

An Analysis of the Two-Tier Foreign Exchange Market*

Introduction**

The effects of international mobility of capital have recently attracted increasing attention. In the last few years, capital movements have had important repercussions both on the level of international reserves and on the autonomy of monetary policy for many countries. The effect on monetary policy is of particular importance not only for monetarists but also for Keynesians, in view of the well-known political and administrative difficulties encountered in using fiscal policies for anticyclical purposes. These have given rise to a critical reappraisal of the economic desirability of complete freedom of capital movements and have led to the formulation of numerous proposals intended either to repress financial flows through administrative controls or to introduce exchange rate systems capable of discouraging undesired flows. This paper analyses the possible effects of one of these systems, namely, the two-tier foreign exchange market. This system, which has been in operation in Belgium for over 15 years, has recently found new supporters, as is indicated by the fact that during the international monetary crisis of May 1971 the EEC Commission counseled its adoption.

Section I analyses the reasons which may justify restrictions on the freedom of capital movements, both in the short run and in the longer term; Section II examines some of the technical characteristics of a two-tier foreign exchange market; Section III extends the well-known Mundell analysis of the efficiency of monetary and fiscal

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policy in an open economy to the case of a country having a two-tier foreign exchange market. Finally, Section IV draws some conclusions and compares a two-tier system with other instruments designed to reduce the undesired repercussions of high capital mobility.

I. The Role of International Capital Movements in the Short- and Long-Run

The right of Fund members to repress capital flows by introducing exchange controls is one of the most important characteristics of the international monetary system created at the Bretton Woods Conference. In fact most countries retained well into the fifties a complex structure of controls on capital movements introduced before World War II. In this way the national authorities maintained some freedom in their use of monetary policy for internal stabilization purposes. However, as the European economies grew in strength, the restrictions were dismantled, and towards the end of 1958 the major industrial countries made their currencies convertible *de facto*. About the same time, the development of the Euro-dollar market, the growth of multinational corporations and the intensification of international banking ties caused large amounts of capital to become internationally mobile, highly interest-elastic and sensitive to every possibility of a change in parity. The resultant massive capital movements reduced the room for maneuver of the monetary authorities and frequently caused substantial disequilibria in the balance of payments.

These difficulties have reversed the process of liberalization that took place in the 1960's and stimulated renewed and critical examination of the desirability of substantial freedom for international capital movements. This question may be discussed theoretically in a short-term or a long-term framework. In the short-term the analytical tools are those of business cycle theory; in the long-term they are those of welfare economics and growth theory. Assuming perfect competition, from the point of view of welfare economics the thesis in favor of the free movement of capital is quite similar to that in favor of free trade: capital mobility tends to maximize world welfare by ensuring the most efficient distribution of the world's resources. However, it should be stressed that if the objective is to maximize *national* welfare, controls on capital movements can be justified by

roughly the same arguments as are used in favor of the optimal tariff.¹ If ideal hypotheses such as perfect competition and price flexibility are abandoned, controls on capital movements can also be justified as second-best solutions. This is because they would tend to compensate possible distortions, important among which are: (a) imperfections in financial markets; (b) different levels of taxation on income from interest and profits; (c) quantitative controls on the flows of capital imposed by other countries; and (d) differentials in interest rates due to differing combinations of fiscal and monetary policies in various countries rather than to the differing marginal productivity of capital.²

In a system of fixed exchange rates one of the major causes of distortions may be the different rates of inflation in various countries. At equal real rates of interest, countries with relatively high rates of inflation will tend to have higher nominal rates of interest. Consequently, ignoring expectations of changes in parity, capital will tend to flow towards the countries with the highest rates of inflation. In other words, there is no guarantee that international movements of capital reflect differences in the marginal productivity of capital in different countries.³ Moreover, if capital mobility is high, there is a tendency toward the equalization of nominal rates of interest in various countries. As a result, countries having relatively high (low) rates of inflation may be obliged to have *real* rates lower (higher) than might be desirable on purely domestic grounds.⁴

It must be pointed out that the maintenance of a relatively high rate of inflation is not necessarily incompatible with long-run equilibrium in the balance of payments, and, therefore, the distortions mentioned above are not necessarily of a temporary nature. If one compares the United States with the countries that developed more rapidly than it did in the period 1953-1970, one is struck by the fact that consumer prices increased by 97 per cent in Japan, by 66 per cent in Italy and by 45 per cent in Germany, compared with

¹ N. FIELKE, "The Welfare Effects of Controls over Capital Exports from the United States", *Essays in International Finance*, Princeton University, January 1971.

² H. JOHNSON, "Theoretical Problems of the International Monetary System", *Pakistan Development Review*, 1967.

