Financial Flows and Open Economy Macroeconomics

Prabhat Patnaik

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FINANCIAL FLOWS AND OPEN ECONOMY MACROECONOMICS

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The fact that openness to free financial flows exposes an economy to extreme volatility is generally recognized. The fact that such exposure to volatility, quite apart from being deleterious *per* se, has a contractionary effect on the level of activity, *both when there are substantial financial inflows and also when there are substantial outflows,* is less widely acknowledged, but is nonetheless clearly demonstrable[1]. There is however an additional impact of exposure to free financial flows which has not been adequately recognized, namely that *even in the absence of any inflows or outflows,* such exposure nonetheless has a contractionary effect on the economy by imposing on it an expenditure deflation, especially a deflation of government expenditure. This is *additional* to the contractionary effect of volatility as such. The purpose of the present paper is to explicate how this deflationary effect operates, and how the two different types of contractionary effect complement one another.

I

In any economy, the value of gross output in any period, in excess of the value of domestically produced circulating capital used up in its production, goes partly as wage-bill, partly as profits (and other "surplus" incomes) and partly as payment in lieu of imported current inputs. Given the requirements of these latter inputs (which depend on the conditions of production), and their world prices which are outside the country's control, the share of output value going as payment for imported inputs depends exclusively on the real exchange rate of the country's currency. If there exists a minimum level of the profit-margin, determined by mark-up pricing, and a minimum level of real wage rate for given labour productivity (going below which brings forth workers' resistance resulting in a money wage-price spiral, or, even in the absence of such a spiral, an "unacceptable" level of political hostility), then there is *ipso facto* a minimum level of the real exchange rate. In an open economy *not characterized by free financial flows*, the government would so adjust its expenditure as to achieve the maximum level of activity in the economy that is compatible with balance of payments equilibrium. Hence the level of government expenditure will be such that at this minimum real exchange rate the output is the largest that is compatible with balance of payments equilibrium.

The matter can be expressed as follows. Assuming for simplicity a single produced good in the economy, whose unit production requires m units of an imported input and a units of itself as circulating capital, the price of the good will be

$$p(t) = \max \{ p(t-1); [a.p(t) + m.p'(t)/e(t) + w'.l.p(t)] (1+\partial)\} \quad .....(1)$$

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[1] For a demonstration see Prabhat Patnaik and Vikas rawal, "The Level of Activity in an Economy with Free Capital Flows", *Economic and Political Weekly*, April 2, 2005.

where p' refers to the world (dollar) price of the imported input, e to the exchange rate, w' to the minimum acceptable real wage rate for given labour productivity (reciprocal of l), and ∂ to the mark-up factor. What equation (1) states is that ∂ yields the capitalists a minimum profit-margin which they try to better if they can. Let us in addition postulate the following:

$$Y(t) = C(t) + I(t) + G(t) + NX(t)\ldots\ldots \qquad (2)$$

where $C(t) = C(Y(t))$; $I(t) = I(r(t)$; $r(t) = r'$ (given), and

$$NX(t) = F(e(t)/p(t), Y(t))\ldots \quad F'(e/p)<0 \text{ and } F'(Y)<0, \text{ so that}$$

$$Y(t) = C(Y(t)) + I(r') + G(t) + F(e(t)/p(t), Y(t)) \ldots \qquad (2')$$

The symbols have obvious meanings. Equations (2) and (2') refer to real (constant price) magnitudes. In addition we assume, not unreasonably, that an increase in the volume of net exports is associated with an increase in the dollar value of net exports. That is, if p'' denotes the weighted average dollar price of net exports, then:

$$p''(t). NX(t) = f(NX(t)) \ldots \quad f'>0, \text{ and } f(0) = 0\ldots \qquad (3).$$

In an economy not exposed to (short-term) financial flows, if we assume, for simplicity, that long term capital inflows in the form of net aid and net direct foreign investment are nil, then the condition for balance of payments equilibrium is that

$$p''.NX(t) = 0$$

whence it follows that

$$F(e(t)/p(t), Y(t)) = 0\ldots \qquad (4)$$

Since the government would always attempt to achieve the highest level of output in the economy that is compatible with balance of payments equilibrium, it would ensure that the real exchange rate e/p is at the lowest possible level (let us call it ε'), so that in (1) it is the second term which determines the price level p(t), and this lowest e/p is given by

$$e(t)/p(t) = \varepsilon' = \{1/(1+\partial) - a - w'l\}/m.p' \ldots \qquad (1')$$

