



**Capital Mobility and Stabilization under Fixed and Flexible Exchange Rates:  
A Comment**

Alex N. McLeod

*The Canadian Journal of Economics and Political Science*, Vol. 30, No. 3 (Aug., 1964),  
413-421.

Stable URL:

<http://links.jstor.org/sici?sici=0315-4890%28196408%2930%3A3%3C413%3ACMASUF%3E2.0.CO%3B2-P>

---

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

*The Canadian Journal of Economics and Political Science* is published by Canadian Economics Association. Please contact the publisher for further permissions regarding the use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/cea.html>.

---

*The Canadian Journal of Economics and Political Science*  
©1964 Canadian Economics Association

JSTOR and the JSTOR logo are trademarks of JSTOR, and are Registered in the U.S. Patent and Trademark Office. For more information on JSTOR contact [jstor-info@umich.edu](mailto:jstor-info@umich.edu).

©2003 JSTOR

## NOTES AND MEMORANDA

### CAPITAL MOBILITY AND STABILIZATION UNDER FIXED AND FLEXIBLE EXCHANGE RATES: A COMMENT\*

ALEX N. McLEOD  
*The Toronto-Dominion Bank*

#### I. CAPITAL MOBILITY

THERE is nothing very new in the realization that the international mobility of capital greatly complicates the operation of domestic stabilization policies, but a thorough study of just what the implications are is badly needed. Mundell's article,<sup>1</sup> however, is not primarily addressed to this problem; instead it is a comparative study of monetary and fiscal policies on the basis of a number of simplifying assumptions, of which the perfect mobility of capital is only one—and not necessarily the most radical.

Mundell's paper does give us several arresting glimpses of the policy implications of capital mobility. For example, the difficulty of simultaneously controlling the money supply and the exchange rate is clearly brought out; under certain conditions the authorities may find themselves simply trading foreign exchange reserves for domestic assets, as the discussion of exchange-sterilization operations on pages 479–81 illustrates. Another case (pp. 477–8) indicates that capital mobility may sometimes be made use of for domestic policy purposes, instead of thwarting them. Nevertheless the treatment is far from exhaustive.

#### II. THE SIMPLIFYING ASSUMPTIONS

Let us turn now to the paper on stabilization that Mundell did write, as distinct from the paper on capital mobility that he did not write. In this section we will examine his working assumptions. In Section III we will examine the analytical model he builds on the basis of these assumptions. Finally, in Section IV we will consider the adjustments that must be made in the conclusions to be derived from Mundell's analytical model in order to take account of the differences between the assumed conditions of the model and the actual conditions of the real world; these adjustments are of course necessary if we are to draw policy conclusions that will be valid for practical application.

In principle the economic analyst is entitled to make whatever assumptions he thinks best, recognizing that the simpler he makes them the more tractable his model is likely to be but the more difficulties he is likely to store up for himself when it comes to adapting his conclusions to the real world. Nevertheless his critics are entitled to complain if they feel that his assumptions are

\*The views expressed in this comment are of course those of the author only and not necessarily those of The Toronto-Dominion Bank.

<sup>1</sup>"Capital Mobility and Stabilization Policy under Fixed and Flexible Exchange Rates," this JOURNAL, XXIX, no. 4, Nov., 1963, 475–85.

unduly narrow or unrealistic, or unnecessarily exclude factors that have a bearing on the subject under analysis, for the usefulness of his work will suffer as a result. With this in mind we may divide our criticisms of Mundell's assumptions into two distinct groups.

### 1. *Incongruous Assumptions*

The first group of criticisms relates to incongruities:

a. The assumption that existing exchange rates are expected to persist indefinitely and that complications associated with speculation and the forward market do not exist is inappropriate for the analysis of situations in which exchange rates are actually allowed to fluctuate beyond a narrow range.

b. The assumption of unemployed resources, constant returns to scale, and fixed money wages is *not* equivalent to the assumption that the supply of domestic output is elastic and its price level constant if in fact the exchange rate changes, except perhaps for small movements around an equilibrium rate under conditions appropriate to particular equilibrium analysis. Greater rate changes would require general equilibrium analysis; at the very least, allowance would have to be made for the prices of exports and imports (including the import content of domestic production) to be set at world levels.