³ F. LUTZ, "Money Rates of Interest, Real Rates of Interest, and Capital Movements", in *Maintaining and Restoring Balance in International Payments*, (W. Fellner et al), Princeton University, 1966.

⁴ R. MUNDELL, *Monetary Theory*, Goodyear Publishing Co., 1971.

41 per cent in the United States. Over the same period, these countries left their par values unchanged, with the exception of Germany which revalued twice. Moreover, the export price index fell in Italy and Japan while it increased by 30 per cent in the United States.⁵ The different trend of consumer and export prices can be explained by the differences in the price structure between less and more mature economies. In the former the prices of services and of agricultural products are generally lower than prices in the industrial sector where, however, the greatest increases of productivity are registered. The prices of industrial products tend to remain constant in less mature but rapidly growing economies while those of services and of agricultural products increase. As a result, since manufactured goods form the greater part of trade between industrial countries, rapidly growing countries can maintain or increase their international competitiveness while having increases in consumer prices higher than more mature countries. This could add a permanent character to the distortions mentioned above, resulting from the tendency of financial flows to equalize nominal rather than real rates of interest. Long-term analysis does not, therefore, reveal *a priori* any intrinsic merit to the freedom of capital movements.

In the sections that follow, analysis will be concentrated on the short-run aspects, that is to say, on the effect capital movements may have on internal and external balance in the various phases of the business cycle. In the classical theory of the gold standard it was thought that short-term capital movements could play a positive role since, by compensating for disequilibria in the basic balance of payments over the course of the business cycle, they permitted domestic stabilizing measures to be spread over a longer time span. In recent years, however, short-term capital movements have frequently had disequilibrating effects. First, even when capital flowed in opposite direction to basic disequilibria, the high mobility of funds has resulted in their volume being such that anticyclical changes in domestic interest rates are very difficult. This, it has been indicated, has had the effect of reducing the monetary autonomy of countries in a period when, in view of the well-known difficulties in the use of fiscal policy, monetary policy seems to be indispensable as an anticyclical instrument. Second, uncertainty about par values has

⁵ R. MCKINNON, "Monetary Theory and Controlled Flexibility of Exchange Rates", *Essays in International Finance*, Princeton University, May 1971.

often generated massive speculative flows that are very difficult to neutralize and that frequently force the authorities to pursue domestic and external policies that would not be otherwise desirable.

The two-tier foreign exchange market is one of the methods that have been proposed to limit the damaging effects of short-term flows. Its characteristics will be examined in the following pages.

II. Technical Characteristics of a Two-Tier Foreign Exchange Market

A two-tier foreign exchange market is commonly meant to be a system under which current transactions are channeled through an "official" exchange market, where the authorities intervene to maintain the exchange rate within certain margins around par, while capital transactions are channeled through a "free" market, in which the exchange rate is free to fluctuate.

In the post-war period only three countries have adopted legal separation between current and capital transactions. Switzerland adopted a free market for capital transactions during World War II, but the authorities reunified the exchange markets a few years later.⁶ A similar system is still used by the United Kingdom, but it is limited to investments made outside the Sterling Area; the system is intended to avoid a net capital outflow which might add to the current account deficit of the United Kingdom with the rest of the world.

Belgium is the only country that has used a free market for a large proportion of capital transactions as an instrument of balance of payments policy and of monetary policy over a long period of time.⁷ Although Belgium progressively broadened the range of financial transactions to be channeled through the free market during the years 1950-70, the institutional characteristics of the foreign exchange markets remained substantially unchanged until May 1971. From its inception, one of the principal objectives of the free market in Belgium had been to discourage capital outflows;

⁶ G. RUFF, "A Dollar-Reserve System as a Transitional Solution", *Essays in International Finance*, Princeton University, January 1967.

⁷ For an analysis of the Belgian system, see "Les mouvements conjoncturels enregistrés dans la balance des paiements de l'U.E.B.L. de 1961 à 1967", *Bulletin de Documentation* of the National Bank of Belgium, April 1969.

but towards the end of the 1960's the current account surplus increased considerably, bringing about substantial speculative inflows, and these became unusually large during the spring of 1971. Action was then taken to reduce the capital influx; in particular, the sale on the official market of foreign exchange acquired on the free market was prohibited. As the link between the two markets — which is what kept the free rate from rising above the official rate — has been broken, the two-tier market may now be used to control both the inflow and the outflow of capital.

Technically, the division of the foreign exchange market into an official market for current transactions and a free market for capital transactions may be achieved in a number of ways; for example, the banking system can be instructed to establish two types of foreign exchange accounts for residents, "current" accounts and "capital" accounts, and two similar categories of domestic currency accounts for non-residents. The control may be on either type of account; it is sufficient, for instance, to ensure that all payments and receipts deriving from current transactions are made through the "current" accounts.

