THE
QUARTERLY JOURNAL
OF
ECONOMICS

AUGUST, 1932

THE THEORY OF INTERNATIONAL VALUES

SUMMARY

The problem of reciprocal demand, 582.— Advantage of variety of exports, 586.— Gains of large and small countries, 589.— Influence of demand for foreign products, 595.— Elasticity of demand, 600; of supply, 607. — The case of India, 610. — Long-run and short-run factors, 612. — Conclusion, 616.

In an article published in this Journal nearly a decade ago[1] I attempted, with respect to the determination of international values, to develop certain principles which deviated rather widely from generally accepted doctrine. The article received a generous appreciation in Professor J. W. Angell's invaluable Theory of International Prices.[2] To Professor Angell, however, my argument seemed to turn primarily on the question of relative benefits from foreign trade. In this opinion I cannot concur. The very heart of the article was, in fact, a demonstration that the terms of international exchange are established not in the way posited by the neoclassical school but through the play of indirect, or "linked," competition,[3] on the basis of opportunity cost. It was at that time my impression that the orthodox theory was, in its essence, fallacious and should be discarded, tho I did not then

1. "The Theory of International Values Reëxamined," Quarterly Journal of Economics, xxxviii, 54–86.

2. Harvard Economic Studies, vol. xxviii.

3. I am indebted for the phrase to a former student and colleague of mine, Professor C. R. Whittlesey of Princeton University. See his article, "Foreign Investment and the Terms of Trade," Quarterly Journal of Economics, xlvi, 460–63.

express myself in terms nearly so emphatic. The general outlines of an alternative, and I believe better, theory, having been set forth in the article cited, need not here be repeated. I propose at the present writing rather to bring out more fully certain inconsistencies and contradictions in the neoclassical approach and to expose what I conceive to be the vital defects of the orthodox doctrines.[4]

The accepted theory of international values turns on reciprocal national demand for foreign products and its central error lies in the assumption that, following lines of an assumedly *fixed* comparative advantage, a given group of commodities forms the "natural" exports of any one country and another group its "natural" imports. The fact is, however, that the line of comparative advantage for any country is a *moving* line and that, within all but the widest possible limits, commodities may pass from the category of exports of any given country to that of imports, or vice versa, and, *a fortiori*, may simply cease to be exported or imported.[5] The line of comparative advantage, moreover, and therefore the composition of the export and import lists of any country, shifts in response to changes in the terms of trade, that is to say, to changes in international values. It is, in consequence, impossible to determine international values on the premise of a fixed composition of export and import schedules of the several countries reciprocally concerned. In taking this premise the neoclassical writers[6] are, in fact, implicitly

4. The present discussion is to some extent inspired by an interesting article by Otto Frhr. von Mering in the April 1931 issue of Archiv für Sozialwissenschaft und Sozialpolitik on "Ist die Theorie der internationalen Werte widerlegt." The article in question is an ostensible defence of the orthodox theory and an attack on my own position. In many respects, however, von Mering concedes the validity of my argument and, if he would so permit, I should be glad to welcome him as a colleague in the reformulation of the theory of international values.

5. This fact which, in regrettable ignorance, I thought I had been the first to emphasize, was fully developed nearly three quarters of a century ago by J. C. E. von Mangoldt in his Grundriss der Volkswirtschaftslehre.

6. The expression is used to cover writers in the classical tradition beginning with John Stuart Mill. The orthodox theory of international *values* goes back no farther than Mill.

assuming the very ratio of interchange of products which they are trying to discover, since the premise can be valid only on the supposition of *some* definite ratio of interchange. This defect in logic not only completely vitiates the general theory of international values which they set up, but it also renders useless for this, tho not for another, purpose, the whole geometrical and algebraic supplement to the theory which reached its apogee, perhaps, in the work of Marshall.

We could conceive of a national demand schedule for a single imported commodity and, possibly, as Edgeworth suggests,[7] for an "ideal" article typical of the total volume of import or export trade, provided the composition of this ideal article were not constantly changing. But since the latter condition must, in fact, be the case, our intellects are not equal to the task we would impose upon them, nor would their indefinite improvement enable us to see verisimilitude in what is essential error. The same criticism as applies to Edgeworth's "ideal" article can be brought against Marshall's "representative bales" of exports which are supposed to embody uniform aggregate investments of a country's labor (of various qualities) and of her capital. It must be obvious that reciprocal demand is for individual commodities and not for any such uniform aggregate of labor and capital as a unit of the consolidated commodities concerned may incorporate, and that to construct demand schedules for representative bales the physical composition of which is inevitably changing as we move along the schedules, with commodities even shifting from one demand schedule to its reciprocal, is not only to build imaginary bricks with imaginary clay but also to commit the worse fault of assuming a homogeneity in the bricks which, tho a logical necessity for the construction of the demand schedules in question, is at the same time a logical impossibility.

The character (urgency, elasticity, and the like) of reciprocal national demand schedules for foreign products is, as I shall later attempt to show, of almost no importance in

7. Papers Relating to Political Economy, Macmillan & Co., Ltd., London, 1925, vol. ii, p. 58.

determining long-run ratios of interchange of products (international values), but to the neoclassical writers it appeared to be vital. Strong contributing factors to what I conceive to be their erring approach were (1) the assumption made by J. S. Mill, "for the sake of simplicity," of international trade carried on between two countries only and in but two commodities, and (2) Mill's dictum, too slavishly accepted by his followers, that trade among any number of countries, and in any number of commodities, must take place on the same essential principles as trade between two countries and in two commodities. If this dictum were true the orthodox theory could, I think, successfully defy criticism. But it is not true. Not only does the assumption of trade between two countries only, and in but two commodities, imply a monopoly element in national reciprocal demand schedules which might result in terms of trade very different from those which tend to be established under competitive conditions, but, since each of two trading countries dealing with each other in two commodities only would be exporting that commodity in which its comparative cost of production was lowest, and importing that in which it was highest, there is no possibility that either would cease altogether to send out its peculiar export, or to draw in its peculiar import, no matter what the movement of the terms of trade, within the broad limits of comparative advantage thus established, might be. As soon as a third country, however, or a third commodity, appears in the trading situation, the actual terms of trade will be a factor *determining* comparative advantage for all the countries involved and a sufficiently wide movement in the terms of trade (still, of course, within the greatest limits set by comparative costs) will, where two commodities only but three countries are concerned, reverse the export and import articles of that one of the three countries which is in the intermediate position as regards comparative advantage, or, where two countries only but three commodities are concerned, will shift one of the three commodities from the export to the import list of one of the countries and so, of course, from the import to the export

list of the other. Equilibrium will, in either case, be reached at international values quite other than those which would prevail were the supply of goods to foreign markets, of any and all countries, persistently made up of units of homogeneous composition, or were no shift of any commodity from the export to the import category of any country possible.