Since a substantial portion of the analysis purports to deal with conditions of fluctuating exchange rates, these assumptions seriously impair the usefulness of the model. However, they do simplify the analysis. Beyond calling attention to them here, however, no attempt will be made to identify their influence on Mundell's conclusions.

### 2. *Rigid Functional Relationships*

The second group of criticisms relates to undue rigidities in functional relationships:

c. The assumption that investment depends (only) on the interest rate precludes any stimulus to income-creating expenditures from such factors as the increased availability of funds, a prospective improvement in profits, or the acceleration principle.<sup>2</sup> It also prejudices the ability of the model to achieve a new equilibrium as income rises, because it leaves a capital outflow or a government deficit as the only offsets to the corresponding increase in saving. When coupled with the assumption that the interest rate is given by conditions in world capital markets, it implies that investment is a constant.

d. The assumption that the demand for money depends only on income and the interest rate does not fairly represent modern monetary thinking. Even at a given income level and a given interest rate, the public's liquidity preference may be altered gradually (e.g., by the accumulation of wealth in the form of physical assets and liquid financial claims) or abruptly (e.g., by improved expectations about future business conditions, possibly brought about by the announcement of policies designed to stimulate the economy). Mundell's

<sup>2</sup>Cf. P. A. Samuelson, "Interactions between the Multiplier Analysis and the Principle of Acceleration," *Review of Economic Statistics*, XXI, no. 2, May, 1939.

rigid demand-for-money function,<sup>3</sup> when coupled with the assumption that the interest rate is given, throws us back on something hardly distinguishable from one of the cruder forms of the quantity theory of money.

These two assumptions seriously limit the effectiveness of monetary policy as normally conceived; since a major purpose of the analysis is to test the effectiveness of monetary policy it follows that these assumptions also impair the usefulness of the model. Unlike the first two assumptions, however, they do not materially simplify the analysis; at the level of generality which Mundell attempts it should have been possible to employ more realistic assumptions about the interrelationships among investment, money, income, interest rates, and other variables without materially increasing the complexity of the discussion.

Among other things the "rigidity" assumptions appear to explain a certain peculiarity of the process of monetary expansion as Mundell envisages it, namely, the fact that it is brought about exclusively by the purchase of existing securities by the banking system from the general public<sup>4</sup>; there is no bank expansion through new productive loans to private borrowers, nor do those who sell securities to the banks employ any part of the proceeds in new enterprises. By hypothesis a positive inducement to invest cannot be provided through a reduction in the interest rate, and quite properly so, since this is just the situation Mundell wishes to examine. But by hypothesis a positive inducement to invest cannot be provided by raising the expected rate of return on capital goods either, for no apparent reason. Monetary policy in the model is thus pretty well emasculated from the start.

It should also be noted that it would require only a relatively small modification in the assumptions to make a very substantial difference in the operation of the model. That is to say, a relatively slight flexibility in the rate of investment possible at a given rate of interest, a relatively slight flexibility in the money supply the public was willing to hold at a given income level and interest rate, or a relatively slight imperfection in capital mobility (reflected in a modest differential between domestic and foreign interest rates) would be enough to permit a cumulative process of expansion that would continue until full employment was reached.

### III. THE ANALYSIS

Even within the limitations imposed by his simplifying assumptions, however, the logic of Mundell's analysis is far from rigorous and his results are

<sup>3</sup>Note that the context clearly shows it to be a definitive relationship, not merely a permissive one. That is to say, it is not merely that at a given rate of interest the public would *prefer* to hold money in a fixed ratio to income, which would leave open the possibility that a modification in the preferred ratio might be accepted under certain conditions; the public evidently *insists* on holding money in this fixed ratio, and if necessary will alter its spending pattern in order to restore it.