In practice, it may prove more difficult to control certain transactions such as tourism, commercial credits or profits from foreign investments than it is to control others.⁸ Inevitably, the separation between the two markets will not be perfect, and the incentive to evasion will increase with any widening of the differential between the official and free rates.⁹ Such difficulties are of course common to any kind of administrative control. However, the Belgian experience suggests that the controls are more effective if they apply to all financial transactions than if they are directed selectively towards particular categories of transactions such as short-term bank deposits or direct investments. Notwithstanding possible evasions, a substantial separation between the two markets seems feasible, at least for short periods even when the two rates differ very much. In the pages that follow the practical difficulties of implementing administrative controls will be disregarded and

⁸ In this paper it is assumed that foreign profits and interest payments would be channeled through the official exchange market even when they are reinvested in the same country.

⁹ The free market does not reduce capital movements due to leads and lags in commercial payments, which go through the official market.

attention will be given only to the economic consequences of an effective separation of the two markets.¹⁰

If the authorities do not intervene in the free market, by definition there cannot be any net capital movement; that is to say, a current account surplus or deficit brings about an equal change in official reserves and in the monetary base. The free exchange rate will then be at a premium or at a discount vis-à-vis the official rate depending on whether, at the official rate, there would be a surplus or a deficit in the capital account.¹¹ The hypothesis of no official intervention in the free market is not however especially relevant. Normally, the monetary authorities could sell or purchase foreign exchange in the free market, depending on whether there is a surplus or a deficit in the current account, so as to reduce or even completely avoid changes in official reserves.¹² Obviously, the monetary authorities could also overcompensate a current account surplus or deficit, losing reserves in the first case and acquiring them in the second; however, such behavior could well be considered contrary to the "rules of the game" and it will not be taken into consideration here.

Consider the case where the monetary authorities decide to sell or acquire on the free market an amount of foreign exchange equivalent to their net purchases or sales in the official market for current transactions, so as to avoid any variation in the level of reserves. Such behavior could be defined as automatic compensation of the current account disequilibrium. When the authorities operate in this manner, the two-tier foreign exchange market has an important characteristic in common with a floating exchange rate system in that there is no balance of payments constraint. The basic difference between the two systems consists, of course, in the fact that the two-tier system shifts the brunt of the adjustment to the capital account, while a floating rate causes continuous adjustments in both current and capital accounts.

¹⁰ On the administrative difficulties of the two-tier foreign exchange market, see A. LAMFALUSSY, *The Role of Monetary Gold over the Next Ten Years* and the comments of G. Carli, *The Per Jacobsson Foundation*, September 1969.

¹¹ It should be borne in mind that a free rate at a discount (premium) vis-à-vis the official rate is equivalent to the application of a tax (subsidy) on capital exports and an equivalent subsidy (tax) on capital imports.

¹² Net private capital flows are of course equal to the amounts sold or acquired by the authorities in the free market. The overall change in reserves is thus the algebraic sum of the amounts acquired/sold by the authorities in both exchange markets.

If there is automatic compensation of the current account disequilibrium, the free rate is quoted at a premium when the application of the official rate to all transactions would lead to an overall surplus in the balance of payments and not only to a surplus in the capital account. There is a discount in the opposite case. The various possible combinations are indicated in Table I.

TABLE I

| Imbalances that would be registered if the official rate were applied to all transactions | Discount/Premium of the free rate when there is automatic compensation of the current account imbalance |
|---|---|
| (a) current account deficit > capital inflow | Discount |
| (b) current account deficit and capital outflow | |
| (c) current account surplus < capital outflow | |
| (d) current account deficit < capital inflow | Premium |
| (e) current account surplus > capital outflow | |
| (f) current account surplus and capital inflow | |

It is interesting to note that with a two-tier market and automatic compensation of the current account disequilibrium, the official intervention agency records a profit in cases *c* and *d* in Table I and a loss in all other cases; the total profit or loss is equal to the product of the amount of foreign exchange acquired or sold in the free market and the premium or discount of the free rate vis-à-vis the official rate. This has two consequences. In the first place, a country with a current account surplus (deficit) (except in the cases *c* and *d*) will face the choice between accumulating (losing) reserves and sustaining the cost of the intervention in the free market. At times, this cost could be an important incentive to the correction of large and long lasting disequilibria even though variations in official reserves could be avoided by intervention in the free market.¹³ In the second place, there will be an increase (reduction) in the monetary base equal to the loss (profit) of the intervention agency. The maintenance of an unaltered level of international reserves will therefore not ensure that the balance of

¹³ J. M. FLEMING, "Dual Exchange Rates for Current and Capital Transactions: A Theoretical Examination", in *Essays in International Economics*, Allen and Unwin, 1971.

payments has a neutral effect on the monetary base; instead, there will be variations tending to aggravate the current account disequilibrium (in cases *a* and *e*) which could of course be offset by monetary intervention.