The more countries and the more commodities introduced into the trading situation the smaller will be the movement in the terms of trade which will bring, for the first time, any given export into the supply schedule of some one of the countries involved, or any given import, for the first time, into the demand schedule of some other, or shift an article hitherto exported, or imported, by any given country, into the opposite trade category. Each of these changes, consequent upon but a slight movement in the terms of trade, will set limits on a further movement in the ratio and when, as is the case in the actual world, there are a large number of countries trading in an immense variety of commodities, the long-run equilibrium terms of trade will be held in a rather rigid straight-jacket. In a given state and employment of the industrial arts in the various countries concerned, the long-run equilibrium terms of trade can, indeed, as a whole, scarcely deviate at all from the single position which will bring equilibrium.[8] Further than this, international values

8. This conclusion could be drawn even from the illustrations used in my former article where only four countries and three commodities were posited. I have since worked out some cases involving as many as ten countries and ten commodities. The possible range of terms of trade in a given economic environment then becomes very small. (Long-run terms only are here in question.) Anyone who cares to experiment with such data will quickly convince himself that, in a given state and employment of the industrial arts in the various countries concerned, wide long-run changes in the terms of a varied trade are quite out of the question and that there is only one possible equilibrium set of ratios. This is true, regardless of tariffs, unless these be extended so greatly as practically to throttle all foreign trade and so to change materially the preëxisting employment of the industrial arts. In order that additional payments be made by one country to others *some* movement in the terms of trade is, of course, essential, but it is most unlikely, and unnecessary, that it should be large, unless such country has been specializing very narrowly in exports not produced by other countries.

(terms of trade), being actually established by indirect or linked competition between all the countries trading in world markets, any movement in those values arising out of changes in the employment of the industrial arts in one or more countries, in workers' relative skill, or in some other such way, will so shift comparative advantages, and the composition of the export and import lists of the several countries involved, as to bring about a new equilibrium on the basis of the new form of linked competition. The preëxisting or present "urgency" or elasticity of reciprocal demand schedules will be an inoperative, or wholly insignificant, factor in the situation.

In order to develop more fully the differences between the orthodox theory and that which I essayed in my article of 1923 I shall first deal with a number of the corollaries, explicit in the orthodox presentation, which von Mering, in the article already cited, has elected to defend against my former rather casual objections, and I shall then go to the central thesis, of the nature and influence of reciprocal demand schedules, by which the orthodox theory must stand or fall. The corollaries, of course, are all more or less dependent upon this central thesis.

The first of such corollaries to which I would direct attention is contained in the assertion that a variety of exports is a cause of favorable terms of trade. This corollary issues directly from the orthodox views on the influence of demand schedules, since it is assumed that a variety of exports means a strong foreign demand for home products relative to the home demand for foreign products and, therefore, a rather good exchange ratio for the country in question. Such a variety of exports, however, is, in my judgment, an effect of unfavorable rather than a cause of favorable terms of trade.

In his defence of the orthodox doctrine von Mering points out that, if a country has a variety of products which, in a given situation, are just below the margin of export, it will possess a safeguard against any great worsening (for it) of the existing terms of trade. This is true and I had already

expressly recognized the fact.[9] But this by no means warrants the conclusion that a variety of exports, as such, makes for a favorable ratio. The fact is that a movement of the terms of trade of any given country *away* from the ratio most favorable to it will increase the number of its exports and diminish the number of its imports. It may, in certain cases, take but a small adverse movement of the terms of trade to bring in a number of new exports, or exclude a number of old imports, sufficient to establish equilibrium. But in other cases it may take a rather heavy adverse movement to do so. A multiplicity of exports in any given case may therefore mean, either that many commodities have become exportable before the terms of trade had moved very far away from the most favorable possible position for the country in question, or that the terms of trade had moved so far away from that position as to bring a large number of commodities into the export list. Every new commodity which enters the export list will, of course, exert its influence in checking the adverse movement in the terms, but one might as well say that the large number of buyers who come into the market when the price of any commodity falls far is the cause of the high (?) price at which that commodity is selling as that a large number of exports is the cause of the favorable (?) ratio at which they are being exchanged. It is true that a multiplicity of exports prevents the ratio of interchange from being as bad as it might otherwise be, but it does not, *per se*, make it good.

The most favorable possible terms of trade for a given country could be attained only when exports were confined to a single commodity. The least favorable terms possible, on the other hand, would surely obtain when the export list comprised all but one of the articles consumed. The larger the number of exports of any given country relative to the total number of commodities consumed in that country, the more certain, therefore, is it that the terms of trade are tending toward the side unfavorable to it. A wide variety

9. The Theory of International Values Reëxamined, loc. cit., p. 63, note 8.

of exports from any given country is thus always evidence that the terms are *worse* for it than they would be if, under the same conditions of production, the export list were more limited. Similarly a narrow list of exports is always evidence that the terms are *better* for the country concerned than they would be if, under the same conditions of production, the number of exports were larger. The statement that a variety of exports is a cause of favorable terms can scarcely be reconciled with these facts.

It cannot be denied that a concentration of potential exports about the optimum ratio for any country will prevent the ratio of interchange from becoming very unfavorable to that country, at least until the list of its exports is extended beyond the range of this concentrated group. It is, however, not the variety of actually existing exports, but this concentration of commodities about the upper rung of the scale of comparative cost (as against an even dispersion or a concentration at the lower end), which has any causal force whatever in making the terms of trade favorable for the country concerned. The greater the concentration of potential exports about this upper rung the greater, of course, is the assurance that the terms of trade will, on the whole, be favorable, whether or not the existing export list is wide. But even here a narrow list of exports will mean *more* favorable terms than will a wide one. The less the concentration of potential exports about the upper rung of the scale of comparative cost, on the other hand, the more likely are the terms of trade to be unfavorable,[1] tho here again a small number of exports will mean more favorable terms than will a varied list. It is indeed true that a great variety of exports may not only coincide with fairly favorable as well as with unfavorable terms but also that, tho the most favorable terms possible can be secured only when the export list is

1. The terms of trade *for such a country* might shift from the favorable ratio which it would obtain when its export list was very limited to a quite unfavorable ratio, without bringing any great change in the general scheme of international values. The only goods which would be much affected would be those few in the export of which such country had formerly been concentrating to the exclusion of other countries.

highly limited, a limited list is no *guarantee* that the terms will, in fact, be favorable. But these modifications are very far from lending any real support to the view that a variety of exports and favorable terms of trade go hand in hand.

It is, of course, futile to attempt sharply to distinguish cause and effect in cases of interaction. If it be granted, however, that the variety of exports from any country tends to be increased by an adverse movement in the terms of trade, and that, tho every increase in the number of exports acts to prevent a further fall in the ratio, the tendency is quickly counteracted (not eliminated) only in the exceptional case of a concentration of exports about the upper end of the scale of existing comparative advantage, we shall not be likely to follow the orthodox school in associating a variety of exports with favorable terms of trade. We shall rather hold to the contrary view, knowing, however, that according to circumstances both a varied and a narrow list of exports may coincide with favorable or with unfavorable terms. Of any given country with a varied export list we can hold both that, under a given set of conditions of production, the terms will be less favorable than they would be if the export list were more limited, and that, if productive conditions were different, the terms might be worse than they are owing to the failure of a multiplicity of exports to develop and thus set so early a check upon an adverse movement in the ratio.

The second of the explicit corollaries of the orthodox theory to which I would refer is that which is concerned with the relative gains of large and small countries in international trade. On the basis of ratios of interchange derived from hypothetical trading situations selected at random I had stated, in my former article, that there is no scientific foundation for the orthodox view that small countries, as a result of the respective strengths of reciprocal national demand, tend to secure, as against large ones, the greater portion of such gains. To this contention von Mering properly objects that one cannot determine the existence of a tendency from arbitrary, even if random, sampling, and that all that my examples prove is that small countries do not *necessarily*

secure the larger proportional gain from international trade. He asserts with truth that the existence or non-existence of the tendency in question can be demonstrated only by permitting the assumed size of one of the countries to vary while all else remains the same. Supplementing in a systematic manner, but with one essential logical defect, the examples I had developed, he reaches the conclusion that the aspersions which I had thrown on the dictum that small countries tend to get the lion's share of the gains from international trade are unwarranted, and that the orthodox view is right.

