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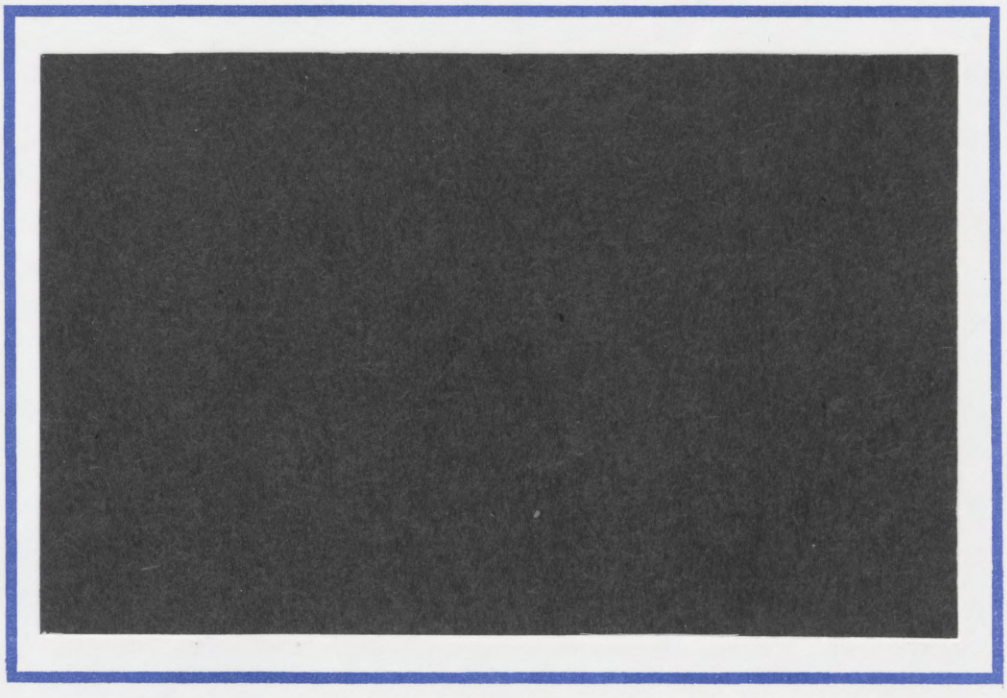

מכון למחקר כלכלי ע"ש ד"ר ישעיהו פורדר ז"ל

ע"י אוניברסיטת תל-אביב

THE BALANCE-OF-PAYMENTS ADJUSTMENT MECHANISM

THE DOCTRINE ACCORDING TO OHLIN

by

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For many years the central question in international macro-economic (or monetary) theory was phrased as follows:

What is the mechanism (if it exists) by which an exogenous shock to some component(s) of a country's balance of international payments is followed by a restoration of equilibrium in that balance of payments? Does such an equilibrium exist, and is it stable? And if the answer to both of these is yes, what does the dynamic process of adjustment look like? Which variables in the economy of the several countries involved are likely to be most affected? What values of which parameters augur well or ill for the stability of the system? What, if anything, can or should governments and monetary authorities do (or refrain from doing) in order to expedite the process? What in fact do they do to expedite or hinder it?

The 'standard' text-book discussion of this problem usually begins with a history of the theories or doctrine on this subject, and divides the profession chronologically and intellectually into two categories, 'classical' and 'Keynesian'.

The ultra-naive textbook version of the classical theory which, as far as I can ascertain, never existed is:

An imbalance in the basic balance of payments[1] leads to pressure on exchange rates until the gold shipping (export or import) point is reached. At that point gold flows between countries, causing identical changes in the money supply in the case of a pure metallic currency, and proportional changes in the money supply where there is a well-behaved fractional-reserve banking system. This leads to changes in the price levels of the two countries,

causing appropriate changes in the trade balance, after which the specie flow stops. This mechanism is generally attributed to David Hume and labelled the 'classical', the 'gold-standard', the 'classical-gold-standard', or the 'price-specie flow-mechanism.'

Most of the examples in these stylizations deal with adjustment to a disturbance in the capital account of the balance of payments, generally a change in long-term borrowing, but often a unilateral payment such as, not accidentally, a payment of reparations from the loser to the victor following a war. There is typically a statement to the effect that there might be any one of a number of disturbances, but that the mechanism is the same in any case, so "... consider, for example, a capital flow."[2]

A less naive view of the adjustment mechanism has more categories than the two aforementioned. In this view there is 'classical', 'neo-classical', and 'Keynesian." I shall argue that there are really at least four categories (and a possible fifth, to be revealed below), which I label: pure classical, neo-classical, late classical, and keynesian. This classification is useful for a discussion of the literature through the early post-world-war-II period. After about 1960, we need additional categories.

The 'classical' and 'keynesian' views are relatively clear-cut and non-controversial. It is the distinction between the neo-classical and the late classical, and between either and both of these and the other two which gives rise to a certain amount of difficulty and controversy.