It has been implicitly assumed up to now that the net movement of capital may be effectively controlled by the interventions of the monetary authorities on the free market, i.e. that the market is sufficiently broad and elastic to absorb almost any volume of purchases and sales by the authorities. It may now be useful to examine more carefully the manner in which capital flows are in fact influenced by changes in the free rate. A drop in the free rate may encourage the inflow of capital in three ways: a) by increasing the effective rate of interest received by the foreign investors because a larger amount of domestic currency can now be obtained for the same amount of foreign currency, while interest payments (a current transaction) are transacted at the (unchanged) official rate; b) by increasing the probability of a future appreciation of the free rate and consequently of a capital gain; and c) reducing the risk of losses following a possible devaluation (see Table II). As an example, it may be useful to compare the incentive to capital inflow caused by an increase of domestic interest rates with that from a drop in the free exchange rate. Let us suppose that there are two categories of debt instruments — three-month bills and perpetuities — and that initially the respective rates of interest are 4 per cent and 5 per cent.

TABLE 2

| | Hypothesis A | | Hypothesis B | |
|--|---|------------|---|------------|
| | (Domestic interest rates unchanged but free rate depreciated by 4%) | | (Higher domestic interest rates but all transactions made at par) | |
| | 3-month Bill | Perpetuity | 3-month Bill | Perpetuity |
| (a) Increase of the effective interest rate on new investments . . . | 0.17 | 0.21 | 4.00 | 1.00 |
| (b) Capital gain should there be a return to the original values . . | 4.00 | 4.00 | about zero | 20.00 |
| (c) Loss in case of a subsequent 4% devaluation | — | — | -4.00 | -4.00 |

Table II illustrates how the profitability of investing in the country under consideration would change if the free rate were depreciated by, say, 4 per cent but domestic interest rates remained unchanged (hypothesis A); or, alternatively, if all transactions with other countries take place at parity but the rates of interest increase, for example, from 4 per cent to 8 per cent for the three-month bills and from 5 per cent to 6 per cent for the perpetuities (hypothesis B).

The example illustrates two extreme positions and neglects possible combinations in which a depreciation of the free rate is accompanied by an increase in domestic interest rates. The numbers in the example have been chosen in a purely arbitrary manner, but this does not alter the general validity of the conclusions that may be drawn from Table II. In brief these are:

(a) If the objective is to have a capital inflow over a fairly long period, increasing domestic rates of interest is a much more effective instrument than the free exchange rate because a very large depreciation in the free exchange rate is required to increase even modestly the rate of return on new foreign investment; for example, to increase the interest received by a foreign investor on a perpetuity from 5 per cent to 6 per cent, it would be necessary to depreciate the free rate by some 17 per cent.

(b) Depreciating the free rate is a more effective instrument than increasing domestic interest rates if the target is to attract substantial amounts of short-term capital, provided however that investors expect the disequilibrium to be only temporary and the free rate to return shortly to its original value.

(c) The free exchange rate also seems a very effective instrument when there is a widespread expectation of a change in par value; if, for example, foreign investors considered a devaluation likely in the near future, it would be almost impossible to prevent a substantial outflow of capital by increasing domestic interest rates since extremely high returns would be required to offset the probability of capital loss.¹⁴ With a two-tier market, instead, if the free rate were sufficiently depreciated to offset the fear of the capital

¹⁴ T. WILLETT, S. KATZ, W. BRANSON, "Exchange Systems, Interest Rates, and Capital Flows", *Essays in International Finance*, Princeton University, January 1971.

loss, a normal flow of capital in response to differences in interest rates could continue.¹⁵

Opposite conclusions hold in the case where the authorities desire to reduce rather than increase the inflow of capital: a two-tier market with a free rate above par is a useful instrument for reducing speculative inflows of capital, but it is less effective than changes in the domestic interest rates when the objective is to encourage a sustained outflow of capital.

III. The Two-Tier Foreign Exchange Market and the Efficiency of Monetary and Fiscal Policies

The preceding observations suggest that the introduction of a two-tier foreign exchange market could usefully increase the number of policy instruments available to the authorities. With the use only of the traditional instruments of monetary and fiscal policy there is often little freedom of maneuver in balancing such instruments to reach internal and external balance simultaneously; the introduction of a two-tier market could allow for a greater choice among various policy mixes.