I had, in my original article, conceded *some* validity to this view in my statement that "the scintilla of truth in the idea lies in the fact that a small country may be able to specialize exclusively on a single commodity in which it possesses a very great comparative advantage and obtain all its imports through the export of this one commodity."[2] It is clear that if a country is, in hypothetical illustrations, allowed to become all but infinitesimally small, this possibility is always open. It would normally then give up the production of many of the commodities it had formerly been exporting and would secure them, as imports, on better terms than it had formerly been able to produce them for itself. On the other hand, as a country grows in size it will approach nearer and nearer to the scope of a world state. At a point just before such a hypothetical state had engrossed the whole world it could obviously not be obtaining any great gains from *international* trade, since the terms on which all goods (including that or those of the small state still outside its orbit) would be exchanged against one another could not possibly be much different from those which would prevail were its trade purely domestic. Every increase in the size of a trading unit, through a process of annexation, would tend to bring internal cost of production ratios nearer to the ratios of exchange which had prevailed in the world at large before the increase in the size of the given state had occurred (and would still prevail), and so to make any gain from *international* trade impossible. From this it follows that the tendency of any political unit

2. The Theory of International Values Reëxamined, loc. cit., p. 83.

to secure the larger formal share of the gains from international trade must vary inversely with size. The larger countries will obtain in domestic exchanges many of the advantages which international trade gives to the smaller. If a country, without any change in the volume, or direction, or terms, of trade should grow larger by annexation of another state, or should become smaller by scission, it would therefore tend respectively to suffer a loss, or register a gain, in its *international* trade, merely by reason of the fact that a converse movement would have taken place in its domestic trade. The terms on which international trade was being carried on would have formally moved in one direction or the other, but there would have been no real loss or gain to anyone. So far as conditions of this sort are operative it is somewhat misleading, therefore, tho it is formally correct, to say that small countries tend to secure the greater part of the gains from international trade.

A favorable formal ratio for any one country, moreover, frequently issues out of the fact that the country in question would be extremely inefficient in the production of the goods it imports. Suppose that such a country, small and inefficient, were wiped out. It might well happen that this would not affect at all the world price ratios between the goods it had formerly exported and those it had imported. One could, however, say that, while the small country was in existence, the other countries of the world were trading with *it* on terms very unfavorable to them and that, when it had disappeared, the trade of no country was carried on at quite so unfavorable a ratio against the world in general as it had formerly been. The favorable formal ratio at which small countries tend to carry on their foreign trade is often due to considerations of this character. When this is the case the unfavorable ratio obtained by larger countries, as against these smaller countries only, is a matter of no consequence to such larger countries. The significant thing for any given country is not the ratio as against any single foreign political unit (said ratio being determined by the relative powers of the foreign unit in the production of the commodities exchanged as much as by its

own) but the ratio against the foreign world in general. It is an error to suppose, because a small country trades with a large one on what are to the small country very favorable terms, that the larger land is carrying on its foreign trade at a ratio which leans toward the unfavorable side. As against third countries, with which it presumably trades in identical commodities on exactly the same terms as with the designated small country, it may be securing the major share of the gains. The error lies in taking different bases of comparison. In the one case the basis of comparison covers a large part or the whole of the international trade of the (small) country concerned, and therefore gives a good picture of the advantage of the trade to that country. In the other case the basis of comparison covers only a very small part of the total international trade of the (large) country, even in a single commodity, and therefore gives a very distorted picture of the relative advantage to the large country of its total foreign trade even in the single commodity the supply of which it obtains in part from the small country above considered.

It is not, however, with such merely formal but with real shifts in the ratio that von Mering, in his criticism of my position, is chiefly concerned. In developing his alleged vindication of the orthodox view, nevertheless, he violates his own condition of *ceteris paribus*, and his argument, in consequence, is wholly without validity. For, in varying the size of the country with which he is experimenting, he always changes, both absolutely and relatively to other commodities, the total world supply of the commodities in which that country specializes. Now every increase or diminution in the world supply of any commodity, or group of commodities, all other factors remaining as before, will of course effect a respectively adverse or favorable alteration in the ratios at which the given commodity, or group of commodities, will exchange against other articles.[3] Under these conditions von Mering

3. The demand for these commodities, as well as the supply, will, it is true, inevitably change with a change in the size of any one nation, no other alteration having taken place. This is true because the given

has naturally no difficulty in showing, *prima facie*, that the size of a country and the favorableness of its trade ratio are negatively correlated. But really to prove the point one must show that a variation in size alone, everything else except the inevitable accompaniments of such a variation being kept unchanged, will be negatively correlated with favorable terms of trade. To do this one should again take the case of a country becoming smaller by scission, or larger by consolidation with other countries. Let us deal with these cases in order. If a country should become smaller by scission, both of the severed parts continuing to produce, in the same volume as they had formerly done, all of the commodities which had been produced in the original unit,[4] there would be no change in the terms on which either of the severed parts would trade with the outside world. Similarly, a large country trading freely with a number of small ones would, if the small countries should be consolidated into a single political unit, obtain no better ratio of interchange than before from the mere fact that it happened to be dealing with a large country instead of a number of small ones.[5] The same result would follow if, when the size, and supply of commodities, of any given country showed a change, the size, and supply of commodities, of one or a group of other countries producing similar articles were altered in equal degree in the opposite direction. All these would be changes in the absolute and relative size of the several trading countries, all else remaining so far as possible as before, and they are much nearer the essential conditions for the test in question than are von Mering's

nation will now consume a different absolute amount of its own products. But it follows, from the fact of specialization in production, that its demand for its own products will not increase or decrease proportionately with their supply. Supply factors will, therefore, be dominant.

4. This would occur if neither of the parts had had any comparative advantage with respect to the other.

5. It should be noted, however, that the newly consolidated state might secure a worse ratio on its *international* trade than had any of its several parts on *their* international trade while they had remained independent nations. Much of the gains from international trade would simply have been transferred to the domestic account. This is an illustration of a formal (but not a real) adverse movement in the trade ratio to which attention has already been drawn.

assumptions. Since such changes in relative size of the trading countries would not alter the terms on which any of them traded, this, I submit, is evidence that size, *per se*, whatever its influence in determining the character of reciprocal demand schedules, is not a factor in the distribution of the real gains from trade. My illustrations taken at random therefore gave a valid result, tho it is true that they might not have done so and that, to make the conclusion irrefutable, it would be necessary systematically to change the assumed size of any given country, all else remaining *in statu quo ante*. If this were done the effect on the ratios of interchange of products would be absolutely nil.

The actual gains from international trade, of large and small countries alike, depend entirely upon how closely the ratios, in any given country, of cost of production of all the commodities involved on either export or import side would, assuming the production of all of them in the country in question, correspond with the ratios actually established in the play of international linked competition. Small countries simply contribute, and draw from, a general pool of products which are exchanged against one another on the basis of the total reciprocal supply (demand) and not on the supply from any particular source. The alleged tendency for small countries to secure the larger real gains from international trade is therefore non-existent. If a small country happens to be a microcosm, in which the real costs of production of all commodities reflect with approximate accuracy the exchange relationships between the various commodities in the world at large, it will gain little from international trade. On the other hand, a large country, such as Germany or Russia, may export manufactured commodities in exchange for raw materials and foodstuffs, or raw materials and foodstuffs in exchange for manufactures, on terms which are very greatly more favorable to it than those which would prevail if it had no international trade. Such countries are big gainers from the international exchange of products. A Jack-of-all-trades gains little by trading while specialists gain much. Whether the Jack-of-all-trades is big or little is irrelevant.

