Comment on Nancy Peregrim Marion's "Two-Tier Exchange Rates and Monetary Autonomy in a Portfolio-Balance Model"

By Pascal Salin*

My comments do not aim at denying the value of *Nancy Marion*'s paper and the novelty of her arguments. I certainly praise her text as a very stimulating one. However it suggested me the following remarks:

1. A dual system (defined as in Model I where interest payments are repatriated on the commercial market) is equivalent to a system where returns on bonds are subsidized or taxed so that the interest rates can differ at home and abroad ($r \neq r'$) even if there is perfect substitutability between assets.

However, it seems that this conclusion is based on the fact that there is no capital accumulation in the model, and the real rate of return on capital is not considered. In the long run, however, the real rates of return on capital and assets must be equalized in a country. Two cases may be considered in this respect:

— If the production functions are the same at home and abroad, equalization of factor prices is brought about by commodity trade. Therefore, the rate of return on capital must be the same all over the world; as the real rate of return on assets cannot be different, in the long run, from the rate of return on real capital, the equalization of all these rates of return implies that the financial exchange rate, e, must change until it is equal to the fixed commercial rate, $\bar{e}$. At that point $r = r'$.

— If production functions are different and the rates of return on capital are different at home and abroad, there is an adjustment process under an unitary exchange rate system via the process of capital accumulation: the trade deficit of the country with the higher rate of return on capital (which is a trade surplus for the other country) makes a transfer of saving possible until real rates of return are equalized. In a dual exchange rate system there is no communication between the foreign sector of the commodity market and the bond market: a country cannot export (import) real capital via a trade surplus (deficit) and a corresponding deficit (surplus) in the financial and monetary sectors.

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In fact, the Central Bank can maintain the fixity of the commercial exchange rate in the long run only if there is no continuing trade surplus or deficit. Therefore, a dual exchange rate system prevents long-run transfers of real capital. Since people cannot accumulate foreign bonds (at least if the national currency is not tradable) there cannot be an optimal allocation of capital in the world.

In other words, the equilibrium exchange rate must be defined as the one which corresponds to the purchasing-power parity, and an equilibrium exchange rate can exist without a zero trade balance when there is a long-run transfer of capital: the desired trade surplus (deficit) finances (is financed by) a capital deficit (surplus). A dual system is based on the assumption that the equilibrium exchange rate is defined as the one which secures a trade balance equal to the interest income repatriated via the commercial market.[1] Thus, there is no possibility of transfering capital.

Assume for instance that, starting from an initial international equilibrium, there is some sort of technical progress in the rest of the world such that the real rate of return on capital becomes higher in the rest of the world than in the country concerned. Under a fixed rate system (the same result would hold under a flexible rate system) people would buy foreign assets and sell commodities, which would not affect the central bank reserves. The process would continue until the real rates of return were equalized all over the world.

What would happen with a dual system? Let us take the case where the interest is repatriated on the commercial market.[2] Nationals will buy foreign bonds until the differential between the financial rate and the commercial rate makes the real rate of return equal for national and foreign bonds. To buy these foreign bonds they will try to sell more commodities; however, the proceeds in foreign exchange got from these exports cannot be used directly to buy foreign bonds: the central bank gives national money against foreign currency. Having too much money, the nationals want to sell it against foreign bonds. As the national currency is not internationality traded in *Nancy Marion*'s model, only nationals can exchange national currency for foreign bonds. The market for foreign bonds in the country is a closed market between nationals. Contrary to the case of an unitary system, there has not been an exchange of commodities against foreign bonds. The additional exports of commodities do not stop only when the real rates of return on capital are equalized in the country and abroad — as would happen under an unitary exchange system — but as soon as the gap between the financial

[1] Or a zero trade balance (when repatriation of interest income is made via the financial market).

[2] The result would be the same with Model II.

and the commercial exchange rates are such that the real rates of return on bonds (and not on capital) are equalized.

However it must be clear that the real rate of return on foreign bonds to a national does not correspond to its world real rate of return and does not correspond to an international optimal allocation of capital, exactly in the same way as a tariff introduces distorsions between national and foreign prices.