In order to illustrate the possible use of this additional tool, we shall employ the familiar Mundell approach, so often followed in the literature on the effectiveness of monetary and fiscal policies in an open economy.¹⁶ It is assumed that unemployment exists at all times, that returns to scale are constant, and that money-wages and prices are fixed. It is also assumed that there are only four markets: those for goods, securities, money, and foreign exchange. A sufficient condition for general equilibrium is that three of these markets are in equilibrium, e.g. the markets for goods, money and foreign exchange.

The IS curve in the diagram is the locus of equilibrium points in the market for goods, i.e. of points where savings plus imports

¹⁵ Investors might reasonably expect that should the official parity be adjusted downwards, the free rate would decline by a lesser amount if at all. Indeed, if a devaluation is accompanied by a restrictive monetary policy, the free rate might even appreciate.

¹⁶ In particular, see R. A. MUNDELL, "The International Disequilibrium System", and "Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates" in *International Economics*, Macmillan, 1968. For references to the extensive literature on this subject, see, MARINA VON NEWMAN WHITHAM, "Policies for Internal and External Balance", *Special Papers in International Economics*, Princeton University, December 1970.

equal the sum of investment, exports and the budget deficit. If the exchange rate is fixed and expected to persist indefinitely, it may be assumed that the balance of trade depends only on income; savings and taxes rise with income, while investment is a declining function of the interest rate. The IS curve is therefore inclined downwards as shown in the diagram.

The LM curve is the locus of interest rates and income levels at which the demand for money equals the existing stock of money. The LM curve is inclined upwards, since the demand for money is a rising function of income, and a declining function of the interest rate. An expansionary monetary policy, defined as an open market purchase of securities, shifts the LM curve to the right, since it increases the stock of money. An expansionary fiscal policy, defined as an increase in government expenditure financed through an issue of bonds, shifts the IS curve to the right, since, for a given rate of interest, total expenditure is higher.

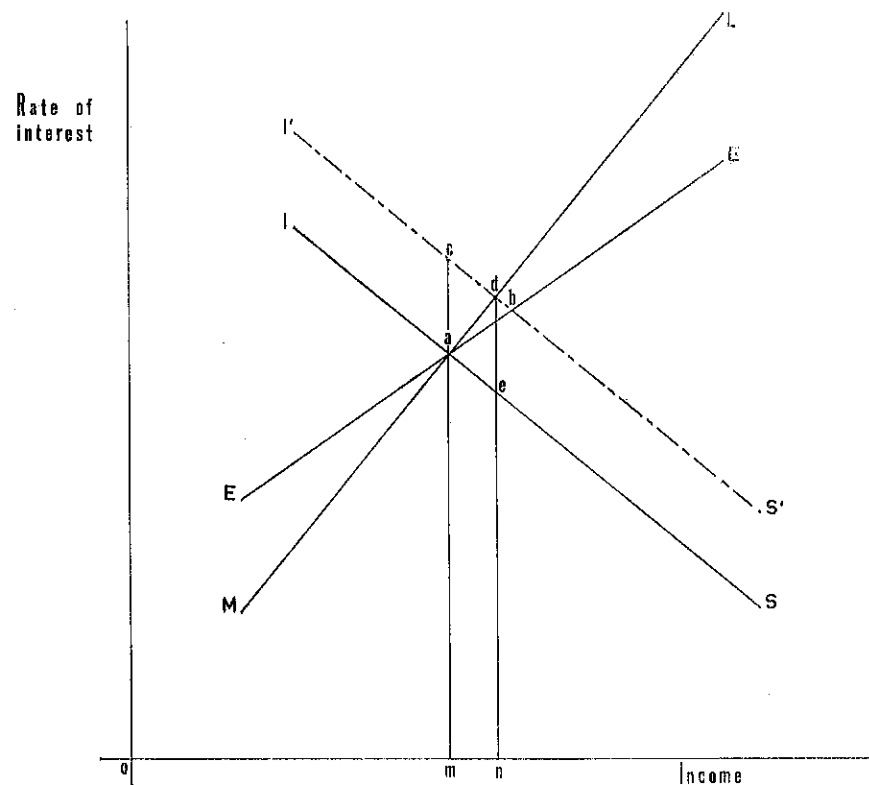
The EE curve is the locus of equilibrium points in the balance of payments, given a fixed exchange rate applied both to current and capital transactions. It is assumed here that capital mobility is less than perfect, and more precisely that capital flows are a function of the differential between domestic and foreign interest rates.¹⁷ The EE curve is therefore inclined upwards, since net imports are a rising function of income, while net capital inflows are a rising function of the interest rate (assuming that the rate of interest in the rest of the world remains constant). For a given propensity to import, the larger the interest elasticity of capital movements, the flatter is the slope of the EE curve.¹⁸ There is both internal and external balance when the three curves intersect (point *a* in the diagram).

