The Relations Between Practice and Theory of Forward Exchange

It is difficult to imagine any sphere in economics in which close contact between theory and practice is more essential than in respect of Forward Exchange theory. On the one hand, we have a highly intricate system, the almost infinite variety of technical details of which cannot be mastered adequately without a thorough practical experience. On the other hand, we have an important set of economic principles arising from the study of that system with all its manifold broader implications, which cannot be mastered adequately without being familiar with methods of theoretical analysis. Most Foreign Exchange dealers, who have the practical aspects of the subject at their fingertips, are not trained to grasp its theoretical aspects. And most academic economists fight shy of Forward Exchange, partly because they fail to realise its importance and partly for fear of the pitfalls that await those unfamiliar with its practical aspects — a fear which experience has amply justified. There is consequently a gap between Forward Exchange theory and Forward Exchange practice.

Being somewhere halfway between a theoretical economist and a practical specialist, I shall try in this article to apportion between bankers and economists the blame for the absence of adequate collaboration between them for the sake of furthering the progress of the science and art of Forward Exchange. In order to stress the need for closing the gap between theory and practice I feel impelled to be outspoken in my criticism. But I yield to no one in my admiration for the immense practical knowledge of Foreign Exchange dealers and for their ability to operate successfully in spite of being unfamiliar with the theoretical rules which they instinctively apply as a matter of routine. I am also full of admiration for the results achieved by theoretical economists who have been undeterred

by the grave handicap of their inadequate practical knowledge of Forward Exchange. If in pointing out defects in these results this article appears to be over-critical it is because, for considerations of space, it has to be confined to pointing out mistakes without being able to give credit for achievements contributing towards the progress of Forward Exchange theory (1).

In pleading for closer co-operation between theory and practice I am following Keynes' lead. At a very early stage of the evolution of Forward Exchange theory he made a realistic attempt at bridging the gap between theory and practice. In the early 'twenties he spent some weeks in the Foreign Exchange dealers' room of the British Overseas Bank, and it was this valuable if limited practical experience that enabled him to write about Forward Exchange with more authority than any academic economist before or since (2). But, as I propose to show below, even his exceptional genius and his contact with practice was not sufficient to safeguard him against occasional mistakes. Evidently neither the technicalities of Forward Exchange operations nor the underlying spirit of the system can be studied really satisfactorily through such a limited experience. Any economist, in order to be qualified to write about Forward Exchange, ought to devote at least six months to field research in a Foreign Exchange department and ought to bring his knowledge up to date from time to time by revisiting his dealer friends.

All this would be unnecessary if only Foreign Exchange dealers themselves were both able and willing to give economists the benefit of their practical experience by writing on the subject. It would be much easier for an intelligent dealer to acquire the necessary theoretical knowledge than for an academic economist to acquire the necessary practical experience. Unfortunately, most dealers either feel inhibited from publicising their business experience by their fear of disclosing some business secret, or they are not endowed with the faculty of writing on the subject. It is true, much practical material was published between the Wars and again since the War by experienced dealers or ex-dealers. Their material on Forward

(1) For a more balanced assessment of contributions by academic economists to Forward Echange theory I must refer the reader to my *Dynamic Theory of Forward Exchange* (London, 1961).

(2) *Manchester Guardian Reconstruction Supplement*, Sector I, April 20, 1922. *A Tract on Monetary Reform* (London, 1923), pp. 115-139.

Exchange was based, however, largely on pre-War practices and even on pre-War exchange rates.

Between the Wars the two London financial daily newspapers had each a daily column covering systematically current developments in the Foreign Exchange market. Since the War, however, any regular features that have appeared on Forward Exchange in the financial Press have been general rather than technical and have not always followed the ever-changing practice of Forward Exchange sufficiently closely and systematically. Occasional articles covering some major change — published often some considerable time after the event — were of course very valuable. They were not sufficient, however, to enable academic economists to avoid basing their conclusions largely on obsolete pre-War practices.