Moreover, the additional exports of commodities initiate a new creation of national currency, although it is not desired since we assumed an initial international equilibrium and the mere technical progress is in no way a possible cause of world price increase. Therefore, the country is henceforth in a disequilibrium position. To summarize, the conclusions arise from the fact that a dual system cannot make the distinction possible between a (desired) trade balance due to long-run real transfers and a (disequilibrium) trade balance due to incompatible monetary policies of various countries.

2. As we just saw there is a fixed supply of foreign bonds in the short-run[3] since foreigners cannot sell or buy anything against bonds. The bond market is a market for nationals only. The quantity of bonds on this market depends solely on the initial quantity of bonds held by nationals when the dual system depends on the probability that the system will disappear ...

In the case where financial returns on assets are repatriated via the financial market, which means that they cannot be traded against commodities, any financial exchange rate can be an equilibrium exchange rate. In fact, it does not matter if you multiply the exchange rate by 10, 100 or one billion since both the nominal value of the bond and the nominal value of returns are multiplied by the same number. In a system where the returns are repatriated on the commercial market, the level of the financial exchange rate makes a difference, since the nominal value of the returns determine their purchasing-power.

At this point the irrationality of a dual system with repatriation on the financial market must be stressed. Any asset just represents a future

[3] Thus, *Nancy Marion's* assertion according to which the supply of foreign bonds is perfectly elastic is wrong. Equation (7) ought to be written as $e\bar{F} - eF^h = 0$ instead of $eF - eF^h = 0$ ($\bar{F}$ being the fixed supply of foreign bonds). This formulation explains why e changes if the excess demand for F changes. This is true in the short-run. In the longer-run, $\bar{F}$ would increase since the holders of foreign bonds cannot use the interest received to buy commodities and they can only accumulate foreign bonds. The rate of growth of their stock of foreign bonds is thus exogenously given, since they have no other way of accumulating them (by selling commodities, or by selling domestic bonds or domestic currency since both are assumed to be internationally immobile).

purchasing-power in the form of interests or reimbursement of the principal. If you cannot trade the returns nor the principal into commodities (directly or indirectly via a certain currency), there is no justification for holding assets, which become pure abstract goods without any utility so that no price can be determined for them.

When *Nancy Marion* writes that the rate of return on bonds in Model II is $u = \frac{er'}{e} = r'$, she can write it only in a very formal sense, since this "real" rate of return has no purchasing power or, at least, a very improbable one. One could rewrite the equation for u as follows:

$$u = \frac{e^e r'}{e}$$

where e^e means "expected financial exchange rate". As any financial exchange rate can be an "equilibrium" exchange rate, national speculators may expect any e^e, so that there is no reason for deciding that $u = r'$.[4]

If all speculators are certain that the dual market will last for ever the utility of foreign assets is zero for them (except in the case where they expect to emigrate). No one will demand foreign assets and e^e will become equal to zero (actual e will also tend towards zero). The expected rate of return on foreign bonds will not be zero if it is expected that the country will go back to an unitary exchange rate system (fixed or flexible) or if there is any opportunity for smuggling, the latter being probably a function of the gap between the financial and the commercial rates.

Thus, the demand for foreign bonds and, therefore, the equilibrium financial rate depend on the probability that the system will be abandoned in the future and on the possibility of smuggling, which means that a dual system with repatriation on the financial market is a rather odd system.

It also follows that the assumption of perfect substitutability is not correct for Model II since people cannot be indifferent to the choice between foreign and domestic bonds, and the equality between r and r' can exist only in the very formal sense stressed above.

For the same reasons, in Model II, W^h ought to be defined as $L^h + B^h$ and not as $L^h + B^h + F^h$ since F^h only gives a potential source of wealth (in the case where the system would be suppressed).[5] Alternatively, one could write $W^h = L^h + B^h + F^{he}$, where F^{he} would represent the ex-

[4] In fact, *Nancy Marion* does write (footnote 26) that "it is assumed that the expected depreciation of the financial rate is the same for all wealth holders and has a probability distribution around mean zero".

pected value of foreign bonds and would be a function of the probability of a suppression of the dual system and of the cost and risk of smuggling.

