959–60	95.9	101.3	109.9	116.1

SOURCE: Appendix Tables A–1 and A–3.

These shifts are investigated further by breaking down primary product prices into their four components: crude and manufactured foodstuffs, crude materials, and semimanufactures (Table 3). Manufactured exports and imports are compared with eight export and import primary classes. In relation to four of them, manufactured exports became a great deal cheaper—by almost 50 per cent. In the remaining four comparisons, three primary product classes rose somewhat in price relative to manufactured exports between the 1880's and the 1950's and one showed practically no

change. By 1959-60, however, all four had fallen slightly below the level of the 1880's. Manufactured imports rose in price relative to four groups and fell relative to the other four; the rises were generally stronger than the falls.

Before 1913, relative prices of manufactures clearly declined. U.S. exports of primary products rose in price compared to exports and imports of manufactures in all eight comparisons and U.S. imports of manufactures fell in price in five out of eight. Since 1913, manufactured imports have risen in price relative to seven out of eight primary product classes. Manufactured exports have gained compared to four primary classes and lost in comparison with four others.

What conclusion can now be reached regarding the terms of trade between primary and manufactured commodities? For the period before 1913, the weight of evidence indicates declining terms of trade for manufactured goods. This is particularly clear for American manufactures but also appears true for foreign manufactures. Over the whole eighty years the picture is not quite as clear. U.S. exports of manufactures declined in price relative to total primary imports and exports and to agricultural exports; compared with agricultural import prices, they changed very little, possibly falling slightly. Imported manufactures fell in price relative to U.S. agricultural exports but rose compared with total primary product imports and exports and agricultural imports.

In summary, comparisons with exports of U.S. manufactures strongly contradict the belief in declining relative primary product prices; comparisons with manufactures imported into the U.S. mildly confirm it. On the whole, there seem to be more instances of primary products relatively gaining in price than losing. The scatter around the relationships among totals is large, and supports Kindleberger's view that the primary vs. manufactured product distinction is not a particularly useful one for the analysis of changes in terms of trade.

We have used the terms "favorable change" or "favorable direction" frequently as a synonym for a rise in prices. From the cases mentioned, however, it should be clear that rising prices were often not really favorable to the producers concerned. Some instances clearly represented producers who were losing their world markets, perhaps because their productivity was lagging behind that of industries or countries with "unfavorable" changes in prices or terms of trade. Some evidence on the effect of productivity movements is discussed in the next section of this chapter, and Chapter 2 deals further with the interrelationships of price and quantity change.

TABLE 3

RELATION OF MANUFACTURED TO PRIMARY PRODUCT PRICES, BY ECONOMIC CLASS, 5-YEAR AVERAGES

	Manufactured Products Price Index as % of Price Index For:			
	Crude Foodstuffs	Manufactured Foodstuffs	Crude Materials	Semi-Manufactures
U.S. Exports of Manufactures and Imports of Primary Products				
1879–1883	113.1	82.4	124.3	148.5
1884–1888	113.1	105.0	131.7	153.9
1889–1893	82.2	82.2	124.6	133.1
1894–1898	92.6	97.1	123.5	138.8
1899–1903	139.8	102.4	112.2	118.7
1904–1908	131.9	96.5	103.0	108.9
1909–1913	108.5	89.4	97.7	107.6
1949–1953	48.4	92.5	112.7	82.4
1954–1958	46.9	99.1	125.9	82.4
1959–1960	65.5	108.7	138.0	94.0
U.S. Exports of Manufactures and Exports of Primary Products				
1879–1883	122.8	133.0	145.7	140.4
1884–1888	132.4	138.5	144.2	135.0
1889–1893	117.5	125.6	134.6	123.6
1894–1898	126.2	129.7	159.6	126.2
1899–1903	122.6	125.4	137.9	110.5
1904–1908	112.4	120.8	120.1	101.2
1909–1913	96.8	99.5	101.8	102.3
1949–1953	95.8	103.4	74.4	82.8
1954–1958	120.5	117.1	81.9	80.9
1959–1960	136.8	140.0	95.6	91.2
U.S. Imports of Manufactures and Exports of Primary Products				
1879–1883	102.1	110.5	121.1	116.7
1884–1888	104.9	109.8	114.3	107.0
1889–1893	102.9	110.0	117.9	108.3
1894–1898	114.7	117.9	145.1	114.6
1899–1903	111.6	114.1	125.5	100.5
1904–1908	104.4	112.2	111.6	94.0
1909–1913	90.8	93.3	95.5	95.9
1949–1953	127.5	137.7	99.1	110.3
1954–1958	151.0	146.8	102.7	101.4
1959–1960	156.7	160.4	109.5	104.5
U.S. Imports of Manufactures and Imports of Primary Products				
1879–1883	94.0	68.5	103.3	123.4
1884–1888	89.6	83.2	104.4	122.0
1889–1893	72.0	72.1	109.2	116.6
1894–1898	84.2	88.3	112.2	126.1
1899–1903	127.2	93.1	102.1	107.9
1904–1908	122.6	89.6	95.7	101.2
1909–1913	101.8	83.8	91.6	100.9
1949–1953	64.4	123.1	150.0	109.8
1954–1958	58.8	124.2	157.8	103.2
1959–1960	75.1	124.6	158.2	107.7