The question whether the terms on which rich countries carry on international trade tend to lean toward the side unfavorable to them, as the neoclassical writers maintained was the fact, is, in the main, a special case of the question of size; and since size has practically no causal effect on the terms of trade, neither has richness. It should be pointed out, however, that a country may be rich not so much because it is highly productive as because it exchanges its goods against foreign products on very favorable terms. If the favorable ratio were the cause of the riches, it would obviously be untenable to assert that the riches were causal with respect to the ratio, and that, in addition, they tended to make it unfavorable.[6]

The third explicit corollary of the orthodox theory with which I should like to deal (in some respects allied to that which has just been considered) is that which correlates with a sort of combination of volume and "urgency" of a country's demand for foreign products a tendency toward a rate of interchange of products unfavorable to that country.[7] It is

6. A case in point arises in connection with Professor Taussig's discussion of the trade between Great Britain and India in his International Trade (New York, The Macmillan Company, 1928). On page 18 of that book he says that the key to the apportionment of advantage in international trade is found in the money incomes of the people of the exchanging countries. Since money incomes are very high in Great Britain, relatively to money incomes in India, he draws the conclusion that the terms of the trade between the two countries are very favorable to Great Britain. (This is more specifically stated on page 157.) Developing the idea farther he remarks that it is "conceivable that money incomes in the two regions should be the same, and the gain thus shared equally." I must respectfully dissent from the views that equal money incomes in Great Britain and India would furnish any evidence that the gains from the trade between the two countries were being shared equally, that the actual relative incomes provide any criterion of the actual division of the gains of the trade, or that there is any proportionate connection between relative money incomes and the ratio of interchange of products. But I am now concerned merely to point out that Professor Taussig here regards the relative riches of Great Britain as an effect of favorable terms and presumably abandons the orthodox notion that it will be a cause of unfavorable terms.

7. I had not touched on this topic in the article which von Mering criticizes, but he develops independently the thesis that urgency of demand (in the sense that the products concerned are essentials as

true that if the volume of demand of any country for foreign products is very great relative to the total foreign demand for its own products (tho how this could be measured except in the ratio of interchange of products, which is the *quaesitum*, I cannot see), the terms on which such country would trade with the outside world would, in form at least, be rather unfavorable to it. But the absolute volume of its demand is of almost no significance. One could not say offhand whether such absolutely large demand for foreign products as the United States, for example, exerts, is or is not large relative to the total demand of all foreign countries for United States' products; and one could not, therefore, infer that the absolutely large demand of the United States for foreign products would render even the formal terms of trade unfavorable to that country. Still less, it is true, could one say of a country exchanging wheat for, let us say, silk that the terms of trade would be likely to lie toward the side favorable to that country, on the allegation that the demand for wheat is more "urgent" than that for silk.[8]

The concept of international demand has quite generally been formulated with great looseness. There is, for instance, no real substance in Mill's statement (as quoted and approved by Marshall) that the countries which carry on their trade on the most advantageous terms are those whose commodities are most in demand by foreign countries and which have themselves the least demand for foreign commodities. One cannot think of demand apart from price (terms of trade), and Marshall seems here to have fallen into the error of approving a method of price analysis which he had repudiated when he set up his general equilibrium concept of value. At

against more or less dispensable articles) has no general tendency to produce unfavorable terms of trade but that it is the volume and elasticity of demand which is important. I agree with him about "urgency" but must take issue with his treatment of volume and elasticity.

8. The matter of elasticity of demand, which has some bearing here, is reserved for later treatment. All that need now be said is that the demand for necessities is likely to be less elastic than that for luxuries. An inelastic demand for foreign commodities, however, is quite as likely to make the terms of trade favorable to the demander as the reverse. (See pp. 600 et seq.)

any given moment, and at any given price, demand cannot be said to be either strong or weak. If it is demand, and not merely desire, it is a willingness to buy a certain quantity of the commodity in question at a certain price. Demand, at any given price, is therefore a type of quality, like that of a vacuum, which does not admit of being more or less. Either it is there or it is not; it cannot be there in greater or less degree. It is true that, at a certain ratio of interchange between two products, the *amount demanded* of one of them may be more than the amount which will be supplied at that ratio. The ratio will then move. In this sense of demand, we may say that, at the original ratio, demand is strong. Similarly, at a different ratio, it would be weak. No demand is urgent or weak throughout its course. It is, therefore, quite as justifiable to say that the ratio determines the respective strength of reciprocal demands as that the respective strength of the reciprocal demands determines the ratio. It is consequently impossible to *explain* the ratio in this way. A general equilibrium concept of demand, supply, and price is, nevertheless, applicable to international as to all other values, and it is rather to the notion that national productive units are not affected by withdrawals from or entry into enterprises as international value relationships change — a notion implied in a fixed composition of the export and import lists of any country regardless of terms of trade — that I most strenuously object. Even on their own chosen ground, however, the neoclassical economists have failed to make a clear case, and I should like to call attention to further inconsistencies in Marshall's standard exposition of the neoclassical position. These inconsistencies, deriving from Mill, to whom Marshall remained persistently loyal, are perhaps not necessarily due to what I believe to be the fundamental fallacy of the orthodox theory, but they are very closely associated with it.

In directing my sling at Marshall I cannot but feel much more diffident than the boy David appears to have felt when he went to meet Goliath; for however great the stature of the Biblical giant, his works were clearly evil, whereas Marshall's

rank high among the great intellectual contributions of our time. Marshall's most comprehensive treatment of international values, in his Money, Credit and Commerce,[9] is, indeed, much below the standard of his original, privately printed, pamphlet on the subject.[1] For this very reason one should turn rather from the book to the pamphlet. The latter, however, Marshall himself described as embodying but an adjunct to his general theory. For the theory itself we are, in consequence, compelled to go to Money, Credit and Commerce. Such criticism as that theory here evokes can, however, be made with some assurance of fairness when it is remembered that what seem to me to be basic errors are either duplicated in the original pamphlet (and in Appendix J to Money, Credit and Commerce) or are precluded in the pamphlet by the fact that Marshall's premises are not necessarily relevant to the supplementary treatment there given.

Marshall says that "there are great differences in character between the demand of . . . an advanced country and a backward one . . . Thus, the rich country has less real benefit from the [international] trade than the poor one, for just the same reason that, when a rich man makes a fair exchange with a poor one, giving a thing that is worth a pound for another that is worth a pound, the real serviceableness to the rich man of what he receives is not likely to be nearly as great as the real serviceableness to the poor man of that which is exchanged for it."[2] This passage occurs in the chapter on "Elasticity of a Country's Demand for Imports" and seems to imply that the urgency of demand of the rich country would be relatively weak (Marshall apparently

9. London, Macmillan & Co., Ltd., 1923.

1. Money, Credit and Commerce, tho for the most part written many years earlier, was rushed into print in the concluding years of Marshall's life and has obvious imperfections which Marshall, in his more vigorous years, would presumably have eliminated. It is impossible to distinguish mere slips, however, from lapses which are due to erroneous premises in Marshall's logic, and it seems best to present the case from the only comprehensive text available. Any specific lapse may be merely a case of Jupiter nodding, but the whole treatment can, I think, be designated only in terms of rather deep slumber.