4. The important conclusion of *Nancy Marion* is that, in Model I, monetary authorities can retain some interest rate autonomy. We saw that this conclusion was debatable in the long-run (§ 1). However, even in the short-run there might be more constraint on the autonomy of monetary authorities than it appears in *Nancy Marion's* paper. She defines monetary autonomy as meaning that "the authorities can regulate net capital flows independently of the relative rates of return at home and abroad and thus have some control over the domestic interest rate". The links between capital movements and the national economy are not only those which are channelled via the monetary base in a system of pegged exchange rates, but, moreover, those which are implied by asset changes in individuals' portfolios.

However, her definition of monetary autonomy may be too narrow: monetary policy is autonomous when a country can afford a long-run rate of inflation totally different from that of other countries. The pegging of exchange rates for commercial transactions obviously does not allow such a result since national prices cannot differ widely from world prices. Therefore, monetary autonomy, in such a system, can be given only one meaning: to say that a dual system can isolate a country better than a fixed rate system could come down to saying that capital movements, and not the trade balance, are responsible for short-run imported instability in a system of fixed rates. Thus, the long-run rate of inflation being given by the world rate of inflation, the dual system would permit a more stabilizing short-term policy (as we saw previously, in the long-run the real rate of interest is the same at home and in the rest of the world, so that nominal interest rates cannot be different in the long-run, since the rates of inflation are the same; therefore, monetary autonomy in managing the interest rate can only be concerned with short-term fluctuations in the nominal interest rate).

Therefore, the plea in favor of dual exchange system rests on the assumption that capital movements are destabilizing, contrary to the long-lasting academic tradition, but in conformity with the official point of view.

To illustrate the opinion according to which the "neutralizing" role of the dual market is debatable, just assume that the rate of money creation in the country is too low given the "world rate of inflation".

[5] In a private correspondence *Nancy Marion* suggested that "perhaps in a less simplistic model — for example, a model where foreigners held some of the domestic bonds — it would be quite appropriate to include F^h as part of domestic wealth. In such a specification, portfolio *switches* could occur between domestic and foreign bonds in a two-tier system".

In a fixed rate system, the nationals would get money by selling commodities and bonds to the foreign sector, the central bank buying the proceeds in foreign money of these sales and selling national money. Thus, there would be a temporary surplus in both the trade balance and the capital balance, as long as the rate of national money creation does not keep up with the world rate of inflation. In between, there might be a (costly) distorsion between the prices of tradables and the prices of non-tradables, the former rising more rapidly than the latter.

What would happen in a dual system? The nationals cannot get more money by selling more assets to the foreign sector since the central bank does not intervene on the financial market. Therefore, the whole burden of adjustment falls on the commodity market and the trade balance. The adjustment process is thus slower than in a fixed rate system or, at least, not optimal since people are obliged to get the desired additional quantity of money only by selling commodities although they might prefer to sell both commodities and bonds (i. e. to distribute differently over time the real transfer implied by the purchase of money). These results hold whether the interest incomes are repatriated through the commercial or the financial market.

Another example of the "destabilizing" role of the dual market would be given by the case mentioned above, where the real international equilibrium implies a transfer of capital, hence a non-zero trade balance, so that a "disequilibrium" in the trade balance[6] could not be financed by (or could not finance) the capital account, which would result in an undesirable and disequilibrating destruction (creation) of domestic base money.

5. Finally, *Nancy Marion* writes that "one argue that neglecting the goods market in this exercise is not a serious omission since the model is constructed so that the financial markets are unaffected on impact by disturbances in the goods market" (footnote 1). The neglect of the commodity market corresponds to the fact that income is not an argument in the various demand functions for assets, since these functions (for bonds, money and foreign bonds) depend only on the foreign and national rates of interest, the exchange rates and the total wealth. The model is a purely financial model and the asset markets are completely separated from the commodity market. In fact, changes in r or the exchange rates may affect absorption, thus the trade balance, since the real value of wealth is affected and people may wish to change their rate of saving.

[6] A "disequilibrium" trade balance here means a non-zero trade balance in Model II (where interest income is repatriated on the financial market) or a situation where the trade balance is not equal to the amount of interest income repatriated in Model I.