<sup>4</sup>There seems to be some confusion in terminology in this respect. Mundell speaks of central bank open market operations, but the context implies that what is meant is the acquisition of existing securities from the general public by the banking system as a whole.

by no means definitive. His description of the outcome under the various circumstances he considers may be plausible enough, provided certain conditions (not always fully specified) are deemed to obtain, but they are not the only possible and not necessarily the most probable results.

### 1. Monetary Policy

If it is literally true that the country in question cannot maintain an interest rate different from the general level prevailing abroad, how can a central bank carry out open-market purchases of securities at all? At the given income level and interest rate no one will want to part with his existing holdings of securities in exchange for money.<sup>5</sup>

Mundell evades this *cul-de-sac* by permitting, in effect, some deviation between the domestic and the world rates of interest, which sets off an outflow of capital and thereby puts downward pressure on the exchange rate or on exchange reserves. He concludes that with a fixed exchange rate the authorities would have to abandon the attempt to expand the money supply because their open market purchases would be exactly offset by the sale of foreign exchange in defence of the fixed rate, but that with a flexible rate they could effectively raise income and employment because the capital outflow would depreciate the exchange rate instead of depleting the reserves and would thus produce an export surplus. To put it a little more bluntly, the difference between the two situations lies in the fact that under flexible exchange rates monetary policy can be used unobtrusively to bring about the export of unemployment.<sup>6</sup>

It is patently reasonable to suppose that the authorities can effect a reduction in domestic interest rates, as Mundell does, even if it is only a slight and temporary reduction. For a time at least the central bank (with or without the co-operation of the rest of the banking system) could buy up the public's pre-existing holdings of domestic securities at a somewhat higher price (lower interest rate) than the going rate for foreign securities, and would find itself acquiring domestic securities while losing exchange reserves, with the money supply somewhat (though perhaps only slightly) greater than at the start. The public for its part would be exchanging domestic securities for higher-yielding foreign securities and thus adding to its foreign assets as rapidly as the central bank was depleting its reserves.

However, Mundell fails to point out that this temporary reduction in the interest rate will also stimulate some new domestic investment, which in turn will generate a multiple expansion of income. Among other things, of course, this will add to import demand and cause (or add to) a deficit in the current account of the balance of payments, which must be covered by net foreign borrowing. Nevertheless the amount of the necessary foreign borrow-

<sup>5</sup>It may be suggested that foreigners may be induced to sell securities in exchange for domestic money. However, this will not do either. As indicated in a footnote to Table I, foreign holdings of domestic money are negligible; and even if this point is waived any increase in money balances held by foreigners would contravene the assumption that the money supply is determined solely by income and the rate of interest.

<sup>6</sup>If a lower exchange rate is appropriate under a fluctuating rate system, why not alter the rate directly by intervention in the exchange market instead of indirectly by monetary expansion? The same thing can, of course, be achieved equally effectively under a fixed rate system by an overt devaluation.

ing can be minimized and the interest differential maximized if the increase in bank loans (or the purchase of securities by the banking system) at the lower domestic interest rate can be limited to borrowers who are actually undertaking new domestic spending programs, presumably of a capital nature. Domestic savers will be unaffected since they will still be able to obtain the world-market rate by buying foreign securities, but spenders will get money at the lower domestic rate. The central bank will be out the cost of whatever subsidy it offers on domestic borrowing, but central banks are not supposed to balk at losses if they are in the public interest.

But is it true that under a fixed exchange rate the authorities must abandon their efforts to expand income and employment by monetary policy? No, not as long as they are able to borrow abroad, because foreign borrowing is an effective alternative to the depletion of exchange reserves. The "temporary" reduction in interest rates and the consequent expansion of investment, income, and employment can be continued as long as the foreign borrowing can be continued—which is to say indefinitely, since all securities in the system are perfect substitutes.