I. Pure Classical The less-naive view of this theory is that the classicists recognized that commodity arbitrage prevents the prices of internationally traded goods from being different in different countries at the same time.[3] The naive story, as told above, applies, with the important

correction that the price level changes in the two countries result from changes in the prices of differentiated traded goods or close substitutes to traded goods.[4] There may be changes in the prices of traded goods as well - that is, in fact, the subject of the whole controversy about what happens to the terms of trade - but the price of a given good will not be higher in one country than in another. The higher price of home goods in the gold-receiving country, however, leads to shifts in consumption and in production which bring about a decline in the balance of trade surplus. The response in the gold-losing country is symmetrical, and the adjustment takes place as expected. The process is stable and adjustment is always complete, since gold continues to flow as long as any imbalance remains.

An important feature in this view is that the disturbance in itself does not engender any adjusting response. The specie movements and subsequent monetary changes which result from the imbalance lead to price changes which in turn bring the system to equilibrium.

II. Neo-Classical Here the classical interpretation is augmented by a) a modern banking system, not necessarily 'well-behaved' and, crucially, a central bank; and b) a rate of interest. These together modify the classical story and, importantly, induce international shifts in short-term financial capital positions. Commercial banks in the course of their own profit-seeking activity, and, at a later stage perhaps, the central bank, will engage in various forms of credit-tightening activity when specie or bullion (or, in the context of Bretton Woods, international reserves) flow out - but not before. In some versions this is associated with prescriptive statements to Central

Banks to behave in this fashion, that is, to obey the famous 'rules of the game'. The neo-classical view is associated most frequently with non-'academic' economists such as Bagehot, with Marshall (but in his testimony before the Gold and Silver commission, not in his academic writings), and, more debatably, with Hawtrey.

The banking system exerts pressure on the money supply and the rate of interest, in this view, and the result will be a) an outflow of short-term capital and/or b) a reduction in the level of expenditure at home. The outflow of short-term capital will finance the imbalance, buy time, and may even prevent final adjustment, since it stops or reverses the gold flow and prevents the 'classical' adjustment from getting under way. To the extent that the level of expenditure at home is reduced as a result of the credit-tightening, it will, in general, lead to price reductions (of non-traded goods) and, in some versions, directly to reduced expenditures on traded goods. Thus both directly and through substitution in consumption and production, it leads to improvement in the current account.

Like the pure classical version, the system is symmetrical, treating deficit and surplus countries the same. Within the time framework discussed by some of the writers, however, it is not a self-equilibrating mechanism; writers who stressed the impact of interest rate changes on short-term capital flows, rather than on domestic expenditure, often noted that the short-term capital flows constituted 'financing' but not adjustment. Whether or not this was a 'good thing' depended on the writer and the particular events under discussion; much of the literature on this subject is an early version of the internal-external balance models of the 1950's and later. Among the neo-classical writers there were those who argued that the monetary

authorities should interfere in order that the full effect of an international disturbance be prevented from working itself out, at least too quickly. Bagehot and some of Keynes' earlier writings, can be thus interpeted; Hawtrey, on the other hand, argued that anything borrowed thus today would have to be returned with interest tomorrow and was not worth the price.[5] In the 1950's, of course, we get solutions to the internal-external equilibrium problem which involve permanent disequilibrium since the authorities are advised to create a permanent current account imbalance, financed by capital inflows induced by interest rate differentials (See Mundell [1960], for example.)

III. Late Classical This body of doctrine has been given many different names. In fact, there is by no means general agreement that all the writers involved should be included in a homogeneous group or school. Some writers, (Iversen, Angell) call it a new theory and anti-classical. Others (Viner, Taussig, Ohlin) consider it to be simply the correct interpretation of the classical view. The major names encountered in the group are those of Taussig and some of his famous students, Viner, White, Williams (I call this group TWW; Ohlin referred to it as the Harvard School) and Angell. According to Viner and Iversen, Ricardo should be included in this list.[6] And Ohlin likewise can be classified at least partly as a member of this group - he himself thought of himself as belonging here. Apart from a few outliers, such as Ricardo, this group is chronologically clustered between the classical and neo-classical writers on the one hand and the keynesians on the other. Much later, we find echoes of many aspects of their analysis in the monetary approach to the balance of payments, though the differences are enormous.

The writers in this group share, with the classical writers and with one another, the concept of the adjustment mechanism as complete and self-equilibrating without the necessary intervention of the monetary authorities. They share also, with the classicists and one another, the view of price changes as an integral, important, indeed essential, part of the adjustment mechanism. The only exception here is Ohlin and it is for that reason that I do not include him wholly in the group. It is precisely on that issue that Ohlin can be said to fill the space between the classical and the keynesian views. (The important differences between him and the keynesians on this score is that in Ohlin's view, prices are free to change, but they don't always have to.) What is important to them is that an imbalance in the basic balance of payments, by creating an excess demand for foreign exchange, has immediate and direct effects, through the monetary system, on expenditures. An imbalance need not, and will not, persist until the specie shipping point has been reached and gold begins to move internationally. Specie movements are not necessary to the adjustment, and in fact they often occur after the adjustment has been made, if at all. (Taussig was less emphatic on this point than were his famous students, but I include him as a Late Classicist rather than a late Classicist because he was the founder of the Harvard School and because his own agonizing doubts about the correctness of the clasical view were presumably a major source of inspiration to his students in their explorations.