SOURCE: Appendix Tables A–1 and A–3.

Price and Productivity Changes

Great divergences among price trends for different classes of commodities are among the central facts of economic history. Upon the interpretation of these trends rest many of our explanations for the growth and decline of nations, classes, and industries, and for the enrichment of one class or nation and the impoverishment of another.

One such interpretation (often referred to as the Singer-Prebisch thesis)[26] is based on the belief, discussed earlier, that the terms of trade of primary products vis-à-vis manufactured goods have deteriorated over the long run,[27] and that these trends have led to a widening of the gap in real income between primary and manufactured goods producers.[28] Crucial to this conclusion is the conviction that productivity changes have not been responsible for the deterioration in primary products' terms of trade—that in fact, they have tended in the opposite direction.

A great deal of data on productivity by sectors in many countries would be required to investigate thoroughly the influence of productivity changes on international price relationships. We have made no attempt to collect such data, and much of the necessary information is probably not available. But the development and refinement of productivity measures for various sectors of the American economy offer opportunities for analysis of price changes within American exports. We have, as an experiment, examined the long-term decline in the prices of U.S. exports of manufactures relative to those of U.S. exports of agricultural products.[29] A comparison of available productivity data with the list of export indexes in Appendixes A to C would probably suggest other candidates for investigation.

[26] See, for example, H. W. Singer, "The Distribution of Gains Between Investing and Borrowing Countries," *American Economic Review*, May 1950, pp. 477–478, and *The Economic Development of Latin America.*

[27] An alternative version of the thesis emphasizes the terms of trade of underdeveloped countries vis-à-vis the more advanced countries, which is not necessarily the same question, as Kindleberger and Singer himself have pointed out. Singer later stated a preference for the second version, "my original emphasis was too much on primary commodities and their characteristics and not enough on underdeveloped countries and their characteristics." (Comment on Kindleberger's "Terms of Trade and Economic Development," p. 88).

[28] Just as it is crucial to arguments for agricultural price parity programs within the industrial countries which attempt to keep parity ratios constant over long periods of time.

[29] Our findings regarding price changes within U.S. exports would not necessarily apply, of course, to changes between export and import prices or within imports. But Singer, in the comment on Kindleberger's paper quoted above, hints they are related: "I gladly accept this shift in emphasis (from primary products to underdeveloped countries) even though it leaves the chronic troubles of the primary producers within the industrial countries to be explained" (*ibid*).

As can be inferred from the preceding section of this chapter, the net barter terms of trade for agricultural and manufactured exports[30] showed very different trends (Chart 5). The purchasing power of agricultural exports rose by about 50 per cent between the 1880's and the interwar period, fluctuated around the interwar level during the early 1950's, and then declined to roughly 30 per cent above the 1880's level. The purchasing power of manufactured exports over imports, on the other hand, fell by 15 to 20 per cent before World War I, climbed to a peak in 1932, and then declined again to a postwar average below that of 1913. Only in 1959-60 did it regain the 1913 level.

