

exchange rates and the ratios of exchanges; is undetermined as regards the quantities exchanged.

This does not mean a denial of the facts themselves, but a denial of the thesis advanced for explaining them, and of the respective demonstration. In other words, it does not mean a denial of the existence of the plague, but a denial, for instance, of the theory that the plague was caused by the « greasers », and a demonstration of the groundless character of the arguments used to support that theory.

I have admitted moreover that I consider that, should hypothesis (a') of the absence of arbitrage transactions between countries be added to hypothesis (a), the thesis (b) generally speaking holds good (provided, that is to say, that the special cases considered by Gini be excluded); but nevertheless the demonstration is defective.

What apparently escapes the attention of Bresciani-Turroni is the fact that without the additional hypothesis (a') he cannot write the equations:

$$E_{ab} = I_{ba} k_{ab}$$

$$E_{ac} = I_{ca} k_{ac}$$

$$E_{bc} = I_{cb} k_{bc}$$

in the unknown quantities k_{ab} , k_{ac} , k_{bc} , even after the integration that I suggested, and this for the simple reason that in this case the system of conditions that defines the equilibrium cannot be made « explicit » with regard to the quantities imported and exported, because the said quantities are « indeterminate ».

It probably could, if arbitrage transactions be excluded; but this would evidently have to be demonstrated, and Bresciani-Turroni has not done so. Indeed, as the reader can see, we cannot perceive from the demonstration given by Bresciani-Turroni what is the logical bearing of the possible hypothesis of the absence of arbitrage transactions. At no point has he felt the need of introducing this hypothesis into his demonstration which allows us to presume that he considered the hypothesis superfluous. But it is not superfluous, as I think I have clearly shown, and it is evident that if a theory can only be demonstrated on the basis of a given hypothesis, any line of argument that claims to prove it apart from that hypothesis cannot but be vicious.

I think that the critical part of my article was sufficiently exhaustive and so I have nothing to add to it. In the constructive part I limited myself, for the sake of simplicity, to illustrating by an example the line of argument that leads to the demonstration of my assumption. In any case, I intend to supply, if necessary, an exhaustive mathematical presentation of the problem of bilateral trade exchanges, which will give an unequivocal demonstration of my assertions.

I have abstained from discussing the specific question of economic policy for, as I noted in the introduction to my article, I consider it is above all advisable to try to arrive at a stricter formulation of those theoretical propositions that provide the essential premise for an adequate solution of the problem when it comes to translating theory into practice.

A Comment

by

Professor C. GINI

The attention drawn to some parts of my article *Bilateral and Multilateral Trade* (1) first by Prof. C. Bresciani-Turroni (2); and then

(1) See No. 8, January 1949, of this Review; Italian version in « Moneta e Credito », No. 4, 1948.

(2) *The Cross-Rates of Exchange Once More*, in the « Review of the Economic Conditions in Italy », September 1949; Italian edition with some additions in « Rivista Bancaria », July-August 1949.

by Dr. G. D'Ippolito (3), may leave the reader under the impression that the exclusive or the main purpose of that article was to discuss the criticisms made by Bresciani in a previous article of the policy of the International

(3) *On the congruence of exchange rates under a system of bilateral trade*, in this number of this Review; Italian version in « Moneta e Credito », No. 8, 1949.

Monetary Fund (4) and this impression might be confirmed by some phrases in the Reply that Bresciani has made to D'Ippolito's article.

As a matter of fact, the purpose of my article above referred to was different and broader, and — so it seems to me — also more important.

My purpose in writing it was to state that the system of bilateral trade has been forced on countries by circumstances, and that under the circumstances in which it has been given effect it has represented a lesser evil; that under those circumstances, as also in those that followed, it has rendered appreciable services; that it cannot be done away with until conditions that will allow of multilateral trade are reestablished; that moreover the drawbacks of bilateral trade should not be exaggerated, and that therefore one should not expect more from the reestablishment of multilateral trade than it can give. In particular, I showed that under the hypothesis of free market « the bilateral system makes the attainment of equilibria in trade exchanges and international exchange rates more costly — and therefore less accurate — and delay them but do not ultimately prevent them ».

These conclusions — which it seems to me are not unimportant — are but a special case of the broader theory which I think I have adequately demonstrated and illustrated in *Prime linee di Patologia economica (First Outlines of Economic Pathology)*, (4th Edition Milan, Giuffrè, 1935), that holds that the economic organism in abnormal periods operates on lines in keeping with its vital requirements in conformity with rules — which I have endeavoured to explain and illustrate — that are in some respects essentially different from those characteristic of its normal mode of operating. As long as abnormal conditions persist, it is vain and harmful to try to force the economic organism to adopt normal rules of life. The article *Bilateral and Multilateral Trade* will supply the matter for a chapter in the 5th edition, revised and enlarged, of the

(4) *The Problem of the Cross-Rates of Exchange*, in « Review of the Economic Conditions in Italy », May, 1948; Italian version in « Rivista Bancaria », May-June 1948.

Prime linee di Patologia economica to be published shortly by the U.T.E.T.