For instance, until a few years ago most economists regarded a rule put forward by Keynes in the early 'twenties — that interest arbitrage transactions were not undertaken unless there was a profit margin of ½ per cent per annum — as axiomatic (3). Elaborate theoretical conclusions were based even recently on that assumption (4). Yet any Foreign Exchange dealer could have easily enlightened economists that the rule, which had not operated rigidly even before the War, was no longer applicable during the 'fifties. Most arbitrageurs, provided that they have funds available, are willing normally to operate for a profit of a fraction of ½ per cent, and some are even prepared to operate at times without any profit, for the sake of attracting other types of business. Pointing out these facts in my post-War book on Forward Exchange I remarked: "The sooner and the more completely that obsolete pre-War rule about the half per cent minimum discrepancy is forgotten the better. It bears no more relevance to present-day realities than the ancient practice of transacting all Foreign Exchange business at the Royal Exchange on Tuesdays and Thursdays that existed in Goschen's days, or the even more ancient practice of maintaining fast courier

(3) *A Tract on Monetary Reform*, p. 128. I myself endorsed this view in my pre-War book *The Theory of Forward Exchange* (London, 1937), pp. 172-173, but in my post-War writings I sought to emphasise that it was no longer valid. ("Some recent changes in Forward Exchange Practices", *Economic Journal*, September 1960, pp. 486-488, *A Dynamic Theory of Forward Exchange*, London, 1961, pp. 50, 135, 166-170).

(4) B. Reading, in a diagram of a schedule relating the interest arbitrage demand or supply of forward sterling to the forward rate presents this now obsolete theory very clearly. ("The Forward Pound 1951-59", *Economic Journal*, June 1960, p. 307).

services enabling bankers to ascertain the rates in other centres before their rivals that existed in Gresham's days " (5).

A much more important instance of the result of inadequate contact with the theory and practice of Forward Exchange was provided by the delay in realising the existence of the Euro-dollar market. Although it began to assume considerable importance in 1957 and its turnover continued to increase throughout the late 'fifties, it took years before its existence came to be noticed at all outside banking circles. The Radcliffe Report (6), which is liable to influence monetary theory and monetary policy for a generation, was produced in complete ignorance of the new device. It was not as much as mentioned either in the Report or in the Evidence. Yet, in addition to its impact on Forward Exchange, that device is apt to affect Money markets and domestic supplies of credit. This gross oversight was all the more remarkable as the Radcliffe Committee included Sir Oliver Franks who, as chairman of one of the clearing banks, was well in a position to be familiar with the Euro-dollar system. It seems that, such is the gap between theory and practice that he must have chosen to ignore in his capacity as an adviser on monetary policy the facts with which he must surely have been familiar in his capacity as a practical banker.

A realisation of the existence of the new device and of its potentialities might have influenced the recommendations of that Committee. Its Report might in turn have made many economists, who are still inclined to look upon Forward Exchange as a mere technical device of no great importance, realise that to deal with international and even domestic monetary problems without allowing for the influence of Forward Exchange is like performing *Hamlet* without the prince — or at any rate without the gravedigger.

Admittedly, compared with pre-War days, the number of economists who take an active interest in Forward Exchange theory has materially increased since the resumption of Forward Exchange dealings in the 'fifties. They are handicapped, however, by inadequacy of their knowledge of the system as it works in practice. The time-lag between major changes in practices and their realization by economists is altogether too long. Every practical banker has

(5) *A Dynamic Theory of Forward Exchange*, p. 169.

(6) *Report of the Committee on the Working of the Monetary System* (London, 1959).

known it for years that in the post-War world the relative importance of pure speculation in exchanges has declined and that its place has been largely taken by the increased volume of Forward Exchange transactions arising from hedging against exchange risk on assets abroad. But until quite recently economists were quite oblivious of that change. Some of them still appear to be under the impression that, subject to exchange restrictions, anybody can walk into any bank and open a speculative account in Forward Exchanges by depositing a certain amount for margin requirements, as it was done in the 'twenties and 'thirties, on the clear understanding that when the forward contracts mature no deliveries of exchange would be made or expected and the transaction would be closed by the payment of the margin of profit or loss.