It would be wrong, of course, to read into these figures a decline in welfare for the producers of manufactured products (measured in terms of ability to purchase imports). For this we would wish to know, not the purchasing power of a unit of output, which we have measured, but purchasing power per unit of input. This is estimated as the product of the net barter terms-of-trade index and a productivity index. It represents, for each of the two sectors, Viner's "single factoral terms of trade."[31]

We calculated this measure from the NBER and Commerce export and import prices indexes and Kendrick's indexes of output per manhour and total factor productivity.[32] These last take account not only of manhours worked but also of capital employed and, in the case of manufacturing, of changes in the composition of the labor force.

The results of this computation (Chart 5) give a far different impression from that implied by the net barter terms of trade. In terms of inputs, the purchasing power of both agricultural and manufacturing factors of production increased greatly. In the 1950's, it was four to five times the initial level, measured by output per manhour, and three to four times as high, measuring by "total factor productivity." The growth of purchasing

[30] We refer here to the ratio of their prices to total import prices or, in other words, their purchasing power over imports in general.

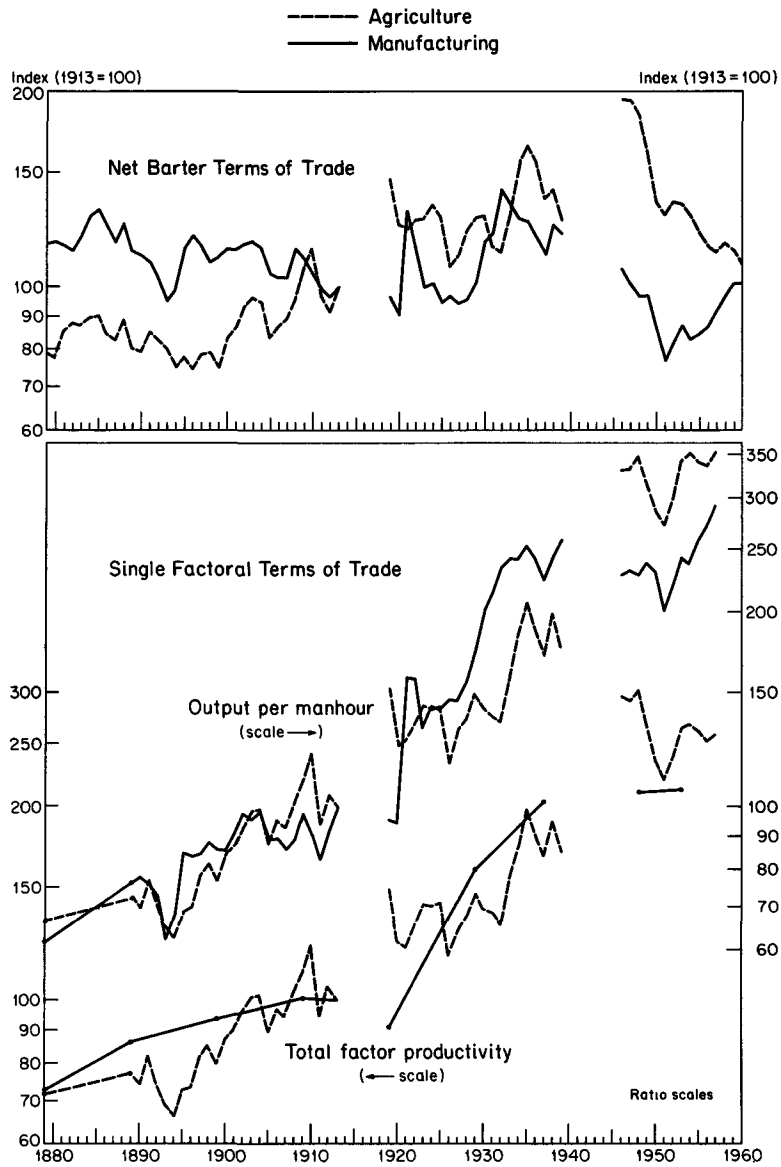
[31] Jacob Viner, *Studies in the Theory of International Trade,* New York, 1937, pp. 558–559.

[32] John W. Kendrick, *Productivity Trends in the United States,* Princeton for NBER, 1961, Appendixes B and D. Many doubtful aspects of this computation spring to mind immediately. For one thing, manufacturing and agriculture, as industries, do not coincide with what we call manufactured and agricultural exports. The main culprit in this incomparability is the class of manufactured foodstuffs, most of which we class as agricultural even though part of their value has been added in manufacturing and they are included in the manufactured products productivity index. Their price behavior, however, was similar to that of crude foods.