In this model, a permanent increase in the level of income can be achieved only through fiscal policy. Suppose that the system is initially in equilibrium (at point *a* in the diagram) and that subsequently an expansionary fiscal policy increases the level of income while also pushing up the interest rate (and causing the IS curve

¹⁷ For a critical analysis of this hypothesis, see, T. WILLETT & F. FORTE, "Interest Rate Policy and External Balance", *Quarterly Journal of Economics*, May 1969.

¹⁸ In the extreme case of perfect capital mobility, that is, when domestic and foreign securities are perfect substitutes, the EE curve would be horizontal, indicating that balance of payments equilibrium is possible only when the domestic and the foreign rate of interest are equal.

to shift to the right, to IS'). Net imports are increased, but there is also a larger capital inflow, due to the higher rate of interest. The overall balance of payments, initially, may be either in surplus or in deficit, depending on whether the LM curve is above or below the EE curve to the right of point a (in the diagram, initially there would be a movement from a to d , where there is an external



surplus). However, since the authorities are committed to clearing any excess supply/demand of foreign exchange at the fixed exchange rate, any initial surplus/deficit causes an equal increase/decline in the stock of money, until equilibrium in the balance of payments is established. In the diagram, this would be shown as a shift in the LM curve to the right, to cross the new point of internal and external equilibrium (point b in the diagram) which is given by the intersection of the IS' and EE curves. The initial position of the LM curve is thus irrelevant for the determination of the new point

of internal and external equilibrium although it determines whether, when an expansionary fiscal policy is introduced, there is an initial external surplus or a deficit. It follows also that in this model an expansionary monetary policy can increase the level of income only temporarily, since it causes a continuous deficit in the balance of payments, due both to larger net imports and to capital outflows. Finally, it must be noted that, at each level of income, there is only *one* rate of interest at which it is possible to achieve both internal and external equilibrium, and this is determined by the position of the EE curve; that is, given the exchange rate, by the income elasticity of imports and by the interest elasticity of capital flows.

We shall now see how within this model the introduction of a dual foreign exchange market may alter the effectiveness of the two policy instruments. Consider again a position of equilibrium (point a in the diagram) and assume for simplicity that both current and capital transactions are in balance. Let there then be an expansionary fiscal policy that shifts the IS curve to the new position IS' and brings an initial equilibrium at point d , where the LM and IS' curves intersect. As was shown, point d is not a position of stable equilibrium with a fixed unitary exchange rate, since there is an external surplus that shifts the LM curve to the right until a stable equilibrium is reached at point b , where the EE and IS' curves intersect. This need not be the case, however, with a dual exchange rate, because the authorities could purchase foreign exchange in the free market only in an amount equivalent to their sales in the current market, and thus avoid any external surplus.¹⁹ In general,

¹⁹ It should be noted, however, that at any point above the EE curve in the diagram the free rate is at a premium (and viceversa) because, if all transactions took place at parity, above EE there would be an overall balance of payments surplus (and viceversa). As was seen in Section II, if the authorities acquire on the free market an amount of foreign exchange equal to the current account deficit and the free rate is at a premium, the intervention agency records a profit; thus, although official reserves remain unchanged, there is a contraction of the monetary base equal to the product of the foreign exchange acquired on the free market and the premium of the free rate vis-à-vis par. If, therefore, the monetary authorities wanted to stabilize income at a level lower than that which would produce equilibrium in the balance of payments (for example, at level d), and at the same time to maintain official reserves unchanged, they would have to create money continuously to offset the reductions due to the profits of the intervention agency. In the opposite case, that is, if they wished to stabilize income at a level higher than b , in order to keep official reserves unchanged, the free rate would go to a discount and the intervention agency would record a loss whose expansionary effects on the quantity of money would have to be neutralized by appropriate open market operations.

with a dual exchange market the balance of payments is no longer a constraint because it is always possible for the authorities to offset any surplus/deficit in the current transactions by equivalent sales/purchases of foreign exchange in the free market.²⁰ Since net capital flows can be regulated independently from the level of domestic interest rates by official purchases/sales in the free exchange market, it is possible to achieve both internal and external equilibrium at a given level of income at *different* interest rates — not at only *one* rate of interest, as in the case with a fixed unitary exchange rate.²¹

In general, with the dual exchange rate, if the authorities offset all current imbalances through the free market, both fiscal and monetary policy become effective, and equilibrium is determined only by the intersection of the LM and IS curves. The possibility of using effectively both fiscal *and* monetary policy — instead of fiscal policy alone, as with the unitary exchange rate — to increase the level of income may be of great importance when growth considerations are taken into account (in the diagram, when income is increased from *om* to *on*, the rate of interest is *en* if monetary policy is used, and *dn* if fiscal policy is used).²² Moreover, there may be institutional and political obstacles to the use of fiscal policy for stabilization purposes, that could limit the use of this instrument in practice.