2. Money, Credit and Commerce, p. 168.

assuming that demand at a given exchange ratio admits of gradations) and the terms on which it trades, therefore, presumably good. On the next page, however, Marshall cites with approval Mill's dictum, already referred to, that the richest countries tend to gain the least from foreign commerce since, having a greater demand for commodities generally, they are likely to have a greater [stronger?][3] demand for foreign commodities, and thus to modify the terms of interchange to their own disadvantage. With the apparent intention of *supporting* this latter proposition he then advances the view that because a small country depends on foreign supplies for many things which a country with more varied resources can produce for herself, her (the small country's) demand for foreign goods is therefore very eager [strong?] while the large and rich country can attract foreign purchases (that is to say, can increase the demand of foreign consumers for such country's goods) by a great variety of goods offered for sale. On Marshall's own principles, this would *improve* the terms on which the large country would carry on its trade. Finally, Marshall says that the statement just made needs to be balanced by others which make for the opposite conclusion. His prior conclusion from these apparently contradictory arguments he does not state, but that it is that large and rich countries tend to have an unfavorable ratio would seem to follow from the sequel which asserts that large and rich countries have opportunities for developing new products of which the sale abroad would operate to improve the terms on which their total trade is carried on (and so to counteract what would otherwise be an unfavorable rate of interchange of products).

In this matter we must, of course, distinguish carefully between demand, desire, the amount demanded, and demand schedules. Nor should we fail to use the marginal analysis. Urgency of desire, for instance, and here also, if one likes, of "demand," is purely a matter of the relationship between the existing supply and the amount which would be demanded at *some* price ("cost of production," perhaps) which is taken

3. The expressions in brackets are my own interpolations.

as a standard. It is but very loosely tied up with specific products. If supply is short, the marginal unit of, let us say, wheat may be very urgently desired (demanded), but if wheat exists in plenty the marginal unit may scarcely be desired (demanded) at all. There thus seems to be no reason for such common allegations as that the position of the agricultural United States, as against industrialized Europe, was, in the past, persistently favorable.[4] It is here that elasticity of demand schedules might be of some significance. But the significance is not what it is often supposed to be. An inelastic demand schedule, such as Europe was assumed to have had for American agricultural products, does not tend to be associated in any consistent way with either favorable or unfavorable terms of trade. On the contrary it is characteristic of an inelastic demand schedule that the terms of trade will, according to circumstances, vary widely, now veering strongly toward the favorable and now toward the unfavorable side. An elastic demand schedule, in turn, has no tendency to furnish either a favorable or unfavorable ratio in international trade, but at whatever ratio the terms tend to settle it *limits* their fluctuations, more especially as against other countries with similarly elastic demand schedules.

It is on this matter of elasticity of international demand schedules that the orthodox theory of international values essentially rests, and I shall now turn from the consideration of corollaries of the theory to a discussion of its core. It will still be convenient to deal with the problem in Marshall's exposition, and here again it will be well first to clear up some obscurities (which are again not, I think, inherent in the orthodox theory) before the assault on the main position is undertaken. Marshall first says that "the elasticity of a country's demand for imports may be measured by the proportionate increase in that demand, which results from any movement in her favor of the terms on which she can obtain

4. It is conceivable (not, in my judgment, probable) that the protective system markedly improved the terms of trade for the United States, but it does not seem possible that the alleged "urgency" of demand for American exports could have had any *persistent* influence in that direction.

them."[5] Conversely, presumably, elasticity of a country's demand for imports may be measured by the proportionate *decrease* in the demand which results from any movement *against* her of the terms on which she can obtain them. Disregarding, for the moment, the implied and impossible assumption of a homogeneous national demand for imports (supply of exports) regardless of movements in the terms of trade, we may tentatively accept these definitions without further objection. In a hypothetical trading situation between two countries E and G, Marshall then asserts of the case in which there has been a considerable increase in E's demand for G's goods (movement of E's demand schedule to the right?), unaccompanied by any corresponding increase on the part of G, that "in every possible combination of a large, medium, or small elasticity on the part of E's demand,[6] with a large, medium, or small elasticity on the part of G's demand, one general rule holds. The more elastic the demand of either country, the elasticity of demand of the other being given, the *larger* will be the volumes both of her exports and of her imports; but the more also will her exports be *enlarged* relatively to her imports; or, in other words, the *less* favorable to her will be the terms of trade."[7] I have done my best to read this perhaps ambiguous passage in such a way as to make it valid. I have, however, had no success. While valid for G,[8] the rule will certainly not hold for E. The more elastic the demand of E, the demand of G being given, the *smaller* will be the volume of E's imports and exports,[9] and the *less* will her exports be enlarged relatively to her imports. E's

5. Money, Credit and Commerce, p. 167.

6. In this, and all similar cases, "demand" obviously means "demand schedule."

7. Money, Credit and Commerce, p. 178. Italics mine.

8. The terms of trade will, of course, move in G's favor, but the movement will be less favorable when G's demand schedule is elastic than when it is inelastic. Marshall's phrase would have been somewhat better if he had said "the less favorable to her will be the *movement* in terms of trade," rather than "the less favorable to her will be the terms of trade."

9. As compared, of course, with what they *would* be if E's demand were inelastic, not with what they *had* been before the change in E's demand schedule.

demand having increased (shift of the demand schedule to the right), and the terms of trade having consequently moved against E, E will, on Marshall's very definition of elasticity, take a quantity of imports which will vary in *inverse* relationship with the elasticity of her demand schedule. E's exports, as well as her imports, will be smaller in volume when her demand schedule (for imports) shows an elastic trend than they would be if it were inelastic, both because, her imports being smaller in volume, fewer exports will, on this account, be required in payment, and also because the terms of trade will not be so adverse as they would be were her demand inelastic. The terms of trade will, of course, have moved against E, but they will certainly not carry as far in that direction if her demand for G's goods is elastic as they would were it inelastic.

Continuing his analysis of trade between E and G, Marshall a few pages later asserts of the case in which E levies a tax either on her imports or exports (thus diminishing, at the old rate of interchange, E's demand for G's goods, or the supply of her own goods to G) and so moves the terms of trade in her favor, that "in every possible combination of a large, medium, or small elasticity on the part of E's demand, with a large, medium, or small elasticity on the part of G's demand, one general rule holds. The more elastic the demand of either country, the elasticity of the demand of the other being given, the *smaller* will be the volumes of her exports and her imports: and the more will her exports be *diminished* relatively to her imports; that is the *more* favorable will be the rate of interchange to her."[1] In the circumstances cited, this rule is again valid for G but again does not hold for E, and the criticism which has just been applied to the opposite situation holds, *mutatis mutandis*, for this also.

Still holding to the orthodox assumption that the composition of demand schedules does not change with a shift in the terms of trade (a valid assumption for short-run phenomena tho it is impossible for longer periods) we might then modify Marshall's dicta as follows:

1. Money, Credit and Commerce, p. 185. Italics mine.

In every possible combination of a large, medium, or small elasticity of demand on the part of one country for the goods of another with a large, medium, or small elasticity of demand on the part of the second country for the goods of the first, some general rules hold. The elasticity of demand of any country for the products of another (the elasticity of the reciprocal demand of the other being given) will find a direct correlation in the volume of her exports and of her imports, and in the ratio of her exports to her imports, in all cases in which her (schedule) demand decreases relatively to the (schedule) demand in the contrary direction. Conversely, the elasticity of demand of any country for the products of another (the elasticity of thereciprocal demand of the other being given) will find an inverse correlation in the volume of her exports and of her imports, and in the ratio of her exports to her imports, in all cases in which her (schedule) demand increases relatively to the (schedule) demand in the contrary direction.