Weighting is another problem. The appropriate productivity indexes for such a computation would have export rather than domestic weights. There are also differences in valuation; a good part of the value of many exports, as reported in our data, was added by the transportation industry as well as by others which intervene between the producer and the exporter.

CHART 5

Terms of Trade for Agricultural and Manufactured Products: Ratios of Export Prices and Export Value per Unit of Factor Input to Total Import Prices



Source: Appendix Tables H-14, H-15, and H-16.

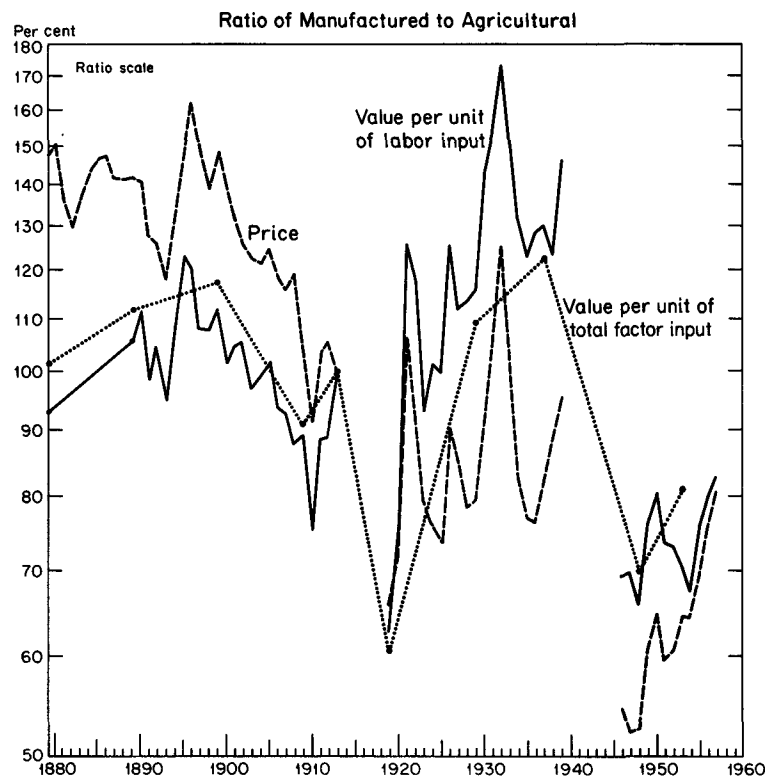
power over imports by manufacturing factors of production was quite similar to that for agricultural factors, although the latter retained some advantage.

These price and productivity relations can be examined from a slightly different viewpoint. We may ask how much of the very great decline in price of manufactured exports relative to agricultural exports can be accounted for by productivity differentials?

Chart 6 gives the answer to this question. The total relative decline in price of manufactured exports was approximately 50 per cent between the 1880's and the 1950's. Of this, roughly 30 per cent was accounted for by differential productivity movements. The other 20 per cent could be said to be the real gain in purchasing power of the agricultural factors

CHART 6

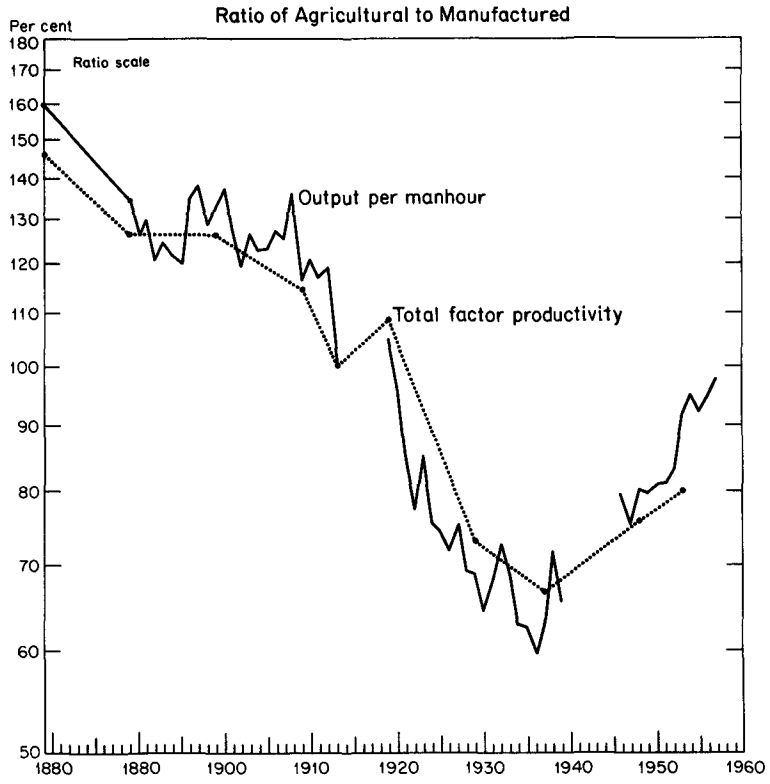
Relation of Manufactured to Agricultural Prices, Productivity, and Values per Unit of Input
(1913 ratio = 100)