The same line of reasoning would apply in the case of flexible exchange rates, *mutatis mutandis*, if the authorities wished to avoid exchange depreciation and to use the domestic interest rate to stimulate investment rather than to bring about an export surplus. In fact, by regulating their own foreign borrowing accordingly, they could even bring about an appreciation instead of a depreciation of the exchange rate if they thought that seemed desirable. This accords with the belief that the exchange rate is ultimately determined by domestic policies regardless of whether it is formally fixed or flexible.

## 2. The "Illiquidity Trap"

Even if we disregard the preceding three paragraphs, however, and accept Mundell's conclusions about the effectiveness of monetary policy at face value, it is clearly the rigidity of his assumptions rather than the inherent characteristics of monetary policy that lead to his particular conclusions. What he seems to have done is to postulate conditions which are very similar to those of the famous liquidity trap; for institutional reasons the interest rate cannot be driven down, hence investment cannot be stimulated, hence income stagnates. In this case, however, the stickiness of the interest rate is due to the availability of high returns on investment abroad rather than to the nature of the domestic liquidity-preference function. Perhaps we should call Mundell's case an "illiquidity trap," since it is based on conditions which prevent the public from getting the liquidity (i.e., the increase in the money supply) it needs.

## 3. Fiscal Policy

The modern conception of fiscal policy originated in the need to supplement the passive "permission to spend" aspect of monetary policy with an active "will to spend" which was not forthcoming from the private sector because the "liquidity trap" became operative under depression conditions. Can we not escape the "illiquidity trap" in the same way?

Mundell concludes (p. 428) that fiscal policy will not be effective under flexible exchange rates; it will indeed tend to expand income, but this will increase the demand for money, raise the interest rate, bring a capital inflow, appreciate the exchange rate, and reverse the original expansion of income. However, this conclusion is in fact nothing but a tautological creation of his assumptions; by hypothesis income and the money supply must vary in exact proportion, hence no expansion can be brought about by fiscal (or any other) policy as long as the money supply is held constant.

The rather different conclusion about the efficacy of fiscal policy under fixed exchange rates (p. 479) depends entirely on the assumption that in fact the money supply is subsequently allowed to rise. A strict reading of the assumed relationship between money and income suggests that an increase in government expenditure without a *simultaneous* increase in the money supply would have to be financed by a diversion of funds from some other part of the spending stream, starving some other would-be spender, and hence could not result in any increase in income.

#### 4. Co-ordinated Monetary and Fiscal Policy

A well co-ordinated combination of fiscal and monetary policy, which is widely regarded as the keystone of modern stabilization procedures, should work effectively despite Mundell's rigid assumptions; a suitable increase in government spending would ensure the expansion of income and employment even though investment remained fixed, and a suitable amount of monetary expansion should just accommodate the rise in income without any untoward effects on the rate of interest. Mundell never specifically discusses this possibility, but it is really the solution he arrives at in the passage just referred to, dealing with the application of fiscal policy under fixed exchange rates. It is also clear that the same solution could be made equally effective under a flexible exchange rate policy, regardless of whether it was deemed best to depreciate the rate, hold it stable, or appreciate it.

Mundell does consider one special case of combined operations of monetary, fiscal, and exchange policies, namely central bank financing of budget deficits with a fixed exchange rate (p. 480), but it involves continuing central bank financing of the whole deficit. He concludes that income will expand, the money supply will increase in accommodation, and there will be a once-for-all increase in reserves, but that thereafter reserves will fall at a rate equal to the budget deficit.