It is, of course, true that, whatever the demand schedule of any country may be, the immediate and ulterior effects of an expansion of its demand for foreign products will be substantially the opposite of those of a relative contraction. But when its demand schedule for foreign products is elastic, the effect both of a relative increase and of a relative decrease in its (schedule) demand (an immediate unfavorable or favorable movement respectively in the trade ratio) will be quickly checked. When, for instance, under an elastic demand schedule, the (schedule) demand of a country for foreign products has increased relative to (schedule) demand in the opposite direction (relative movement of the demand schedule of the first country to the right) the immediate unfavorable movement in the ratio of interchange will tend to contract the volume of imports sharply and the (unfavorable) movement in the ratio of interchange will not go far. So too, on the same assumption of an elastic demand schedule, when the (schedule) demand of a country for foreign products has diminished relative to (schedule) demand in the opposite direction, the immediate movement in the ratio of interchange will tend to expand imports sharply, and here again the (favorable) movement in the ratio of interchange will not go far.

On the other hand, when a country's demand schedule for foreign products is *inelastic*, the effect both of a relative

increase and of a relative decrease in its (schedule) demand (again an immediate unfavorable or favorable movement respectively in the ratio) will be greatly accelerated. When, for instance, under an inelastic demand schedule, the (schedule) demand of a country for foreign products has increased relative to (schedule) demand in the opposite direction, the immediate unfavorable movement in the ratio of interchange will not tend to contract the volume of imports very much, and the (unfavorable) movement in the terms of trade would, on the assumptions of orthodox theory, proceed indefinitely (unless the volume of preëxisting exports could be rapidly expanded at some ratio near that formerly prevailing, which will depend on the counter elasticity or inelasticity of demand in other countries), until one extreme of the possible ratio of interchange is reached. So too, on the same assumption of an inelastic demand schedule, when the (schedule) demand of a country for foreign products has diminished relative to (schedule) demand in the opposite direction, the immediate favorable movement in the rate of interchange will not tend to expand the volume of imports very much, and the (favorable) movement in the terms of trade would proceed indefinitely (unless the volume of preëxisting exports were rapidly contracted at some ratio near that formerly prevailing, which will depend again on the counter elasticity or inelasticity of demand in other countries), until the other extreme of the possible ratio of interchange is attained.

With an elastic demand schedule, movements in the ratio of interchange of products are thus self-limiting but, with an inelastic demand schedule, they would be self-accelerating. Terms would, therefore, tend to be most stable when the countries *vis-à-vis* in international trade had reciprocally elastic demand schedules while they would tend to fluctuate most wildly when reciprocal demand schedules were inelastic. If both demand schedules were elastic, movements in the terms of trade must necessarily be small; if one demand schedule were elastic and the other inelastic, movements in the terms of trade would tend to be of medium proportions;

if both demand schedules were inelastic, movements in the terms of trade would tend to be large.

Wherever an inelastic demand schedule for foreign products exists, it would therefore seem possible, if the orthodox theory of international values be accepted, to effect with comparative ease a very great shift in the terms of trade, unless those terms are already at one or the other extreme of the possible ratios of interchange. Even then it might be possible to shift the terms to the opposite extreme. A relative increase in the demand of a country with an inelastic demand schedule might be brought into being, for instance, through the levy of, or increase in, tariffs imposed by other countries upon the import of goods from the country in question. The terms of trade would then move strongly from any previously existing favorable position of equilibrium toward the extreme most unfavorable to that country. On the other hand, a reduction of tariff barriers in the outside world, or even the imposition of a tariff by the country with the inelastic demand schedule,[2] would lead to a strong movement of the terms of trade from any previously existing unfavorable position of equilibrium toward the extreme most favorable to that country.

From this it will be evident that, on the principles of the orthodox theory, *any* existing equilibrium must be highly unstable wherever an inelastic demand is present. A small variation in the terms of trade, arising from any cause, will evoke a further movement in those terms which will tend to carry to one or the other of the limits of the possible ratios of interchange, according as the original movement was or was not favorable to the country with the inelastic demand schedule. In such circumstances one wonders just how such a Humpty-Dumpty as an intermediate ratio could ever have got up on the wall at all, and what could have kept him there up to the time that he eventually topples to one side or the

2. Such a tariff would diminish the national demand for foreign products *somewhat*. This would lead to more favorable terms. But the better terms would not proportionately increase the country's consumption of foreign products and the favorable movement in the terms would thus tend to continue.

other. It is, in fact, logically inevitable, on the premises of orthodox theory, that, should any country have an inelastic demand schedule, the terms of trade would tend to settle at one or the other (one could not say which) of the extremes of the possible ratio of interchange of its products for those of foreign countries. If the reader will refer to Mill's treatment of the topic, he will find that Mill here found himself on the horns of a dilemma. His reasoning led him to the conclusion just stated; but as it did not, in fact, seem that countries actually carried on their international trade on this basis, he was led to search for some principle which would establish equilibrium somewhere between the extremes of the ratio. The "Equation of International Demand" which Mill first advanced as a solution of his problem was no solution at all. To say that "the produce of a country exchanges for the produce of other countries *at such values* as are required in order that the whole of her exports may exactly pay for the whole of her imports"[3] is a mere truism. For, at whatever values the exports exchange for imports, the whole of the exports will exactly pay for the whole of the imports. It is hard to know how else the imports could be obtained. The "Equation," moreover, under an inelastic demand schedule, would in any event be attained only at one of the extremes of the ratio. Mill's elaborate attempt to improve, in a later edition, this first halting effort at establishing the principle determinative of the rate of interchange, and to bring anything approaching exactitude into his treatment, breaks down completely. Marshall recognized this, but *his* sense of reality also would not permit him to drive his logic to the point where Mill had balked. He therefore says that, while his chapter on elasticity of international demand seems needed in order to develop the study of international trade in the abstract, it has not much bearing on pressing practical problems since, as he asserts, the demand of no significant country for its imports, as a whole, is very inelastic.[4]

3. Principles of Political Economy, Book III, Ch. XVIII, §4.

4. Marshall, indeed, was disposed to regard his whole process of reasoning on elasticity and inelasticity of demand schedules as an intel-

This assertion of Marshall's is not only unproven but seems to be contrary to fact. Reciprocal demand and reciprocal supply are, of course, the same thing, but it will be well here to direct attention to supply, since from this angle the facts will appear more clearly to the reader. It frequently occurs that the supply of a given product, from all countries which specialize therein, is, for considerable periods at any rate, very inelastic. This is markedly true of some agricultural commodities. If, as often happens, the demand for such products is also inelastic, the terms on which countries specializing in such products carry on trade with the outside world may fluctuate so widely as to induce the most extreme vicissitudes in the prosperity of those countries. Tho the demand for sugar is perhaps not particularly inelastic, the supply seems to be; and since an inelastic supply represents a relatively inelastic demand for foreign products on the part of countries specializing in sugar, we have seen Cuban raw sugar in bond, in a little more than a decade, fall from twenty cents to less than one cent a pound in the New York market. Cuba has, in consequence, passed from a stage of high prosperity to destitution. This very striking case is paralleled in about the same degree in the case of rubber from British Malaya, and, in much lesser degree, in that of other agricultural products from Canada, Australia, Argentina, Russia, and other countries.