over the factors used in manufacturing production. If we compare the 1880's with 1913, all of the 25-30 per cent fall in purchasing power of manufactures can be explained by productivity differentials, measured by output per manhour; about two-thirds of it can be explained by using total factor productivity. Most of the unaccounted for long-term decline in the price ratio took place after 1913. This decline might represent the overstatement in agricultural productivity involved when only labor inputs are used, since there has been such a great increase in capital intensity in agriculture. To some extent, the price ratios may reflect the effects of U.S. price support policies in keeping up agricultural prices and terms of trade, or they may be affected by changes in inputs not covered by the indexes.

Since the end of World War II, there seems to have been some reversal

CHART 6 *(Concluded)*



Source: Appendix Tables H-9, H-17, and G-7.

of the long-term trends; manufactured goods prices have been gaining on agricultural export prices. This too is in line with productivity movements; output per manhour has recently been growing more rapidly in agriculture than in manufacturing.

We conclude then—to the extent that one can draw a conclusion from so crude a test—that differences in the rate of increase in productivity between manufacturing and agriculture, particularly before World War I, account for most of the long-run decline in price of manufactured goods relative to agricultural products within U.S. exports.[33]

The "ratios of value per unit of input"[34] in Chart 6 are informative in another respect. They reveal the severity of the depression of the 1930's for agriculture much more clearly than do the price ratios. The price ratio between agricultural and manufactured products turned sharply against agriculture after 1929, but it remained considerably more favorable than before 1900. The ratios of value per unit of input, however, were more unfavorable to agricultural factors in the 1930's than at any other time in the period covered here. They were far worse than in the depths of the depression of the 1890's, and the short-term swings were far larger than any conceivable estimate of the trend.[35]

Relation of Foreign Trade Prices to Domestic Prices

For the analysis of shifts in the flow of trade or the balance of payments, one is often interested not so much in absolute changes in export and import prices as in their relation to the domestic price level. In both exports and imports, a single large shift in this relationship occurred more than thirty years ago and has not been reversed.

Before World War I, the ratios of export and import prices to domestic prices[36] fluctuated within a narrow range (Chart 7). Both exports and imports exhibited a slight downward trend with respect to domestic

[33] Kendrick found (*ibid.*, Chapter 7) that productivity and price changes were highly correlated within manufacturing—productivity accounting for half or more of the variation in price movements.

[34] These ratios are, to some extent, analogous to Viner's "double factoral terms of trade."

[35] Singer has recently laid heavier stress on the importance of cyclical swings in prices and import earnings as compared to secular trends, in *Problems in International Economics*, pp. 85–86.