Two brief comments on Mundell's analysis of this special case will suffice. (i) As in the fiscal-policy case on p. 479, central bank open market purchases to monetize the deficits will not cause an exchange drain as long as they are not carried beyond the point necessary to satisfy the demand for money appropriate to the new level of income brought about by government spending (which will presumably be the full employment level). (ii) When fiscal policy has done its best and the appropriate once-for-all increase in the money supply has been achieved there would appear to be no point in continuing to monetize the deficits, which could thereafter be financed by a capital inflow.

### 5. *The Foreign Drain*

In summary, the real limitation on the use of monetary and fiscal policies to expand income and employment in an open economy turns out to be simply the old familiar "foreign drain" that has played such an important role in the literature for at least thirty-five years,<sup>7</sup> not to mention the much older version of essentially the same idea in the "external cash drain" that limits credit expansion in purely institutional money-and-banking theory going back at least to the bullionist controversies. Of course, Mundell never uses the term "foreign drain," and it is a rather sophisticated version of the concept that makes its appearance here, in which international movements of financial capital play a major role.<sup>8</sup> Indeed it is precisely in this respect that Mundell makes some of his most significant contributions; nevertheless it is essentially the foreign drain that negates monetary policy with stable exchange rates and that prevents the continued financing of government deficits by the central bank in his model. His version of monetary policy under fluctuating rates only escapes the same limitation because he uses it to depreciate the exchange rate and thereby to set the export multiplier in motion. It is interesting to note that he does recognize that there will be an import surplus (foreign drain) as a result of a fiscal stimulus under fixed exchange rates (p. 479), and in this instance observes that it will be automatically covered by a capital inflow.

It is particularly curious that, with the one exception just noted, the foreign drain should be considered a limit on domestic stabilization policies in a model in which capital is perfectly mobile between countries, since in such a model foreign borrowing is always a readily available and perfect substitute for a drain on reserves. Indeed, in a world in which domestic supply is infinitely elastic, capital moves freely between countries, and all securities are perfect substitutes, how could the economy possibly have fallen into the postulated condition of under-full employment? Some reasonable combination of monetary and fiscal policies should clearly have maintained full employment with ease, and any external drain that resulted would have been painlessly met by a capital inflow. There would certainly be no need to reduce exchange reserves (nor, for that matter, any need to hold any reserves in the first place), and there is nothing to suggest the need for or the desirability of exchange depreciation. Surely only mischance or ignorance or folly could have brought unemployment to this Eden.

## IV. THE CONCLUSIONS

The harshest criticism of Mundell's paper must be reserved for his attempt to draw from the model policy conclusions that are applicable in the real

<sup>7</sup>Implicitly or explicitly it is included in the various "multiplier" computations, going back at least to a version of the foreign trade multiplier developed in 1928 by the Australian Development and Migration Commission, as reported by D. V. Copeland in *Australia in World Crisis, 1929-1939* (New York, Cambridge, 1934), 12.

<sup>8</sup>Theoretical treatments of the "foreign drain" tend to be in terms of increased import demand, but the importance of autonomous capital movements has long been recognized also, as is implicit, for example, in any discussion of a capital flight.



world, including both broad generalizations valid for all countries at all times and specific remedies valid for a particular country (Canada) at a particular time, without effectively relaxing or correcting for his simplifying assumptions. This is inexcusable, and can only bring discredit on the economic profession if allowed to go unchallenged.

Mundell unqualifiedly claims to have demonstrated that, with perfect capital mobility, monetary policy has no impact on unemployment under fixed exchange rates but high impact under flexible rates, and that fiscal policy has high impact under fixed rates but no impact under flexible rates. This is not correct; even on his restrictive assumptions it turns out that there is no newly discovered incompatibility between monetary policy and fixed exchange rates or between fiscal policy and flexible rates, and that the main limitation on these policies continues to be the old familiar "foreign drain." Many of his other conclusions appear to be quite bold and dramatic simply because they are starkly stated without any reference to the limiting conditions on which their validity depends; were he to relax his assumptions, as we may reasonably require him to do before attempting policy applications, the inferences to be derived would be altered in kind not just in degree.