This highest level of output Y' then is such that

$$F[\{1/(1+\partial) - a - w'l\}/m.p' ; Y'] = 0 \ldots$$

The first term in the square brackets is the minimum possible real exchange rate, and Y' is that level of output which, at this minimum real exchange rate, yields zero net

exports, i.e. balance of payments equilibrium. To achieve this Y' the government chooses a combination of r' and G' such that

$$Y' = C(Y') + I(r') + G'\dots \qquad\qquad (5)$$

Since we have not explicitly introduced the effect of taxation, the implicit assumption, for simplicity, is that all government expenditure is financed by a fiscal deficit. The government chooses a mix of fiscal and monetary policies so that Y' is achieved.

Looking at it differently, the system (1'), (2') and (4) has four unknowns: Y, r, G, and e/p. The government can either fix r or G (and hence can choose any particular mix of the two), with the object of achieving Y'.

<center>II</center>

Once the economy gets exposed to free financial flows, the government ceases to have control over its interest rate, since the real interest rate in this economy would now have to be as attractive as that prevailing internationally. The only possible reason for its being out of line with what prevails internationally has to do with expectations of appreciation or depreciation in its exchange rate *for reasons other than differential inflation rates between the country in question and the rest of the world* (since inflationary expectations are already taken into consideration in so far as we are talking about *real* interest rate differentials). Being "in line" with the real interest rate prevailing internationally, however, does not mean being equal, as Mundell and Fleming presumed. Different levels of risk are associated with different countries and with different currencies; wealth holders therefore would need to be compensated by different levels of risk premia for investing in similar assets in different countries, which means that the real interest rates would never be identical across countries even when there are universally static expectations about the exchange rates. What this means in particular is that even when there are universally static expectations about the exchange rates (as we assume all through), the real interest rates in third world economies tend to be higher than in advanced capitalist economies in a world with free financial flows.

While this is clear and demonstrable, typically this means something more as well. Prior to financial liberalization which sets the stage for free financial flows, the administered interest rates in third world economies are deliberately kept low with the objective of stimulating capital formation. Indeed the real long term interest rates which are the ones relevant for capital formation decisions, are usually close to zero or even negative in such economies in their *dirigiste* phase, a fact that has drawn the ire of the World Bank which has characterized such a situation, in its typically emotive language, as one of "financial repression". Financial liberalization almost invariably therefore means an increase in the long term real interest rate in such economies compared to the earlier period. In our terminology in other words, r rises with financial liberalization.

Secondly, financial liberalization invariably also means a reduction in the ratio of government expenditure relative to GDP. Finance capital always dislikes large government expenditure. There are at least three reasons for this. First, it has a general dislike of a high level of activity, since that entails the possibility of inflation which hurts

<div align="right">4</div>

rentier interests. Secondly, it has a specific interest in reducing government expenditure, since a "withdrawal" on the part of government creates greater scope for its operation, and, in particular, "disinvestment" in public sector enterprises permits it to acquire valuable assets "for a song". Thirdly, it has a specific opposition to government expenditure arising from political-ideological reasons. The acceptance of any independent "activism" on the part of the government is an implicit admission of both the necessity and the feasibility of government intervention in a capitalist economy; it is therefore an implicit acceptance of a dilution of the social legitimacy of capitalism. Such dilution is particularly threatening for finance capital, which typically represents the interests of rentiers who constitute, in Keynes' telling phrase, "functionless investors". The whole ideological baggage of capitalism in general, and of finance capital in particular, consists therefore in emphasizing both the lack of necessity and indeed the supposedly disastrous consequences of government intervention in economic activity in any direct manner, i.e. in any manner by-passing the need to create "incentives" for capital. The only State intervention that finance capital likes, in other words, is that which is directed towards promoting its own interests, supposedly as a way of promoting the "general interest".