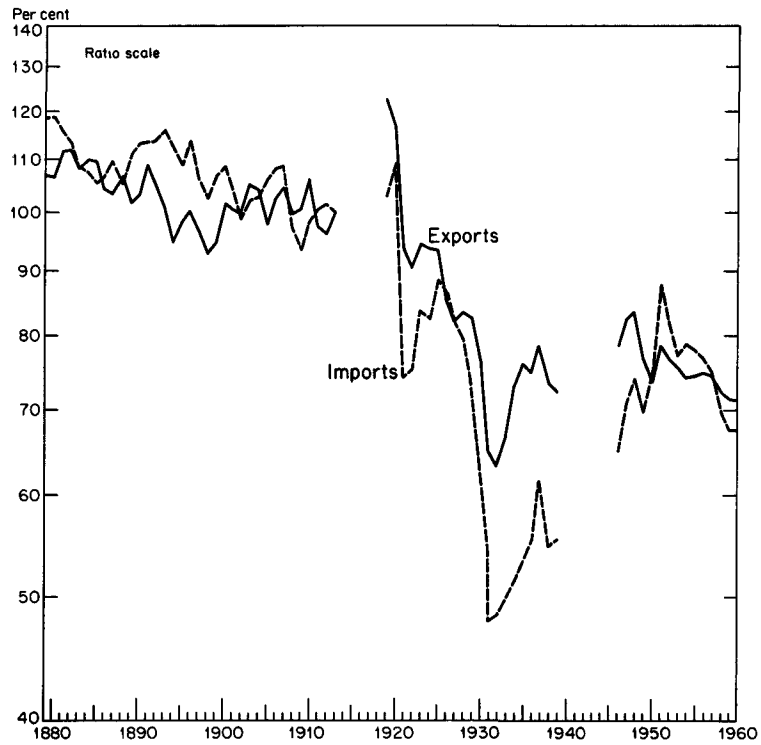
[36] For domestic prices, the implicit price index underlying GNP was used. Experiments were performed with variants, such as the index underlying the flow of goods to consumers plus gross producer durables, which, by virtue of its omission of services, might be considered more comparable to merchandise trade. The results were so similar to those using GNP that they have not been presented here. Some use is made of a variety of measures of domestic output, however, in Chapter 2.

prices, but at least part of the trend was a result of differences in index number construction.[37]

The first year of peace found export prices 10 per cent above their prewar ratio to domestic prices, and import prices 10 per cent below. By the early 1930's, both sets of ratios had fallen about 35 per cent below the 1919 levels. Since then, neither exports nor imports have reached more than 80 per cent of the 1913 price ratio, except briefly, and both have hovered between 70 and 80 per cent through most of the postwar years.

CHART 7

Ratio of Export and Import Prices to Domestic Prices (1913 ratio = 100)



Source: Appendix Tables H-18 and H-19.

[37] The domestic price index is a Paasche price index, derived by dividing what is, in effect, a value index by a Laspeyres quantity index. The foreign trade indexes are Fisher "ideal" index numbers. If, for the period before World War I, we substituted our Paasche price indexes for the Fisher indexes, the downward relative trend in export prices would disappear and the relative decline in import prices would diminish considerably.

Neither export nor import prices have risen far enough to approach even the lowest points in their prewar relations to the domestic price level.

This decline in foreign trade prices could be explained in two ways. It is conceivable that there was considerable divergence between home and export or import prices for individual commodities. Alternatively, commodities that have fallen relatively in price might have greater importance in international trade than in the domestic economy.

The first explanation would be contrary to theoretical expectations regarding competitive markets. Furthermore, our experiments with prewar data (reported in Chapter 4) suggested that export and import prices conform closely to domestic prices where comparisons can be made. On the other hand, these measures covered neither the interwar period, when the largest discrepancies in the indexes appeared, nor the postwar programs for disposal of surplus farm commodities. The latter are likely to have caused some decline in export as compared to domestic agricultural prices.

At least one theoretical consideration might lead us to expect a heavier weight in international trade than in domestic trade for commodities with relatively declining prices. Exports and imports may contain a smaller proportion of what might be called "sheltered" commodities and services—items such as heavy building materials and certain types of personal and business services for which it is difficult to shift to foreign sources of supply when domestic prices rise. In other words, it seems likely that elasticities of substitution, for a single country's production, are higher on the average within international commodity trade than within the domestic economy. As a result, the composition of a country's international trade could be expected to shift more quickly than the composition of its domestic output towards items whose prices are declining relatively. This characteristic by itself would tend to lead to a decline in export and import prices relative to domestic prices.

The ratio of foreign trade prices to the GNP deflator is shown in Chart 8 for manufactured and agricultural products. The strongest force behind the downward trend is seen to be manufactured export prices, which fell by half relative to the domestic price level. Both manufactured and agricultural import prices also declined relatively, while prices of agricultural exports underwent large short-term fluctuations with no distinct trend. Prices of agricultural exports have been declining in most of the peacetime years since 1913, but large jumps during the two World Wars canceled out the years of decline.