Although such operations still occur, the more respectable bankers nowadays do their best to discourage Forward Exchange transactions which are not based on legitimate commercial or financial business (7). Few economists are aware of this. A wide knowledge of the change would have been to the advantage of bankers, since it would have disarmed some of the criticism against them in connection with the many attacks on sterling and other currencies since the War.

The spectacular increase in the importance of hedging as a source of Forward Exchange operations in the post-War world was not realised by economists until recently. Indeed most of them, even those taking a special interest in Forward Exchange, had ignored the very meaning of the term " hedging " which was often used loosely as being synonymous with " covering " (8). Yet the difference is very important both from a theoretical and a practical point of view. Covering Forward Exchange operations are undertaken to safeguard against exchange risk arising from some claim or obligation of a definite amount maturing on a definite date. The result of such operations is that the long or short position in a foreign currency created by the claim or obligation becomes thereby

(7) Writing in 1959, Tsiang remarked: " A matured forward contract is usually [*sic*] settled by the contracting parties taking the profit, or paying the loss, implied between the contracted forward rate and the actual current spot rate, at the moment of maturity ". (" The Theory of Forward Exchange and Effects of Government Intervention on the Forward Exchange Market ", *International Monetary Fund Staff Papers*, March, 1959, p. 89).

(8) Tsiang, *op. cit.*, p. 76. A. E. Jasay, " Forward Exchange: The case for Intervention ", *Lloyds Bank Review*, October 1958, p. 39, *Radcliffe Report*, p. 152, para. 439.

self-liquidating on maturity (9). Hedging, on the other hand, is not self-liquidating because the open positions involved do not mature at some definite date and the realisable value of the assets involved cannot be ascertained precisely or even approximately. Hedging is sometimes also defined as a deliberate assumption of a speculative risk for the sake of offsetting what is considered to be a graver speculative risk in the opposite sense. There is no speculative risk whatever involved in covering.

It was probably largely because of ignorance of the increased importance of hedging since the War that the advice to defend sterling by means of unlimited official support of the forward rate in face of persistent major speculative attacks was thrust upon the British Government by academic economists with a vigour and persistence bordering on fanaticism. Their advice was based on the mistaken assumption that most of the forward selling of sterling was supposed to be speculative, so that those who bought forward dollars from the Exchange Equalisation Account would not be in a position to pay for them on maturity without first buying the equivalent amount of sterling. On this false assumption the advocates of unlimited support claimed that it would be perfectly safe for the Exchange Equalisation Account to sell forward its total external reserves, and even to oversell them.

Had they been sufficiently in touch with Forward Exchange practice to realise that in the post-War periods a very high proportion of buyers of Forward Exchange were not speculators but hedgers who did possess realisable sterling assets in the United Kingdom and might therefore have been in a position to pay for the dollars on maturity without having to buy sterling, conceivably they might have reconsidered their advice before committing themselves to it too heavily. The bare possibility that a large proportion of the forward dollars bought could be thus paid for with the aid of the sterling proceeds of realised assets was in itself sufficient to make

(9) The only qualified exception to this rule is the case of covering current account balances or other claims or liabilities of fixed amounts maturing at sight. For instance, day-to-day loans in the money market which are repeatedly renewed are frequently covered for the entire period for which they are intended to be renewed. Such forward contracts are not automatically self-liquidating, but those concerned possess or can raise the exact amount of currency required for their liquidation on maturity, should they choose to do so, without first having to buy or sell spot exchanges in the Foreign Exchange market.

the authorities hesitate to risk allowing their forward commitments to outrun their external reserves, apart altogether from the many other ways in which their reserve position might deteriorate before the forward contracts matured (10).