It is this opposition which was a major factor underlying the hostility to State intervention even during the Great Depression, and which played no mean a role in prolonging the Depression itself. This opposition which any nation-based finance capital has towards intervention by the concerned nation-State itself, acquires a spontaneous effectiveness when finance capital is globalized while the potentially-intervening nation-State continues to be a *nation*-State. In the event of the nation-State ignoring the caprices of globalized finance capital, finance simply flows out of the jurisdiction of that nation-State. (This is why Keynes who had advocated State intervention had insisted that "finance above all must be national").

In an economy open to free financial flows therefore we have $r > r'$ and $G/Y < G'/Y'$ (using the notations of the preceding section). As a result the level of output in an economy open to free financial flows is *ceteris paribus* less than in an economy *not* open to free financial flows. *This fact, it should be noted however, has nothing to do with any actual inflows or outflows of finance from the economy.*

III

There is however a further point here. If $Y < Y'$, then at ε', the lowest possible real exchange rate, *there would be a current account surplus.* If the Central Bank does interfere to peg the real exchange rate at ε', then foreign exchange reserves will build up and this may attract financial inflows, leading to a massive and growing pile up of reserves. Since the rate of return earned on these reserves is invariably much lower than what the finance that has flowed into the country earns, this means in effect the country "borrowing dear to lend cheap", a clearly unwise and unsustainable policy.

On the other hand if the Central Bank does not interfere to peg the real exchange rate, then the current account surplus will *ceteris paribus* give rise to an appreciation of the currency, which will further lower the level of activity in the economy. In other words, the initial contractionary effect of expenditure deflation by the government gives rise to a secondary contractionary effect arising out of the need to keep down current

5

account surpluses. Or looking at it differently, when a country has current account surpluses, it has before it two different ways in which these surpluses can be reduced or eliminated: one is by increasing domestic absorption, the most obvious instrument for which is an increase in government expenditure, which typically would have an expansionary effect on the economy. The other is an increase in the real exchange rate, which has the very opposite effect, namely a contractionary effect, on the economy. The fact that it is the latter that is preferred is attributable to the hegemony of finance capital.

This is an issue of immediate relevance. China and some other Asian economies are witnessing at present massive accumulations of foreign exchange reserves through persistent current account surpluses. (This is not the case with India since the Indian reserves have come largely through financial inflows). Since the counterpart of this accumulation is growing indebtedness on the part of the United States, the Bush administration has been demanding an upward revision in the values of several Asian currencies. Interestingly however the Bush administration has never demanded an increase in government expenditure in these economies, which would be an obvious and beneficial way of getting rid of current account surpluses; it wants instead to impose contraction on the Asian economies, which only shows the hegemony of finance capital in the decision making of the US administration.

The foregoing can be explained as follows. With static price and exchange rate expectations, with an interest rate that already includes a risk premium to compensate for country and currency risks, and with government expenditure relative to GDP pegged at some level g which is less than g' and which is in keeping with the preference of finance capital (in the sense for instance of being comparable to what prevails in other similar countries which do not experience persistent financial inflows or outflows), the magnitude of financial inflows can be considered as a random variable with mean zero[2]. For balance of payments equilibrium then, the current account deficit must be zero. The equilibrium real exchange rate must be such as to ensure, at the equilibrium output, a zero current account deficit.

Equation (2') now becomes

$$Y(t) = C(Y(t)) + I(r^*) + g^*.Y(t) + F(e(t)/p(t), Y(t))\ldots \qquad (2'')$$

where r* and g* are now given in accordance with the caprices of finance capital, with g*<g', and r*>r'. In addition we have, for balance of payments equilibrium, as before

$$F(e(t)/p(t), Y(t)) = 0 \ .. \qquad (4)$$

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[2] The assumption of a zero mean for the random variable constituting financial inflows may be objected to. But this assumption *per* se is secondary and of little consequence. The real underlying assumption of consequence is that the notion of balance of payments equilibrium remains unchanged (if we ignore direct foreign investment and foreign aid) between the *dirigiste* and the "free-financial-flow" regimes. And this is quite unexceptionable. Likewise, the fact that we have not explicitly introduced any growth-process into the economy even though we are discussing a dynamic situation in this paper, which may cause eyebrows to be raised, is also not a matter of serious concern. The argument of the paper will withstand any explicit dynamization of the model.