At the same time these writers are all classical in the sense that price changes (inter-sectoral price shifts, or changes in what is today often called the real exchange rate) play an important and, in most cases, essential role. The final adjustment comes about because of a change in inter-sectoral

relative prices. (Once again, Ohlin is the important exception here.) They are "neo-classical" only in the sense that the banking system (though not the central bank) plays an important role, and any disturbance to the balance of payments results directly in a change in the domestic money supply. Whether this now affects prices more than quantities, purchases of domestic more than of foreign, tradable more than non-tradable goods - these factors vary with the writer and the event he is analyzing. But, to repeat, it is emphasis on the direct impact of the foreign exchange market on monetary variables and other macro variables which characterizes this group.

III'. There is a group of writers whom I really find difficult to name, and even difficult to classify. They share with the Late Classicists the view that monetary changes are important, and that they lead to changes in expenditure. They differ among themselves in their view of how expenditure changes work their way through the domestic and foreign economies, and how their effects are divided between price and quantity changes. They share also the view that such changes are the counterparts of changes in the balance of payments, and that specie flows or reserve shifts are not important to the mechanism. They differ, however, in that they look in general outside the basic balance for the source of disturbance and are much concerned, specifically, about the destabilizing effects of short-term capital movements, or the destabilizing effects of domestic monetary shocks. And they worry, variously, about whether the authorities are performing the appropriate stabilizing role, or, in fact, destabilizing and exacerbating disequilibria (if not actually initiating them) themselves. In this group I include Hawtrey, Kindleberger, Bloomfield, Nurkse, and, at the fringe, Hayek.

IV. Keynesian. The pure keynesian view, as we know, emphasizes the inter-relationship between trade and the trade balance on the one hand, and the level of income and employment on the other. A disturbance in the trade account engenders responses which lead to changes in the balance of trade, generally in an equilibrating direction, but never (or hardly ever) sufficient to restore equilibrium. All the keynesian models are fixprice models. (I would argue that this is virtually a definition of 'keynesian' in this context, and it is for this reason that I use the lower case "k". The use of the term "Keynesian" to apply to all models with fixed prices is much debated and I wish to avoid that particular argument. Furthermore, except for a few hints in the "Notes on Mercantilism", [1936, chapter 23], Keynes himself nowhere, to my knowledge, spelled out what became known as the Keynesian model of the international mechanism. Machlup, Metzler, [1973, 10] and others were essentially responsible for that.) In the later keynesian literature there may be policy actions to initiate short-term capital movements to finance a deficit. Again, in the later literature, the quantity of money varies with the balance of payments and affects the level of total spending. In the pre-1950 literature there is little of that.[7] In general there is no serious discussion of specie flow or reserve level changes, and if such does occur, central banks are as likely as not to sterilize them. If monetary changes were uninhibited they would promote equilibrium only to the extent that they affected interest rates and thus investment - that is, they would not effect expenditure or price changes directly.

Since adjustment is necessarily incomplete, and since there are no inter-sectoral relative price changes, the only way of achieving full adjustment is to change the exchange rate. And this, to my mind, explains (as

much as the historical fact that there were devaluations) the association of the early keynesian writers with the literature on the effects of devaluation. The exchange rate is the only price left which is subject to change and which may have any impact on real variables.

Formally, if the law of one price holds and there is only one commodity, there is no room for any sort of "price" change under fixed exchange rates, and only income and expenditure changes can matter. But I would turn this statement around and argue that it was because they asumed a fixprice world that keynesian writers slipped into the assumption of a single good and ignored all inter-sectoral effects. Non-traded goods were rediscovered in the 1960's; they were crucial in all pre-keynesian theories, including, importantly, Ohlin's. How expenditure changes get allocated between home goods and foreign goods is important and interesting, but it is captured fully in the concept of the marginal propensity to import. Relative prices between "sectors" play no role here. Since income is generally regarded to be inside the production frontier, elasticities of substitution in production are very high in these models - in general, they are infinite, so output can be increased in any category of goods, without reducing it in any other.

Ohlin

I have classified Ohlin here as a Late Classicist (which is where he put himself, though he did not use the term); but with many qualifications, which is not accidental. He is indeed difficult to classify. In a sense he has gotten a bad press, being widely regarded simply as a keynesian manque, with a naive, pseudo-income approach to the balance of payments. I try to avoid psychological analyses here, but I suggest that this characterization of Ohlin stems primarily from a tendency to read his controversy with Keynes on the

German reparations, fit it into the matrix of pre-keynesian Stockholm economics, and let it go at that. The one-third of Interregional and International Trade (less in the later, revised edition) devoted to the monetary (rather than the real) theory of international trade seems to be widely neglected. It is on that which I base my comments below.