Among the charges brought against the system of bilateral trade that I examined in that article was not only but also that of determining the incongruences which now occur in the rates for the currencies of some countries, with the result that cross exchange rates differ from the direct ones, and in this connection I examined the statement made by Bresciani-Turroni according to which « in a free market this discrepancy between direct and cross rates derives necessarily from the existence of bilateral trade relations ». « Thus — he went on to say — we see that an international balance of exchange rates and bilateral trade are two opposing terms, each excluding the other. This principle is of fundamental importance for the monetary policy of the International Fund ». And, after illustrating that policy, he came to the conclusion: « *The international monetary system formulated at Bretton Woods, is incompatible with a system of bilateral trade agreements* » (5).

Without passing judgment on the degree in which the International Monetary Fund's policies have responded to needs, I maintained, in opposition to the above statement of Bresciani's, that, under a system of bilateral trade, direct exchange rates may differ from cross-rates (and this shows how arbitrary is the statement now made by Bresciani that I deny the actual existence of such divergencies, just as the character in Manzoni's novel denies the existence of the plague), but that they do not necessarily differ, and that moreover if, in a first stage, such divergencies should occur, arbitrage transactions on goods — always on the supposition of a free market — will gradually reduce them, and will tend to reestablish the concordance of the exchange rates.

I have no amendments to make to this position which Dr. D'Ippolito has since confirmed, examining in detail Bresciani's statement of the case, and comparing it with that used in dealing with another question by Wal-

(5) See « Review of the Economic Conditions in Italy », May, 1948, pp. 151 and 153 and « Rivista Bancaria », May-June 1948, pp. 17 and 19.

ras, whom Bresciani did not mention in his first article but to whom he referred in his second article, stating that he had only applied his theory.

While the conclusion to which Dr. D'Ippolito arrives, agrees with mine, his demonstration is on the other hand independent and different. But Bresciani's inference is quite arbitrary when he concludes that therefore the criticisms he (Bresciani) made of my position should be considered as accepted.

For the purpose of criticising my arguments Bresciani stated that he quoted them, but as a matter of fact he only extracted and criticised the illustration of one of the possibilities I had considered, which he interpreted moreover in his own way, without taking into account the statement that accompanied it to the effect that it was a simplification; nor of the circumstance, in part explicitly stated and in part easily comprehensible, that in the example of the three commodities (bananas, oranges, persimmons) it was supposed that they were exchanged in like quantities.

I do not purpose dwelling here on this special criticism, and moreover there can be no doubt that in practice the transactions are more complicated than those I contemplated in the schematic example given; this, however, does not discard the possibility I wished to point out that, under special conditions, there may be uniformity in the price relations of the goods exchanged between several countries, even under a system of bilateral trade — and that consequently the direct and the cross rates may agree from the moment that the bilateral trade balances were established, and therefore without the need of recourse to arbitrage transactions on goods. On the other hand, I admit that the formulation of this hypothesis, in the alternative (a) considered in my article, was not clearly defined, and so I will define it here.

The congruence of exchange rates occurs more especially (alternative a) when the following hypotheses concur: (A) when, for the proportions existing in the quantities of goods possessed in the whole of countries considered, the ratios between the marginal utilities of the goods in question are uniform in all the coun-

tries, so that the trade exchanges of one country with another are determined only by the absence or insufficiency of some goods considered; (B) when — as is usual in considering such questions — the cost of carriage and other charges or hindrances to trade are neglected.

My line of argument was as follows: I started from the consideration of the two possibilities that at the moment that the bilateral trade balances were established the congruence of the exchange rates under a system of bilateral trade will either occur or it will not. Should it occur — even if only under hypothetical conditions that are not often met with in practice — all is well; should it not occur then, under free market conditions, it will tend to do so later on as a result of arbitrage transactions on goods, and also, as Dr. D'Ippolito has well remarked, as a result of the reexportation to one country of products produced with raw materials imported from others.

Even had it been well founded — and as I have said, it was not — Bresciani's criticism of one of the possible cases under which the congruence would have occurred from the moment that the bilateral trade balances were established, it would not have affected the substance of my position. It was for this reason that I had not thought it worth while to reply to Bresciani. But I am glad that his comment on Dr. D'Ippolito's article, which the Editor of the Review has kindly communicated to me, now enables me to make clear to Dr. D'Ippolito and to myself the fundamental cause of the discrepancies between our conclusions and those of Bresciani.

I think the whole discussion now clearly shows that Bresciani's proposition that exchange rates under a system of bilateral trade are inevitably incongruous, can not be accepted for two reasons: (A) because, under certain special conditions, this incongruence does not occur from the moment that the bilateral trade balances were established; (B) because, apart from such special conditions, any incongruence that might occur could only persist if arbitrage transactions on goods and the adjustments arising from the productive process be excluded. It does not seem that Bresciani realises that

this latter hypothesis is on the one hand essential for the validity of his position, but on the other, conflicts with his other hypothesis of a free market, according to which — to use Bresciani's own words — « both the quality and type of the goods imported or exported and the exchange rates for the various currencies, are the result of transactions effected freely on the markets ». — This was the hypo-

thesis from which he started and which was at the basis of both his and my treatment of the subject.

It is not impossible that, when I have some further contribution to make on the subject of the congruence of exchange rates or other kindred subjects, I may take the matter up again, subjecting to a closer scrutiny our respective points of view.