From (2'') and (4) we get the real exchange rate and the level of output. Since the real exchange rate is endogenously determined, it follows that it would not, except through sheer coincidence, be equal to ε' given by equation (1'), that is, the minimum real exchange rate compatible with capitalists getting the minimum profit margin. It follows then that in equation (1), it is the first term within brackets, that is the ratchet effect of the previous period's price, that determines p(t) and not the second (i.e. mark up) term. It follows then that the profit margin in equilibrium would be higher than the mark-up would have yielded. In other words, the first term of (1), or (1''), where

$$p(t) = p(t-1).… \qquad\qquad\qquad (1'')$$

together with (2'') and (4) determine e, p, and Y. Obviously, in equilibrium, Y < Y'. What is particularly noteworthy about this contraction relative to the pre-financial liberalization phase is the fact that it occurs quite independently of any volatility, which has not even been introduced as yet. Let us do so now.

IV

We introduce the implications of volatility by assuming that financial flows into and out of the country are randomly distributed around a zero mean, and then looking at the effects of deviations from this mean. When there are inflows, there would be an excess supply of foreign exchange. This, in the absence of Central Bank intervention (which we assume for reasons already given earlier, namely that intervention itself creates intractable problems over time), would push the value of the domestic currency upwards. This would cheapen the imported input and raise profit margins at the prevailing prices, without lowering the domestic prices, thanks to the ratchet effect postulated in equation (1). The increase in the nominal exchange rate in other words would be associated with an increase in the real exchange rate, since domestic prices would have remained unchanged. This would necessarily mean a reduction in net exports, i.e. a current account deficit (since net exports were zero to start with), whose magnitude would exactly offset the financial inflow. But such a current account deficit would, from (2''), necessarily mean a reduction in the level of output in the economy through a leakage of demand. In other words, in addition to the contractionary effects of deflation in general, there would be a *further* contractionary effect of financial inflows.

This last effect too has not been sufficiently appreciated in the literature. What it means is that when there is a financial inflow, then, in the absence of any Central bank intervention, it makes room for itself by creating an equivalent current account deficit, or excess of imports over exports, through an appreciation of the currency (indeed this is the *modus operandi* of arriving at a new equilibrium through currency appreciation). But any such deficit entails a leakage of demand abroad and hence a reduction of domestic output, a situation which can be called "debt-financed deindustrialization"[3]. A country in short is

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[3] The term "deindustrialization" is used in the sense of a reduction in the level of domestic output (which typically would be industrial output) owing to a leakage of demand abroad.

financing its own ruin, in the form of reduced output and increased unemployment, through incurring foreign debt. (And what is more, it can do very little about this, once it has exposed itself to free financial flows)

An obvious question arises here: if imported goods are out-competing goods domestically produced, then isn't the assumption that final goods prices remain unchanged, despite a reduction in the prices of the imported inputs, an unrealistic one? Why shouldn't the domestic capitalists rather compete with foreign goods by lowering prices, when they can easily afford to do so (since their profit-margins are increasing)?

There are two separate issues involved here: the first is a point of realism, the second a point of logic. The assumption of unchanged prices in the face of deindustrialization is *not* unrealistic, because typically it is not the final goods producers who directly import the foreign inputs, but a separate group of persons, the importers of foreign inputs, who sell these to the final goods producers. These importers, being oligopolists themselves, do not "pass on" the reduced foreign input prices to the final users immediately. And this is what produces de-industrialization.

The point of logic is this: if indeed domestic prices came down *pari passu* with the price of foreign currency, then a change in the nominal exchange rate will never lead to any change in the real exchange rate, in which case the foreign exchange market will never reach equilibrium. It follows then that a degree of price inflexibility in the face of declining imported input prices is a condition for the stability of the system itself. And from this it follows that "debt-financed de-industrialization" is inherent to the system.

But then the question arises: wouldn't exactly the opposite happen when there is an outflow of finance, so that the overall effects of inflows and outflows should cancel one another, leaving the average level of output exactly the same as would have obtained if these random disturbances around a zero mean had not occurred?