A word about dates, to put the work into its historical perspective. Interregional and International Trade bears a 1933 copyright, but the Preface is signed January 20, 1931. Ohlin's Doctoral Dissertation at Stockholm (entitled Handelns Teori) was presented and published in May 1924. The preface acknowledges the comments and interest of Taussig, Williams (Ohlin spent the year 1923 at Harvard) and Viner, and, judging from the table of contents, contains the basic ideas embodied in the later, English language, work.[8]

Classification is, as noted, difficult, because Ohlin's treatment, while not stated formally or mathematically, is the most complex general equilibrium analysis I have seen on the subject, certainly for the interwar period, with the possible exception of the ultra-formal treatments of Yntema, Mosak and Pollak. He discusses: various types of disturbance to equilibrium, some real and some monetary; various aspects of adjustment, some monetary and some real, mostly private sector but some relating to the behavior of the monetary authorities; expenditure changes, involving changes in total demand and in the balance of trade directly, at constant prices; changes in demand and supply involving shifts between sectors (traded and non-traded) at constant prices; and the effect on and of prices on (and of) demand and supply shifts between sectors. It is general, detailed, and makes constant empirical reference to historical and institutional "facts", both actual and stylized. A rich vein to be mined.

Most of the disturbances he discusses are real, the major exception being a brief discussion of "monetary variations" in which a credit expansion and price rise in one country is the proximate cause of imbalance. For the rest, he deals with the transfer problem (primarily long-term capital movements, in response to interest rate differentials between countries, but also unilateral transfers such as reparations); changes in world demand for a country's export good; changes in technology, including changes in transport costs. Each is discussed in great detail. It cannot easily be summarized, and there is nothing to be gained from presenting a detailed precis. I shall try to convey the main thread of the argument.

Ohlin presents first the analysis of interregional disturbances, specifically in the case of capital movements, and then proceeds to international disturbances. Since his major point is that they are very similar, in fact the same in all essentials, the discussion is repetitive. The former stresses direct income and expenditure changes and the latter gives relatively more attention to banking and monetary changes, but the mechanism is essentially the same in both cases.

Ohlin shares the view frequently attributed to Keynes that in general commodity trade adjusts to long-term capital movements, rather than the converse.[9] In a general equilibrium framework, everything adjusts to everything else and a statement that trade adjusts to capital movements, but not the reverse, is meaningless analytically. It is, however, a reasonable statement (right or wrong) about reality, specifically about the size of various parameters of the system. To cite Ohlin, long-term international capital movements

> ... are due to differences in long-term interest rates and other comparatively permanent circumstances, and these circumstances are not <u>often</u> much affected by changes in the volume of imports and exports of goods and services. (383-4. Italics added.)

Capital movements necessarily involve changes in the trade balance if capital is in fact to move. Changes in underlying conditions may lead to changes in both commodity movements and capital movements. However:

> The point is that basic changes which primarily affect imports and exports seldom call forth <u>secondary</u> readjustments with regard to long-term lending, while the reverse <u>always</u> happens. (384. Italics added.)

Changes in trade or in long-term capital movements lead to changes in expenditures (and commodity trade) directly (on which more below) and also, indirectly through short-term capital movements and monetary influences. The latter are discussed in a manner which is generally described in the literature as "neo-classical". It has indeed much in common with many of the neo-classical theories. What is important to Ohlin (and others) is that gold movements play only an occasional, minor role in this process.

A detailed discussion describes the foreign exchange market and the technical aspects of short-term capital movements, involving the relationship between interest rate changes, changes in short-term financial indebtedness, and exchange rates. Short-term capital movements, in the first instance, smooth out seasonal variations in payments and prevent changes in exchange rates.

For other (non-seasonal, or "less regular") changes there is likely to be a change in interest rates and money market tightness. Often, this is integral to the cause of the disturbance itself: a crop failure, for example, leads to an increase in the trade deficit. But it also leads to a credit tightness since "... farmers are unable to save as usual and instead have to ask for temporary loans to cover their expenses." (388) The resulting rise in interest rates encourages short-term capital inflow and prevents exchange rate changes. Merchants, traders, exporters, respond to higher interest rates by seeking credit abroad, or discounting their bills in the destination country. Higher interest rates lower the yield on securities and raise the cost of holding them, inducing international portfolio shifts.

If these market forces are insufficient, the authorities will raise the discount rate and/or sell securities in the open market. Foreign exchange variations <u>within</u> the gold points call forth movements of short-term capital but no gold movements.

The credit tightness which results from the international short-term capital flows (and possible gold flows) "reduce the volume of credit and buying power." (392) Imports fall, because traders buy less when credit is tight, and perhaps consumers buy less because their income is reduced. "Consumers use their income, while traders use their capital or credit." (392) Exports may rise as domestic spending on exportables decreases.