The present exchange ratios between the exports and imports of such countries are probably but short-time maladjustment phenomena which transcend, in some cases at any rate, the limits of ratios of interchange as determined by conditions of comparative cost. They cannot, therefore, present a stable equilibrium. But the terms of trade will not,

lectual toy, interesting, but far removed from the realm of practicality. For the purpose to which it was applied, viz., the determination of long-run ratios of interchange, it was, I am convinced, not only a toy but also tawdry. For short-run ratios, however, (for the period, that is, during which reciprocal supply is being adjusted to changed terms of trade) it was far from being a toy but was, and remains, of importance in the world of practical affairs as well as in that of mental abstractions. To this matter more detailed attention will presently be given.

as Marshall asserts, shift back to less extreme ratios because the demand of any large country for a given *range* of products is "normally" elastic. It is here that the accepted theory of international values irremediably breaks down. The solution of the problem involves the complete abandonment of that theory with its unreal, and indeed impossible, trappings of "ideal" commodities, or "representative bales" of exports and imports, and its reliance on the allegedly elastic character of reciprocal demand schedules. A direct attack on its basic postulates will proceed from the position that, with any large movement in the terms of trade, certain products will eventually be shifted from the export to the import list of some of the countries to which the movement in the terms is unfavorable, and will be replaced in the domestic production of such countries by other commodities, formerly imported, which it will now pay to produce at home, either fully or for a larger proportion of consumption than hitherto. Certain of these former imports may even enter the export lists of such countries. Either movement would be effective, in some degree, in preventing any strong permanent shift in the ratio of interchange, even if only two countries were involved in international trade, provided they were trading in more than two products. But it is *always* effective, and in a shorter interval, in the world as it is where many countries are in commercial contact with one another. Through the force of linked competition, any shift in the terms at which one internationally traded product exchanges for another, no change having taken place in relative real costs of production, will, within a not very extended period, thus tend to be well-nigh completely counteracted regardless of the elasticity of the demand (supply) schedules of any given country, or countries, specializing in the commodities in question. To take a specific example, such as wheat, it may well be that Russia, Argentina, Canada and some other exporting countries would suffer a very strong adverse movement in the terms on which wheat would exchange for other commodities (no change, let us assume, having taken place in relative real costs of production), without shifting to other commodities in marked

degree and thus without materially reducing the supply of wheat put upon the market. But the United States, and many other producers of wheat, have alternatives to wheat production, and when wheat offers relatively unfavorable returns, such countries will sooner or later shift, to some extent, from wheat to other products. The pressure on wheat prices having been thus relieved, and the pressure on prices of other products having been increased, something close to the old exchange relationship will be restored. It is not even necessary that the country or countries in which the adjustment is made should be exporters of the product in question. Certain countries may reduce a domestic production which is already insufficient for home consumption and thus increase the demand for imports of this product. Shifting to other products they will increase the supply and reduce the import demand for these. With any movement, therefore, in the terms at which products exchange against one another, any country which is a marginal producer of any part of the supply of the commodities against which the movement in the terms has taken place, whether or not it is an exporter thereof, will tend to shift to such of those commodities favored by the movement in the ratio as had formerly been just extra-marginal for it. The production of exports, as well as of the internal supply in all countries, of the commodities disfavored by the alteration in the ratio will consequently decrease relatively to the production of exports, as well as of the internal supply in all countries, of the commodities favored by the alteration in the ratio. This will always operate to reëstablish something like the former terms of trade. Since, in the actual world, there is a continuous gradation in the advantage of production in any one country of more or less of one product or another, even a very slight shift in the terms at which products exchange relative to their real costs of production in *any* country will rather quickly set in motion compensating forces. In other words, the marginal analysis applies here fully as much as to individual commodities in a single market.

The significant differences, in practical conclusions, which

issue out of the approach to the problem of international values which I have here and formerly suggested, from those which issue out of the approach of the neoclassical school, may be illustrated by an examination of a treatment, on orthodox lines, of the trade between Great Britain and India. As already noted, this topic is touched upon in the early pages of Professor Taussig's standard work, International Trade, but it is taken up more fully in a later chapter of that book.[5] Asserting that India, as well as England, has an absolute advantage in the production of its own specialties, Professor Taussig attributes the unfavorable trade ratio, and the equally unfavorable incomes, of the people of India to the character (elasticity, etc.) of the respective demand schedules of the two countries for each other's products. Professor Taussig's reasoning, however, involves him in an embarrassment (with respect to the presumptive and actual flow of specie) which he frankly admits. "In truth," he says, "the case is troublesome. I am not at all sure that it can be reconciled with the hypotheses and conclusions which have been set down in the preceding chapters." For my own part, I am convinced that the difficulty is traceable to the erroneous fundamental postulates of the neoclassical theory.

The terms of trade between Great Britain and India, as I conceive the matter, are determined in the following fashion. India produces, among other things, at an absolute as well as at a comparative advantage with respect to Great Britain, the commodity tea. Whether the foreign demand for tea is "urgent" or not, elastic or inelastic, India, together with other countries, produces so much tea that the price of tea has fallen to the point where it is equally advantageous for the natives of India to produce jute, cotton, wheat, etc. for export. In so doing they become competitively linked with other countries as, for example, the United States. Cotton and wheat of a given grade must sell at the same price in any market, whether they have been produced in India, the United States, or elsewhere. In the long-run a given grade of labor producing cotton or wheat in the United States must,

5. Page 157 et seq.

on the assumption of internal mobility of labor, obtain the same wages as similar labor will obtain in textile factories, steel-making, and the like. In the latter case the products will impinge upon the exports of Great Britain. Tea production in India is thus tied, through the international price structure, to the prices of textiles and steel in Great Britain. Productive conditions being unchanged, the price of tea will bear a definite long-run relationship to that of cotton or wheat so long as India produces and exports all of these products, while the prices of cotton and wheat will bear a definite long-run price relationship to those of textiles and steel so long as the United States produces and exports all of these. British textiles and steel, grade for grade, will sell in export markets at the same prices as similar American products, and the prices of tea, cotton, and wheat (India's exports) are thus definitely related, via the U.S.A., to those of textiles and steel (Britain's exports). "Urgency" and elasticity of international demand schedules are irrelevant. The native of India, whether he raises tea, cotton, or wheat, will obtain a (money) income, relative to that of the American, which will be in proportion to his productivity in wheat or cotton as against the productivity of the American grower of the latter commodities. The American worker of a given grade, whether growing wheat or cotton, or working in a textile or steel mill, will, in turn, obtain a (money) income, relatively to that of his British cousin, which will be in proportion to respective productivities in export textiles or steel. The money income of the British worker is in this, and in no other, way indirectly but very definitely linked with the money income of the native of India. That the income of the native of India is low is due to the fact that he has low *absolute* productivity in India's marginal export commodities, while that of the British worker in Britain's marginal export commodities is fairly high.