The two effects however are not symmetrical, since, in the event of financial outflows, the real exchange rate *cannot decline below its minimum level ε',* which was discussed earlier. Of course, as long as the outflows are small enough to keep the decline in real exchange rate within a limit, so that it still remains above the threshold ε', the effect of the outflow would be exactly the opposite of that of an inflow. But, there would be occasions when inflows are large, and so is the magnitude of de-industrialization, and other occasions when the outflows are equally large but the real exchange rate does not fall below ε', so that the expansionary effect is not of a matching order. It follows then that the overall effect of random disturbances of financial flows around a zero mean would be *on average the maintenance of an even lower level of output than would have obtained if there were no such random disturbances.* The effect of volatility *per se* therefore is contractionary, and this is superimposed on the contractionary effect of expenditure deflation on the part of the government.

This conclusion is strengthened by another important consideration. We have so far only talked of the real exchange rate not falling below the minimum level ε' and hence preventing the possibility of an activity expansion in the case of large capital outflows, that would be exactly symmetrical to the activity contraction entailed by comparable capital inflows. But we have not yet discussed what exactly happens in the case of capital outflows. Let us do so now.

If finance flows out, then the nominal exchange rate drops, and the price of the imported input increases. But, since at the going final good price, the workers are getting

their desired wage share, and the capitalists are getting a profit margin higher than the minimum acceptable to them, they take a cut in this margin and keep the final good price unchanged. The nominal exchange rate depreciation therefore causes a real exchange rate depreciation, and hence the net exports increase to finance the capital outflow; with this, the level of output and employment also increases in the economy. This is the symmetric case to the one where there is a financial inflow.

But, if the outflow is large, then the drop in nominal exchange rate is correspondingly large, and so is the rise in imported input price. If the maintenance of the final good price entails in this case a drop in the profit margin below the minimum acceptable level, then the capitalists would *raise the final good price*, so that the real exchange rate remains at ε' and does not fall below it. Since with the initial (i.e. zero-inflow-zero-outflow) output and real exchange rate ε', the increase in net exports *ex hypothesi* is insufficient to finance the outflow (which is the precise meaning of a "large outflow"), there would be a cumulative inflationary spiral without the possibility of the economy settling down at any new equilibrium position. In such a case, before an inflationary spiral of this sort comes into effect, the government nips this possibility in the bud, by perforce undertaking expenditure deflation, *compared to what it spent at the zero-inflow-zero-outflow situation[4]*. Thus, compared to the zero-inflow-zero-outflow situation, positive inflows, no matter of what size, give rise to output contraction, while positive outflows, if they are large, *also give rise to output contraction through further deflation in government expenditure.* (Only if the outflow is small would there be an expansion in output, symmetrical to the opposite *denoeument* that occurs for inflows). It follows then that *on average*, taking together the effects of inflows and outflows, which are assumed to be randomly distributed around a zero mean, the level of output *would be even lower than what prevails at this zero level which itself is lower than in the absence of free financial flows.*

We have so far assumed static expectations regarding the price level and the nominal exchange rate. The introduction of expectations in a more realistic manner would only strengthen the argument of this paper, *as long as net inflows and outflows occur at all*. In the case of net inflows, the conclusion about reduction in the level of output and employment would remain unaffected. But in the case of net outflows, wealth-holders' perception of the "inflationary-spiral point" would act as an additional factor influencing the magnitude of outflows, which would, if at all, accentuate the magnitude of inflows. The government, aware of this fact, would not wait until it has convinced itself that the initial inflow is "large enough" to generate an inflationary spiral, before undertaking deflationary policies; it would do so more or less straightaway when an outflow begins, lest it start a torrent of an outflow owing to inflationary expectations. In such a case, compared to the zero-inflow-zero-outflow level of activity, while any inflow would cause a reduction in output through an appreciation of the currency, any outflow too would cause a reduction in output owing to government expenditure deflation. The

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[4] The assumption that the government takes steps to prevent an imminent inflationary spiral, so that such a spiral, even the beginning of it, never actually becomes visible, is for simplicity; it is not essential for the argument. A consequence of it is that the actually visible price level remains unchanged compared to the zero outflow level, *no matter how large the actual inflow or outflow of finance into or out of the economy.*

conclusion that the average level of output would be below the zero-inflow-zero-outflow level, which itself is below the level associated with "no-free-financial-flows", would thus be further strengthened.

<div align="center">Prabhat Patnaik</div>