Ohlin criticizes the "classical view of gold movements", aligning himself with "Angell, Feis, Graham, Hawtrey, Keynes, Viner and others." (396n) Gold movements are not essential, if they occur they may be sterilized (citing Federal Reserve policy), and finally when they do occur it is not as a <u>cause</u> of central bank action but to restore the reserve position of the central banks which has been affected by the adjustment.

The main difference between international and interregional transfers is that the latter lack the complexity brought about by having different banking systems. "Purchasing power and credit cannot be transferred without being, so to speak, transformed from one monetary system to another; this gives rise to certain complications." (406)

Transport costs (including tariffs and other impediments to trade) tend to make the distinction between traded and non-traded goods somewhat different in fact in interregional than in international trade, but there is no analytical distinction.

A word about transport costs. Ohlin argues that if there were perfect commodity arbitrage in all goods, there would be no transfer problem. A transfer of purchasing power would shift the distribution of spending on the world's goods from the payer to the receiver. There might or might not be a change in the relative prices of the two countries' goods, depending on the taste pattern of the receivers as compared with that of the payers (cf. the Jones-Samuelson debate), but there is no a priori presumption in either direction. To the contemporary reader it seems strange to think of a theory being based on the existence of impediments to trade, but the point is that it is these which create the distinction between traded and non-traded goods, and it is the intersectoral shifts in demand and supply which are crucially important in his view of the adjustment mechanism. He classified goods as follows:

> ... international goods, subject to international trade, competing home market goods, in more or less close competition with international goods, and non-competing home market goods, a large group with a less direct connection with other goods.

> International goods may be either import or export goods, consequently competing home market goods may compete with either the former or the latter. (247)

The prime mover in the adjustment process, is a change in "purchasing power" or "buying power". It is here that Ohlin can be classified, as he classifies himself, with some of the Late Classicists, the Harvard School, as he calls them, particularly Taussig, Viner and Angell. However, he goes farther than these people, in that changes in purchasing power need not lead to changes in prices, though they may do so. Changes in aggregate demand for various classes of goods may suffice to effect an adjustment. As an example of this distinction, read in its entirety Ohlin's citation of Angell, and his own comment. He quotes Angell as saying that the

> ... 'key to the problem of international equilibrium ... lies in the effect upon the volume of purchasing power in circulation, and <u>through it upon the general level of prices.</u>' I should like only to add: 'and upon imports and exports.' (p. 544n. Italics added.)

I know of no other writer who has used this concept. Ohlin refers back to Bastable (1889) and claims him as the originator of the notion. But, he adds,

> the concept 'aggregate of money incomes' is more useful than those <u>used in its place</u>: 'The height of money wages' (Taussig), 'The rate of efficiency earnings' (Keynes). (378n. Italics added.)

It is somewhat puzzling to find Ohlin's "buying power" suggested as an alternative to "efficiency earnings" or "money wages", which to us today would appear to be measures of costs as well as of incomes. In full employment equilibrium, of course, the difference between cost and income vanishes. The

fact that Ohlin does not always assume full employment may be the source of his desire to distinguish between his term and those of Taussig and Keynes.

This interpretation is supported by the following addendum, which appears in the Revised Edition (1968): "The basic concepts and approach used here are well suited for a study of the influence of employment variations." (235)

Ohlin's definition of "buying power" follows:

> ... the aggregate of money incomes and the flow of liquid capital during a certain period of time, increased by (1) the income drawn from the ownership in productive factors abroad, (2) new borrowings abroad, and (3) credit inflation; and reduced by (1) the incomes which people living abroad draw from productive factors in this country, (2) new lendings to other countries, and (3) credit deflation. (378) A footnote warns: "The part of the flow of income which is saved and thus becomes liquid capital must not, of course, be counted twice.

The "flow of liquid capital" has been earlier defined as follows:

> Individuals may acquire buying power in terms of money in two other ways than by earning or borrowing it. In the course of the process of production a part of the capital, which has been invested, is made 'free', i.e. liquid. This is a normal and important source of buying power. [The term 'invested' is here used in a wide sense. Every sale of a commodity means that the monetary capital, invested in that commodity, is made liquid.] (376. Brackets his.)

My interpretation of the definition of "buying power" is that he is referring to the flow of potential expenditure. The income he has defined, plus ownership of factors abroad, minus foreign ownership of factors at home, is net domestic product. The "flow of liquid capital" would seem to be depreciation allowances (since new savings must not be included here, as he says, to avoid double counting). To the total, gross domestic product, he adds new foreign borrowing (net) and the increase in the money supply.