The terms of trade are, in fact, rather unfavorable to India. This is shown, not by the relative height of British and Indian incomes, but by the circumstance that India is, in late years, entering more and more into the production of

several typically British goods, while there is no possibility of Britain's entering into the production of most of the typically Indian goods. Rather is England steadily withdrawing from the relative production of certain Indian commodities such as wheat. This all means that England is getting the greater share of the gains from the trade. Great Britain is thus somewhat richer, and India somewhat poorer, than if the terms were more favorable to India. The overwhelming reason for the great difference in incomes, however, is not the ratio of interchange but the disparity in absolute productivity of the workers in the marginal export, and in most of the domestic, commodities of each country. The ratio of interchange is a minor factor which could be of decisive importance only in the case of small countries with a limited number of exports. If India should greatly raise her absolute per capita productivity in all agricultural products, the terms of trade with Great Britain would, in the absence of other changes, become even more adverse, but the disparity between British and Indian incomes would nevertheless tend to disappear. The present terms of trade are unfavorable to India because the *relative* cost of production, in India, of all of the various commodities exchanged in both directions is closer to their relative cost of production in the world at large than is the case with Great Britain. This is, of course, a more or less fortuitous situation which happens to be unfavorable to India. But the low level of Indian incomes is so much more due to deficiencies in absolute productivity, over a range of products sufficient to employ the whole Indian population, that India need not devote any excessive concern to the terms of trade. In any case, so long as productive conditions in India and in the outside world remain substantially as at present, there is no possibility of changing the ratio of interchange very much. The character of the British demand schedule for imports from India, or of the Indian demand schedule for imports from Britain, is in no way responsible for the situation.

The ratios at which products exchange in international trade are dependent *at any given moment* solely upon recip-

rocal supply (demand), but reciprocal supply is, *in the long run*, dependent upon these ratios. Stable equilibrium is approached through an interacting movement in the amounts reciprocally supplied and in the terms of trade. Any given country adapts itself to the general situation, on the principle of opportunity cost, in such a way as to provide as large a return as possible to its entrepreneurs and, assuming free internal competition, to its population in general.

It has already been noted that in a complex trading situation, under given conditions of production and comparative costs, long-run equilibrium is possible only within an extremely narrow range of the terms of trade. Those terms, however, may shift markedly with changes in conditions of production, whether or not any given country is sharing in such changes, and this may cause a marked alteration in the prosperity of the given country.[6] But this, again, has nothing to do with elasticity of demand, and on the basis of the exposition so far given we might conclude that the character of the demand or supply schedule of any given country, and even a shift of its whole demand schedule for foreign products to the right or left, will have almost no effect upon the long-run ratio of interchange of internationally traded products.

Using the theory, and the method, which was developed in my earlier article von Mering has now shown, however, that when new factors, such as an increase or decrease in the population of any given country, are changing the volume of its production, there is, in the process of transition to the new terms of trade which are inevitable if the increase or decrease in production continues (and which will not be *greatly* different from those which had formerly prevailed), a short stage within which, if the process of increase or decrease in production were stopped, the ratio might (1) permanently retain its existing status, (2) shift to that which will, in any case, eventuate if the process should go on, (3)

6. The shift in the terms of trade would be more or less nominal (cf. Marshall, Money, Credit and Commerce, p. 333) for those countries in which the change in conditions of production corresponded more or less fully with the change in terms, but it would be real for other countries.

fluctuate between these points. It is only in such a stage of limbo (a rather abnormal situation) that elasticity or inelasticity of the demand schedule of the country in question, or of any other country, would be of some slight significance in throwing the balance one way or the other. The final conclusion, therefore, on elasticity (or inelasticity) in demand schedules, as a factor in determining the long-run ratios of interchange of products, is that it may have *some* effect in unusual situations which may conceivably be permanent tho they are not, in fact, likely to be; and, even then, that it is operative only to the extent of shifting the ratio to one or the other limit of a very narrow range. This necessarily small range of movement in the long-term equilibrium ratios almost completely removes the sting from the classical "demonstration" that an improvement in productive powers might so change the terms of trade as to result in permanent substantial loss to the country in which the improvement occurred, that protection might, through a converse shift in the terms, result in a permanent substantial gain to the country in which it was applied, or that taxation can, in any important degree, be thrust upon the "foreigner."

So far as short-run effects are concerned, however, the neoclassical analysis is of great value. The neoclassicists, nevertheless, have said little or nothing on this point. Their theory was supposed to be a long-run theory. It is really valid, however, only as an explanation of a more or less immediate situation. In periods too short to permit of shifting of resources through the gradual process of the decay of existing fixed capital and the growth of new forms thereof, in a word, too short to permit of a change in long-run conditions of supply, the character of demand schedules is, indeed, of predominating import. Where inelastic demand (or immediate supply) schedules are involved, moreover, short-run changes in the terms of trade may be very violent. The ratio then frequently goes quite beyond even that wide range set by conditions of comparative cost on the assumption of a fixed composition of export and import lists. The *data* of the orthodox analysis would have to be changed to

meet this situation, but the *method* would be applicable. For this purpose Marshall's geometrical and algebraic supplement (as given in Appendix J to Money, Credit and Commerce) is to be highly treasured. Short-run phenomena, moreover, are sometimes affected but slowly by the forces making for long-run equilibria. At the present time, for instance, any transition toward the long-run equilibrium position appropriate to such permanent disturbance as may have occurred in the years just prior to the outbreak of depression is hindered by the prevailing uncertainty and by the fact that *all* goods now seem difficult of sale. In such circumstances "short-time" phenomena may dominate the situation for a rather lengthy period. The position of countries for whose products demand schedules "curl round" when supply is unduly extended may then become acutely serious.

Elasticity or inelasticity of national demand schedules being a factor of almost no importance in fixing the long-run terms of trade, and "urgency" of national demand being of no greater significance, the whole structure of orthodox international value theory, which was superimposed upon Ricardo's exposition of the principle of comparative cost, falls to the ground. The principle of comparative cost must still be the cornerstone of the theory of international values (we should think, however, rather in terms of opportunity than of other types of cost); but we must abandon reciprocal demand, unmodified by a change in ratios of interchange, as an explanation of anything other than short-time phenomena. It is not without interest that this was the whole trend of Marshall's reasoning, as against the ideas of Jevons with respect to the general theory of value.

The analysis of the method of determination of international values made in my former article leads to ratios more definite, on the basis of given suppositions, than those which Marshall was able to obtain on the impossible assumption of an unchanged composition of "representative bales," and it precludes the possibility of several widely different sets of ratios of interchange meeting equally well the requirements of stable equilibrium. The curves of *long-run* national

demand (supply) schedules for foreign products cannot, I think, reach the "curling round" stage if there be anything like free internal mobility of the factors of production in the various countries concerned. My own feeling is that national reciprocal long-run demand schedules for foreign products, whatever their character, cannot even be posited or drawn, since changes in the terms of trade make the homogeneous units, necessary to the construction of such schedules, impossible. We can, however, in the absence of such schedules, determine the ratios of interchange by the method outlined in my earlier article provided we have demand and real-cost schedules for the various commodities in the various countries concerned.

It is well, perhaps, to emphasize the fact that the objections I have raised in this article to the theory of international *values*, as developed by Mill and his successors, do not apply to the classical theory of international *trade* as developed by Ricardo, who left the matter of international values quite untouched. So far as international values are concerned, it seems to me that Mangoldt, Cliffe-Leslie, and Sidgwick adumbrated doctrines which are much nearer the truth than those of more generally accepted writers, and that, if these doctrines had been developed instead of having been neglected in favor of the work of the neoclassicists, we should not have been wandering in the wilderness for more than the alloted span of forty years but might before now have reached that promised land of settled questions in which Mill was rash enough to think that the men of his time had firmly set their feet.

FRANK D. GRAHAM.

INSTITUT UNIVERSITAIRE DES HAUTES ÉTUDES INTERNATIONALES, GENEVA