²⁰ It is possible however that beyond certain limits capital flows would cease to respond to any further appreciation/depreciation of the free rate, making it impossible for the authorities to sell/purchase the desired amounts on the free market. Therefore, even apart from the problem of the increasing incentive to tax evasion, there may be in practice limits to the possibility of varying the level of income while maintaining external balance with a two-tier exchange system.

²¹ Another aspect that should be considered is the wealth effect. When the domestic interest rate increases there is a negative wealth effect due to the drop in the market value of existing bonds (assuming that the private sector is a net creditor of the public sector and hence the losses of private creditors are greater than the profits of private debtors). This, together with the increase in the rate of interest, tends to reduce domestic demand. With a two-tier system, however, when the authorities resort to purchases in the free market rather than to changes in interest rates to avoid an external deficit, the depreciation of the free rate has an overall negative wealth effect only if the total debts of residents in foreign currency are greater than their total assets in foreign currency. The two-tier market may therefore be utilized to re-equilibrate the balance of payments while scarcely generating any negative impact on domestic demand.

²² See G. K. SHAW, "Monetary - Fiscal Policy for Growth and the Balance of Payments Constraint", *Economica*, May 1967.

Of course, under a dual exchange market the authorities could intervene in the free market so as to offset current imbalances only *partially*; in this case there would be a loss/gain in reserves, which would tend to increase/reduce the stock of money (unless it was continuously neutralized by appropriate open market operations in domestic securities), and to shift the LM curve, as in the case of the unitary exchange rate. Internal and external balance could then be found along the IS curve only at a level of income where the trade balance equalled the net purchases/sales by the authorities in the free market; the effectiveness of monetary policy would then be limited, as in the case of a uniform fixed exchange rate.

In conclusion, with a dual exchange rate, provided that the authorities offset all trade imbalances through dealings in the free market, monetary policy becomes an effective instrument of income stabilization.²³ The similarity in the reasoning used when arriving at the same result for a floating exchange rate system is worth noting, although, for brevity, we do not discuss such a system here. In neither case is the balance of payments a constraint on decision making, but while with the flexible exchange rate a potential balance of payments disequilibrium is corrected through adjustments in both current and capital transactions, with a dual market the adjustment will be borne by the capital account.

IV. Conclusions

To summarize, one of the more interesting features of the two-tier foreign exchange market is that it allows the authorities to regulate the net flows of capital independently of the relative levels of domestic and foreign interest rates, if only within certain limits. Not only may the system be used to protect the domestic economy against massive flows of capital due to expansionary (contractionary) monetary policies followed by other countries; it

²³ In general, if monetary policy is used to achieve an increase in income, reserve losses can be avoided only by depreciating the free exchange rate because, at parity, in addition to a trade deficit there would be also a capital outflow; if, instead, fiscal policy is used, the free exchange rate could even rise because the domestic rate of interest would be higher.

²⁴ It should also be borne in mind that the major industrial countries have as a policy target the *structure* of their balance of payments. In other words, they are not satisfied simply by an overall balance of payments surplus; they frequently desire a surplus

may also allow substantial autonomy in the use of monetary policy for stabilization purpose.²⁵

It has been shown in Section II that the two-tier exchange market is especially effective as a short-run instrument both for encouraging and for discouraging net capital flows. In the long-run the maintenance of a substantial difference between the free rate and the official rate may prove difficult in practice in view of the increased incentive to evade administrative controls and the cost to the intervention agency. In general, the two-tier system reduces or eliminates the inflationary (deflationary) effects that would otherwise result from a surplus (deficit) in the balance of payments, if the authorities offset all current account imbalances with equivalent purchases/sales on the free market. This characteristic — as well as the possibility of controlling speculative flows — may enable the authorities to use vigorous internal policies for an extended period. There is therefore the danger that the correction of fundamental disequilibria may for this very reason be unduly delayed. It should be noted, however, that the widening of the differential between the free rate and the official rate may itself represent an automatic danger signal for the authorities; moreover, the cost of maintaining a high differential may also be a strong incentive to adjusting the par value.