Even after relaxing the simplifying assumptions, however, it would be necessary to have certain basic factual information before recommending any particular policy or predicting its results. One would have to know such things as whether the conditions in the rest of the world were those of full employment; whether the initial exchange rate was at, above, or below what appeared to be a reasonable equilibrium level; and what led to the under-full employment situation in the country under study. For example, if the world as a whole were experiencing chronic unemployment it would be unrealistic to suppose that even for a small country the repercussions of a policy that stimulated the economy solely by causing currency depreciation would be the same as those of some measure that expanded domestic effective demand, since one would have deflationary effects on the rest of the world whereas the other would have expansionary effects. If the exchange rate were overvalued, it would be fatuous to expect an expansionary fiscal policy at the old exchange rate to effect a satisfactory cure; if it were not overvalued, exchange depreciation might distort the price structure and cause a misallocation of resources that would become burdensome once the cost-price structure had realigned itself again. If the root of the trouble were a crop failure for a major export product, the appropriate solution and the response of the economy would surely be different again; if it were a permanent loss of markets due to technological changes, different still; and so on. Mundell is silent on these questions.

In his penultimate paragraph Mundell attempts to apply his analytical model to the Canadian economy, subject only to the question of the validity of his assumption about capital mobility. Actually, this is perhaps the least doubtful of his assumptions in that case; it is clear that over the period in question capital has been very mobile indeed between Canadian and American financial markets, though there is room for important differences of opinion about

the extent to which interest rate differentials can be reduced in the future.<sup>9</sup> Before he could expect to be taken seriously, however, he would have to deal forthrightly with his many other simplifying assumptions and with the factual questions just referred to.

Nevertheless Mundell's analysis contains some valuable points. His version of the "foreign drain" is a sophisticated one, and skilfully incorporates international financial movements in response to interest rate differentials. Although he gives a somewhat distorted picture of the limitations thus put on the effectiveness of stabilization policies, he certainly does drive home how real these limitations are in an open economy. Some of the special cases he discusses are closely parallel to actual instances in which self-defeating policies have been pursued by more than one country in apparent ignorance of the fundamental relationships involved.

<sup>9</sup>Even if future experience proves that interest differentials will tend to disappear when net flows become negligible, it may be found that they will reappear in opposition to substantial net flows in either direction.

## A REPLY: CAPITAL MOBILITY AND SIZE

R. A. MUNDELL  
*McGill University*

THEORY is the poetry of science. It is simplification, the essential abstraction, the exaggeration of truth. Through simplification theory creates a caricature of reality. Through deduction the premises of the caricature are translated into empirical—and therefore refutable—generalizations. The caricature itself is not the real world—it mocks it. Yet mind true things by their mockeries! The caricature mocks reality; the deductions from the caricature illuminate it.

Dr. McLeod does not like my caricature;<sup>1</sup> he calls<sup>2</sup> my assumptions unrealistic and too narrow, an oversimplification. He challenges my logic and considers a conclusion "nothing but a tautological creation of [my] assumptions."

I certainly hope McLeod is right. I hope my assumptions are unrealistic. If they were not, I could not have made a contribution to theory. I left out a million variables in my analysis and that made my caricature of reality unrealistic. At the same time it enabled me to find fruitful, but refutable, empirical generalizations. I hope, too, that my conclusions are tautological creations of my assumptions. That means my deductions are free of logical error.

### I. THE STRANGE WORLD OF MR. MCLEOD

There is nothing in McLeod's odd notions about economic science, profusely illustrated throughout his comment, that suggests my conclusions need any

<sup>1</sup>In "Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates," this JOURNAL, XXIX, no. 4, Nov., 1963, 475-85.

<sup>2</sup>Alex N. McLeod, "Capital Mobility and Stabilization Policy Under Fixed and Flexible Exchange Rates: A Comment," *ibid.*, XXX, no. 3, Aug., 1964, 413-21.