I remarked above that even Keynes, who was by far the greatest theoretical expert on Forward Exchange for all time, possessing as he did much more practical knowledge than any other academic economist, did not have sufficient practical knowledge to be safe against making mistakes. He laid down the rule that in the case of inconvertible currencies Bank rate changes do not lead to transfers of funds, because their effect on the profit margin earned on interest arbitrage is immediately offset by a corresponding adjustment in forward rates (11). This rule found general acceptance by economists and has been frequently endorsed ever since. Judging by the evidence given by the British Treasury spokesman before the Radcliffe Committee, it also influenced British monetary authorities (12). Yet it is contrary to the experience of dealers who know that the adjustment of forward rates to their interest parities following on a Bank rate change is very often not complete or instantaneous, so that the change very often affects the profit margins and is therefore followed by transfers of funds through interest arbitrage. Indeed, the Keynesian rule conflicts with the Treasury's own admitted experience on the occasion of the Bank rate change of September 19, 1957. According to official figures quoted by Sir Leslie Rowan in his Evidence, the profit margin on outward arbitrage was reduced on that occasion from 5 per cent to 1½ per cent per annum (13). Such is, however, the weight of Keynes' authority that, although his theory conflicts with obvious facts, the theory is

(10) Advocates of unlimited support were presumably unaware that since 1950 non-resident firms whose investment project in the United Kingdom was approved in advance by the Bank of England have been entitled to repatriate their capital, and have therefore been in a position to pay for forward dollars with sterling on maturity if they grew tired of hedging. Any practical banker engaged in foreign business could have enlightened them on this simple but important point.

(11) *A Tract on Monetary Reform*, pp. 136-137.

(12) " Market forces immediately adjust the Forward rate to take account of the change in money rates, with the result that a switch of funds from one centre to another remains neither more nor less profitable than it was before the change in money rates took place " (Sir Leslie Rowan's Evidence before the Radcliffe Committee. *Minutes of Evidence*, p. 247, Q. 3211).

(13) Sir Leslie Rowans, *Minutes of Evidence*, *ibid.*

upheld and the facts are disregarded. It is evidently a case of *tant pis pour les faits.*

Since Keynes was a very shrewd observer we must assume that during his brief spell of practical experience in a Foreign Exchange department no Bank rate change occurred. Otherwise, I am sure he would have realised that the adjustment of Forward rates to the change was often partly the result to arbitrage transactions brought about by the discrepancies caused by the change. The transitional period between the change and a complete adjustment may be very brief, but it does provide opportunity for new arbitrage transactions, or alternatively, it may lead to the non-renewal or reversal of previous arbitrage transactions. The extent of the discrepancy and of its subsequent readjustment depends on market reactions. As practical bankers know, these reactions largely depend on the market's moods of the moment and are apt to change from case to case. It is small wonder if they distrust Forward Exchange theory since even its most prominent exponent was guilty of a piece of generalisation which conflicted with their own frequently repeated practical experience (14).

Lack of adequate experience was responsible for a mistake by Mr. Jasay in exactly the opposite sense. He put forward the view, at any rate by implication, that after Bank rate changes it is supply-demand relationship arising from commercial and speculative transactions that determine movements of funds through arbitrage (15). Dealers must find Mr. Jasay's idea, implying as it does that arbitrageurs act as public benefactors whose task in life is always to provide counterparts to commercial and speculative demand regardless of profit considerations, somewhat strange.

Because suggestions of this kind tend to deter practical men from taking an interest in Forward Exchange theory, it is important to make it clear that Mr. Jasay's theory does not stand up to scrutiny by economists any more than it does to their scrutiny. He assumes,

(14) Professor Bent Hansen was the first academic economist to state that Keynes' above views were not in accordance with practical banking experience (*Skandinaviska Banken Quarterly Review*, January 1959, p. 18).