In the Revised Edition, he supports this interpretation:

> By 'buying power' I have meant not only variations in the national income of the different countries but also variations in the ability to make purchases that are directly associated with international capital transfers and with an inflationary or deflationary credit policy. [1967, 317]

I used the term "potential expenditure" to define buying power above. It is not entirely clear to me whether Ohlin views expenditure as equal to buying power (which is most probable) or a function of it, with a coefficient less than or equal to one. What is clear, however, is that total expenditure is not, in general, equal to total "demand for goods and services, produced in this country". An increase in buying power may be spent on foreign goods or home produced exportables and affect, not the level of money income at home, but the balance of trade. At the same time, Ohlin takes pains to note (citing the debate with Keynes) that an increase in purchases (because of increased buying power) may <u>cause</u> an increase in money income, in which case it would be misleading to attribute the increase in demand to the increase in income - the reverse, rather, is true. (407n)

Like Viner [1926] in his Canada study, Ohlin speaks of a "primary" and a "secondary" credit expansion pursuant to a transfer. When borrowers convert their foreign currency into domestic money and spend it, we have a primary expansion. The extension of bank credit based on the excess reserves thus created, and elicited by the demand for increased credit as home spending rises, constitutes the "secondary" expansion. Since the central bank acquires foreign exchange reserves in this process it is likely to ease its credit policy, thus engendering a "tertiary" expansion. As a result of these

increases in "buying power", there will be a rise in money incomes, the extent of which is unknown; there will necessarily be leakages into imports, but it is impossible to say in general by how much. (Here is where the later, keynesian, contributions of Metzler and others become relevant.) Ohlin saw the problem of the relationship between expenditure and income: it is possible, he says, that most of the new spending takes place in securities and real estate markets (and he cites the U.S. in 1928 and 1929 as exemplifying this). The "stage in the business cycle'" determines both the direction and responsiveness of demand shifts and the mobility of factors of production between sectors (407), since resource shifts are easier during an expansion than a contraction. Furthermore, it makes a difference not only how much unemployment there is, but whether the unemployed resources are in the traded or non-traded goods sector. (424n)

As to the commodity markets, the analysis follows closely the line drawn in the discussion of interregional transfers. Ohlin begins with the simplifying assumption that, following a transfer from B to A, world demand for each country's international goods is unchanged. The only change is that the demand for non-traded goods rises in A and falls in B. This in turn influences the supply of exportables in each country and therefore their price, to an extent which depends on the demand elasticity in each country (since it is that which determines the rise in price of the non-traded goods). Demand elasticity depends on the "elasticity of wants" (which I take to be the partial equilibrium price elasticity of demand), the elasticity of supply from other sources (from other countries, apparently), the "reaction of buying power" - the income effect of the changed factor prices resulting from the change in demand for non-traded goods.

Assuming, for the nonce, that all goods are produced with identical bundles of factors (in fixed proportions), the rise in demand for (and price) of non-traded goods, demand for traded goods remaining fixed, will raise factor prices, hence costs of production of traded goods. This will shift some goods out of the exportable category (the reverse, of course, is going on in the paying country), and will further limit the required movement in the relative prices of traded goods, that is, in the terms of trade. (419)

Dropping the assumption of fixed bundles of factors, Ohlin undertakes detailed, general equilibrium analysis of relative factor prices, involving such elements as heterogeneity of factors (assumed to be non-existent in the conventional, real, Heckscher-Ohlin trade model, by the way), alternative uses of factors, long- versus short-run elasticities of substitution, increasing returns, institutional frictions. It is all there, and again, not surprisingly, qualitative results are not derived.

In discussing the possible course of relative, inter-sectoral, prices, Ohlin is similarly general-equilibrium, detailed, and "empirical". Adjustments vary with the extent of excess capacity in the several industries and the level of unemployed resources; frictions in the form of labor union demands make their impact felt; the ratio of profits to factor costs varies betwen sectors; different stages in the adjustment process look different. (424-30)

We note recurrent emphasis on the difference between short- and long-run effects, on the time needed for various adjustments to work themselves out, on the different kinds of effects at different stages of the borrowing process. "A complete analysis of the effect of international capital movements upon the price system must be an account of a time-using process." (426)

Both in my summary, and in Ohlin's original, there is more emphasis placed on the adjustment in the receiving than in the paying country. He asserts that the effects are analytically symmetrical, but he argues that in fact the lending country will have a harder time of it, because contraction is always more painful than expansion. Continuing crisis in the paying country may, in fact, eventually force the country off the gold standard, or, perhaps alternatively, cause a breakdown in union resistance to wage cuts. However it is done, "... B may well lose much more from unemployment and other disturbances than from less favorable terms of exchange in international trade." (428)

Finally,

> ... the size of the capital movements in comparison with other aspects of economic life in the countries concerned has an important bearing on the dimensions of the changes in the price system. ... It is much easier to bring about a relative increase of imports and reduction of exports by 5 percent than by 50 percent. (426-7)

Having listed all the possible results following a transfer, on the assumption that all the change in effective demand is concentrated on non-traded goods, Ohlin drops that admittedly "unrealistic" assumption and permits variations in the demand for each country's traded goods. He devotes little space to this case, however, since it is even more difficult than previously to get precise qualitative results.