The introduction of a free rate could also be desirable from the point of view of equity as it tends to reduce the substantial capital losses or gains that occur when the parity is changed under the adjustable peg system. If the free rate of a weakening currency progressively depreciates over time — as one would expect, especially if the authorities pursue a policy of automatically offsetting the current account deficit — it may already be at a level not far from the new parity when the devaluation occurs, so that it may not be much affected by the change in par value. The incentive to large speculative flows will then no longer exist and concomitantly

on current account and a deficit on capital account. Such a composition of the balance of payments is not easily achieved with the instruments at present available. See, A. LAMPALUSSY, "Limitations of Monetary and Fiscal Policy", in *Maintaining and Restoring Balance in International Payments*, *op. cit.*

²⁵ It is also interesting to note that if the goal is to encourage short-term capital inflows, the free rate can be successfully used even where there is no well-developed money market and where in consequence the interest rate cannot always be used. The adoption of a free rate can therefore be advantageous for less developed and less sophisticated economies.

the pressures for postponing the adjustment of the par value would be reduced.²⁶

Of the other solutions proposed for reducing the destabilizing effects of capital flows, those that seem to have the greatest possibility of being adopted are the generalized introduction of administrative controls of various kinds and/or the widening of the margins around par to some 3-4 per cent.

The imposition of selective controls on specific categories of capital movements inevitably introduces arbitrary distortions; moreover, given the fungibility of different kinds of capital, selective controls can be evaded more easily than could the rules of a two-tier market which simply distinguish between current and capital account transactions. Selective controls are also difficult to eliminate once introduced, and they cannot be changed without encountering administrative difficulties. By contrast, the two-tier market is a highly flexible instrument whose effects can be regulated over time by the intervention of the monetary authorities in the free market.²⁷

The two-tier market also allows very large *gross* movements of capital to take place, while leaving the net flow under the authorities' control. There may thus be flows of different types of capital and these may increase both the competitiveness and the efficiency of national and international money and capital markets, irrespective of the net flows.²⁸

It seems doubtful whether the widening of the margins around par could be as effective as the two-tier market in reducing undesired capital flows.²⁹ Consider, for example, the case of a country that has a current account deficit and wishes to pursue a restrictive monetary policy to reduce domestic demand. To avoid a capital inflow that would neutralize the restrictive effect of the chosen

²⁶ Two forward cover markets would come into existence, one for the official exchange and the other for the free exchange; the rates on the two markets could at times be substantially different. If the free rate were, for instance, depreciated vis-à-vis parity, the cost of forward cover would normally be lower than it would be with a single exchange rate when the operators expect a devaluation. Therefore, with well-coordinated policies the authorities could more easily nudge capital movements resulting from arbitrage in the desired direction. The authorities could intervene more easily in the forward market for current exchange — without having to intervene also in the free market — and thus reduce the cost of forward cover for current transactions.

²⁷ Selective controls and the two-tier market would entail administrative costs of a substantially similar magnitude.

²⁸ C. KINDLEBERGER, "Balance of Payments Deficits and the International Market for Liquidity", *Essays in International Finance*, Princeton University, May 1965.

policy, the authorities would have to sell foreign exchange so as to push the exchange rate quickly towards its upper margins.³⁰ In this way, a depreciation of the exchange rate might be expected by investors over a relatively short period, and capital inflows would be discouraged in spite of the higher level of domestic interest rates.

However such expectations might not always be realized. Even if they were, only short-term capital inflows would be discouraged, not the longer-term movements.³¹ Finally, if there were, as was assumed, a current account deficit, an intervention on the foreign exchange market intended to push the exchange rate to its ceiling would tend to worsen the current disequilibrium, and could in addition involve a substantial loss of reserves which may not always be available. With a two-tier market, a capital inflow could be avoided regardless of the expectations of investors; no loss of reserves would be necessary, while the rate for current transactions would tend to remain substantially unchanged.

Conclusions favorable to the two-tier market can also be reached in the case of a country that has a current account surplus and wishes to pursue a restrictive monetary policy. In this case, with the wider band, once the exchange rate has reached its higher intervention point, it would be scarcely realistic to assume that operators would expect a depreciation of the rate, and hence there would be no disincentive whatsoever to capital inflows.

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²⁹ It should be stressed that a wider band would have essentially the function of helping to correct cyclical disequilibria. Divergent rates of inflation and/or different income elasticities of imports could well bring about fundamental disequilibria in the balance of payments. Such disequilibria would have to be corrected through parity changes. For a detailed analysis of the effects of a widening of the margins and of the crawling peg, see, V. BARATTIERI and R. PATTI, "Verso un nuovo assetto del sistema monetario internazionale", *Economia Internazionale*, May 1971; and the Report of the Executive Directors, *The Role of Exchange Rates in the Adjustment of International Payments*, International Monetary Fund, 1970.

³⁰ The appreciation of the exchange rate would have to be achieved quite rapidly so as to avoid a speculative influx of capital. However, this would not always be easily brought about since the sale of foreign currency would have to be coordinated with the sale of domestic bonds and the increase in the domestic interest rate.

³¹ It can be seen from Table 1 that a drop in the interest rate from 6 per cent to 5 per cent on a perpetuity gives rise to a capital gain of 20 per cent, more than sufficient to offset an eventual loss of 3-4 per cent in the exchange rate.