(15) " Given the schedule of commercial and/or speculative demand for Forward Exchange which is their counterpart, arbitrage funds will or will not move, regardless of whether middlemen do or do not adjust their quotations accordingly " (A. E. JASAY, *Economic Journal*, June 1962, p. 400).

quite wrongly, that the rôle of arbitrage transactions is always necessarily to fill gaps between commercial-cum-speculative supply and demand. In reality, discrepancies between forward rates and their interest parities may cause transfers of funds through covered interest arbitrage regardless of commercial/speculative supply-demand relationship. Such transactions often take the initiative in affecting exchange rates and are thereby apt to induce commercial or speculative transactions to provide the counterpart (16).

Further instances in which economists put forward false theories as a result of their inadequate knowledge of Forward Exchange practice include a mistake made by Mr. Tsiang, who seems to be under the impression that, when the authorities engaged in supporting the forward rate have to renew maturing forward contracts, the burden of their commitments is thereby doubled (17). A casual inquiry in any Foreign Exchange department would have enlightened him that renewal of a position means buying or selling spot against forward, and that therefore its net result is simply the maintenance of the *status quo.*

Inadequacy of practical knowledge of Forward Exchange technique is not due to any unwillingness on the part of academic economists to learn from practical men — though evidently their eagerness to learn is not matched by a sufficient degree of willingness to devote to that task the necessary time and effort. What is worse, some of them are at times inclined to underrate the intelligence and shrewdness of dealers. For instance, Keynes was doing them much less than justice when he accused them of ignorance because in February 1921 they failed to take advantage of the profit margin of 25 per cent on swap operations in lire (18). They evidently realised what Keynes overlooked — that swap transactions, while

(16) Incidentally, Mr. Jasay's contention that the mere existence of a discrepancy between commercial-cum-speculative demand and supply automatically gives rise to the required counterpart in the form of arbitrage transactions regardless of any adjustment of exchange rates appears to disregard one of the basic economic principles — the principle of market mechanism under which supply-demand discrepancies are balanced through attracting counterparts by means of price adjustments.

(17) TSIANG, *op. cit.*, p. 105.

(18) " So few persons understand even the elements of the theory of the forward exchanges that... it was possible, at the end of February 1921, by selling spot sterling in Milan and buying it back a month forward, to earn at the rate of more than 25 per cent per annum " (*A Tract on Monetary Reform*, p. 130).

covering arbitrageurs against the risk of a depreciation of the lira, would have left them exposed to very grave political risk due to the unsettled conditions prevailing in Italy, and to the risk of a reinforced exchange control which might have prevented them from repatriating their balances from Milan. Any dealer could have told him this.

Even allowing for the above mistaken views held by theoretical economists, and many others whom I could quote, there is no justification for the unmitigated contempt with which most practical bankers view Forward Exchange theory. Their attitude is understandable. Every now and again some economist puts forward a theory which dealers, on the basis of their experience, know to be defective and which, if applied by them, might result in costly mistakes. They feel therefore that all a good dealer needs is experiences, good judgment and, above all, that mysterious thing called hunch. And they fear that any theoretical knowledge might work out to the detriment of the last two of these qualifications, so that, in their opinion, a dealer whose practical knowledge is unadulterated by any theoretical knowledge stands a better chance of forming the right judgment or following the right hunch.

Without rejecting theory as being downright harmful, a practical writer, Mr. H. E. Evitt, remarked that in matters of exchanges " an ounce of experience is worth a ton of theory " (19). Whether or not his estimate of the ratio between the value of theory and that of experience is right may be a matter of opinion. There should be no two opinions, however, about the advantages of having that ton of theory *in addition* to that ounce of experience. What Mr. Evitt and other practical men who profess to disdain theory fail to realise is that, in reality, dealers follow theories in their everyday activity without knowing it, in the same way as Monsieur Jourdain, the hero of Molière's *Bourgeois Gentilhomme*, was unaware that for more than forty years he had been talking prose. When dealers take advantage of discrepancies between forward rates and interest differentials they act on the interest parity theory. When they take advantage of discrepancies between long and short forward rates they apply the theory of the equilibrium line, and so on. It may not be important for them to have a name for the rule they apply.

(19) H. G. Evitt, *A Manual of Foreign Exchange*, 5th ed. (London, 1960), p. 139.