Further "complications" which Ohlin examines in some detail include the existence of third countries and the dependence of the precise nature of the transfer process on the trade and payments relations of the paying and receiving countries with the "third countries"; for example, when French and German capital exports to third countries slowed down, or stopped, after World War I, Britain's capital <u>goods</u> exports were adversely affected, hence her

income and her own capital exports declined. (456) Long-run growth is also dealt with, with feedback effects from trade to terms of trade to income to savings to capital transfers, and back to trade again.

Summarizing, Ohlin enumerates three mechanisms of adjustment, though we would be inclined to classify them slightly differently today. The first is changes in buying power, which shift the demand for traded goods. This is a combination of keynesian income effects and a version of the monetary approach to the balance of payments. His second and third are substitution effects between traded and non-traded goods in demand and in production. Additional help is to be expected from short-term capital movements, and from the fact that often capital movements are correlated directly with commodity movements, as when loans are extended to finance exports. (On this latter point, he comes very close to having a view of endogenous capital movements, at least for short-term capital.) Adjustment seems to work, and rather well - he cites Taussig and Viner and their empirical studies as support. Usually, he notes, (a point he emphasized heavily in his Economic Journal debate with Keynes) transfers are effected with no discussion or comments; the transfer "problem", it is suggested, is well-nigh unique to the German Reparations controversy.

> Many writers express the opinion that the readjustment has come about surprisingly quickly in some well-known cases of international capital movements. Such surprise is justified in the light of the classical description of the mechanism, where everything centres around the assertion that the lending country must offer its goods on cheaper terms of exchange in order to induce the borrowing country to buy a greater quantity of them and thus create an export surplus corresponding to the capital exports. The mechanism outlined above makes it much more understandable how the adjustment is brought about so smoothly. (432)

The important thing to Ohlin (again, citing Taussig for support and Keynes as the butt of his argument) is that

> ...in most cases the monetary transfer precedes both the real transfer and the price changes. ... changes in buying power are the ever-present causa efficiens, while the character of the price variations varies from case to case. Changes in buying upower affect the balance of payments directly in several ways, even in the quite conceivable case where owing to great mobility and fluidity there are no relative price changes at all. It is true that in most cases price changes occur ... but they hold a secondary position relative to the primary changes in buying power. (432-3)

Which is indeed very like the monetary approach to the balance of payments.

The discussion of capital transfers is followed by less complete, but equally general-equilibrium, analyses of the effects of other disturbances to international trade and payments: import duties (distinguishing between those levied primarily for revenue and those intended to be protective; there is also a second-best defense of their use to facilitate a transfer (487)), exogenous shifts in demand, changes in technology, and, finally, monetary shocks. The story he tells is not, of course, the same in each case, but the analytical approach is. Thus, for example, credit expansion in one country will bring about price changes in the rest of the world, even without the "classical" influence of gold flows which affect the quantity of money abroad. Here the classical explanation

> ...is to a certain extent correct, for if nothing else happened before all these reactions they would come into play. As a matter of fact, however, there are other reactions which in most cases bring about the price adjustment in a quicker and smoother way. (541)

Finally, Ohlin ends with a discussion of flexible exchange rates and a critique of Cassel.

> Changes in monetary policy, like the other variations, alter the supply and demand schedules in the foreign exchange market, and thereby, and only thereby, the exchange rates. Commodity prices are of course altered also; but it is uncertain whether the trade balance, the international movement of capital, or the price level is affected first. Changes in the volume of credit often affect the volume of imports or the size of capital transfers much more quickly than the height of home market prices. Experience does not justify making changes in the price level the first step, and changes in the balance of payments the consequences of price variations (550)

To conclude, a few words on the earlier classifications of Ohlin. Names are not important, in themselves, but how we classify something says much about what we think its significance is.

Ohlin's own characterization of himself as being in the Late Classical (Harvard) tradition is consistent with what I have noted earlier, and consistent with Metzler's view in which he traces a line from Ricardo through Wheatley, Longfield, Bastable and to Ohlin, a line characterized by the notion that shifts in "purchasing power" and the direction of spending can effect a transfer and restore balance without any prior movements of gold. But, says Metzler, these writers all

> ... lacked a theory of employment or income, and were therefore unable to explain just how far the adjusting process could go. Some of the earlier explanations were vague and ambiguous as to the extent of income movements, while the later ones were frequently erroneous. There was a strong tendency ... to cling to the assumption that full employment prevails at all times, ... [1973, 10, p. 10] (Italics added.)

Metzler is quite correct in his comment, and none of the writers referred to, including Ohlin, spell out the situations in which prices will change rather than employment, or present an analysis of how expenditure change is allocated between changing output and changing prices.

At the same time, precisely what separates Ohlin from the classicists is that he did not assume full employment. In this, and in his emphasis on the determinants of total spending, Ohlin was "keynesian". He was "classical" in his emphasis on the monetary mechanism in international adjustment, and on the importance of inter-sectoral adjustments. In his awareness of the complexity of the full general-equilibrium system he was dealing with, however, he was unique.

NOTES

1 I use the term 'basic balance' as it used to be used by the U.S. and by the IMF: the current account, unilateral transfers, and long-term capital movements. This implies a view of the world in which short-term capital movements are taken to be accommodating, or financing.

2 The classical economists in fact did not frame their examples in this type of disturbance; the text-book writers, on the other hand, did not choose these examples randomly, but were influenced by the writings of another group.

3 Viner [1937] argues that the classicists, including Hume, were less naive on this subject than latter-day critics imagine.

> "The classical school ... all held the same views on this point: after allowance for transportation costs, the market prices of identical transportable commodities must everywhere be equal or tend to be equal when expressed in or converted to a common currency. When, therefore, critics of the classical theory have taken it to task on the ground that it explained the adjustment of international balances by the influence on the course of trade of divergent market prices in different markets of identical transportable commodities, or when followers of the classical theory have attempted to defend it although themselves giving it such an interpretation, they have misinterpreted the classical doctrine." (316-317. See also 313-315).

4 Oppenheimer is mistaken in attributing the discovery of the notion of non-traded goods to Ohlin. It is a commonplace feature of the classical literature.

5 Hawtrey [1932, 183-5] noted that short-term capital movements would get reversed as basic adjustment took place, so the relief would be only temporary. The harm done in the interim by the tight money policy which induced the capital inflow was, on the other hand, more serious.

> Credit restriction was constantly advocated for the purpose of attracting foreign money for short-term investment. ... It is hardly necessary to repeat that the support gained for the foreign exchange position by attracting foreign money is utterly precarious and delusive. And when credit is restricted for that purpose, the deadly effects of deflation are not the less operative because they are not designed. (219)

Keynes, as always the pragmatist, argued in Indian Currency and Finance that short-term capital movements were an efficient way to regulate gold flows, but primarily for a country like Britain, a net creditor; the same policy was wrongly applied by debtor countries. [1913, 18]. In the Tract he contrasts the use of bank rate and short-term capital flows before the war (under fixed exchange rates) with the post-war, flexible rate case in which, he says, it is much less effective. But even before the war, capital flows were desirable only under certain circumstances:

> Where the disequilibrium was purely seasonal ... it was much better that foreign funds should ebb and flow between the slack and the busy seasons than that prices should go up and down. But where it was due to more permanent causes ... the stimulus to foreign loans, whilst restoring the balance for the time being, might obscure the real seriousness of the situation, and enable a country to live beyond its resources for a considerable time at the risk of ultimate default. [1923, 160]

6 An excellent discussion of the debate between Ricardo and his contemporaries on the issue of whether gold movements are an essential part of the adjustment process is to be found in Iversen [1935, 199 ff., especially 212-217]. Briefer mention of the argument is in Metzler [1973, 10]. Viner [1937] intertwines this issue with consideration of a slightly different point: whether price changes were a necessary part of the adjustment process. Viner argues that some of the classicists, especially Ricardo, anticipated an 'income approach' to the adjustment mechanism. His evidence, in my view, points more to an anticipation of Ohlin than of the keynesian type of income approach (see 293-304). A quotation from Ricardo (295-6) shows a clear statement of rational expectations: Ricardo argued that a crop shortage would not lead to gold exports because, seeing it as a temporary disturbance the market would anticipate the reversal of any gold flow and thus prevent it.

> Is it conceivable that money should be sent abroad for the purpose merely of rendering it dear in this country and cheap in another, and by such means to insure its return to us? (Ricardo, High Price of Bullion, appendix, Works, 292. Cited by Viner [1937] 296.)

7 See Harrod for a prescient exception.

8 Dr. Harry Flam has been kind enough to provide me with a detailed summary of Chapters IX through XIII of Handelns Teori. As far as I can tell, it is essentially an outline of the treatment in Interregional and International Trade. The detailed general-equilibrium analysis of the

changes in commodity prices and factor prices, the effects of internal factor mobility and factor substitution - these are not, apparently, spelled out. But the later work is more an elaboration and extension of the earlier than an alteration.

9 There is a brief treatment of capital movements as endogenous, particularly when he is discussing very long-run trends. One example among many, which demonstrates the extent of what one may call Ohlin's general-equilibriumness, is the statement (511) that an increase in the world demand for a country's exports may raise income and hence saving and, if labor from abroad is not available, a fall in the rate of interest and a capital outflow. He suggests that this is the post World War I story of Sweden, facing an increased world demand for its exports of both pulp and machinery.

Keynes, in the Treatise on Money, does seem to have been concerned with the possible difficulties and strains involved in adjustment to an (exogenous) shift in foreigh borrowing. This is the subject of section (iv) of chapter 21 of the Treatise on Money, for example, titled "The Awkwardness of Changes due to International factors". [1930 Volume I, 346-50]

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