But surely it is some advantage to be fully aware of the rule as defined by text books instead of merely following it instinctively. Practical writers concede that much, even if they are also unaware that they too are talking theory when codifying the elementary rules that are in force in the Foreign Exchange market.

But Forward Exchange theory, in order to justify itself as a valuable guide for practical men, has to go much further than merely codifying Forward Exchance practice. It is to the advantage of dealers if they are in a position to appreciate the forces that are behind the immediate market influences affecting the rates. Their practical experience has taught them a great deal about the way in which changes in the balance of payments and prospects of such changes are liable to influence forward rates. There are many other factors, some of them less familiar than others. To recognise them and their potential influence calls for a certain amount of broader economic knowledge that cannot easily be picked up through practical experience alone. Knowledge of theory in addition to experience is surely helpful, always provided that dealers are aware of the limitations of theory and of the essential provisos on which its validity is conditioned. They have to guard themselves against dogmatism to which practical men embracing some theory are at times inclined.

Subject to this reservation, dealers only stand to gain if they familiarise themselves with Forward Exchange theory. Although some surviving pre-War dealers pride themselves of never having read a single book on Foreign Exchange, many dealers of the post-War generation are more inclined to take an interest in theory. This change of attitude may be due to the fact that it is now incomparably more difficult for Foreign Exchange departments to earn their keep than before the War. Profit margins in Foreign Exchange markets are now much narrower and it would be incomparably more difficult to cover the greatly increased overheads if dealers were to confine themselves to the conventional transactions which was their bread-and-butter in pre-War days.

Dealers have to engage nowadays in complicated time arbitrage and cross forward rate transactions of a kind which most pre-War dealers had preferred to avoid. In doing so they have to take a view of prospects of spot rates, forward rates, interest differentials and the variety of factors liable to affect Euro-dollar and other foreign

currency deposit rates. They now operate for much longer periods than before the War and have to take much longer views. This in itself calls for better appreciation of economic trends that are liable to develop during the period of a long contract which cannot be covered right to maturity for some time after its conclusion. To that end theoretical knowledge is bound to be helpful. There is no reason whatsoever why a dealer should lose his commonsense merely because he has acquired such knowledge.

Unfortunately, the increased willingness of bankers to learn is not matched adequately by an increased willingness of all academic economists interested in Forward Exchange to teach them in a way that is helpful to practical men. A very large proportion of post-War literature on Forward Exchange, in addition to being based on out-of-date practices or on unrealistic views, is made deliberately inaccessible to would-be students among practical bankers, by the obscurantist mathematical method that has become fashionable. Such presentation constitutes one of the major obstacles to bridging the gap between theory and practice, precisely because it deters and discourages students unfamiliar with mathematical economics. If this were a price that must necessarily be paid for progress it might be worth paying. I am unaware, however, of any progress in Forward Exchange theory achieved as a result of the application of mathematical economics. Indeed, mathematical treatment does not even safeguard economists against making mistakes. The fact that Tsiang, who is one of the leading exponents of that school, was guilty of the major mistake referred to above, seems to be conclusive in this respect. By making their theories unintelligible to practical experts economists greatly reduces the chances of their mistakes being corrected, and they thereby increase the chances of faulty doctrines being absorbed in the corpus of economic theory. If only economists were to write in a language understandable to practical bankers, the increase in the interest taken in Forward Exchange theory by the latter would in due course go a long way towards bridging the gap.

Foreign Exchange dealers may find it worth while to interest themselves in Forward Exchange theory, not only from the point of view of their work but also for the sake of taking up an interesting hobby. Moreover, there is everything to be said in favour of realising how one's specialised occupation fits in with the general

scheme of things. This realisation would give Foreign Exchange dealers an additional interest in their work and from that point of view alone the time and energy spent on studying theory would carry its reward. Last but by no means least, if they were to pursue their activities fully equipped with adequate theoretical training they would stand a good chance of discovering new angles to Forward Exchange theory.

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