Discussion

Real Exchange Rate, Fiscal Deficits and Capital Flows: Erratum and Addendum

There is a case to be made for rapid progress towards capital account convertibility and a free float of the rupee as the 'fear of floating' is based on the unwanted dirigiste assumption of the omniscience of bureaucrats and the irrationality or ignorance of private agents.

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In our earlier paper [Lal, Bery, Pant (2003), henceforth LBP] there was a computational error which this note corrects. In addition it: (i) Extends, till 2001, our estimates of GDP growth for the case of full absorption of capital flows. (ii) It revisits the continuing controversy over whether the change in the net foreign assets (NFA) of the banking system gives the full measure of the potential investment foregone by the non-absorption of capital inflows (as asserted by Joshi and Sanyal (2004)). (iii) It also provides estimates of growth foregone within our simple growth model for the case espoused by Joshi and Sanyal, which can be taken as the lower bound of the foregone growth estimates from non-absorption of capital inflows. (iv) The note counters some of the theoretical complaints espoused by Singh and Srinivasan (2004) and Sen (2004). (v) It also revisits some of the policy issues discussed in our paper both in the light of the criticism made by Sen (2004), and taking into account recent developments and current debates.

I

The computational error was in Appendix III Table A-3 of the paper (Data Set for Alternative Growth Scenario). The data for capital inflows was in nominal rupees, while the data for GDP at factor cost was in real rupees. This led to the overstatement of the estimate of increased investment (I^) and thus the investment-to-income ratio with absorption of capital inflows (I^/Y). The corrected data, and the estimation of the growth foregone is given in the Appendix III, Tables A-2 and A-3 (corrected) at the end of this note, which replace Appendix III, Tables A-2 and A-3 in the original paper. Table 1 below gives the corrected figures for growth (replacing Table 3 in our original paper), while Figure 1 charts these alternative growth estimates (replacing our earlier Figure 4).

II

Joshi and Sanyal (2004:146) charge us with having "made a simple but devastating analytical error" in not recognising, from the macroeconomic identities in our Appendix I, that the opportunity cost of non-absorption of capital inflows and remittances is fully captured by the opportunity cost of the increase in foreign exchange reserves.[1] This claim is unjustified, as, within our framework the observed rise in foreign exchange reserves (ΔNFA) is the joint outcome of the extent of absorption of inflows and the net effect on absorption of domestic monetary and fiscal policy. Figure 2, which reproduces the one period traded (T) and non-traded (NT) diagram of the Australian model, can illustrate the point (the mechanics of the model and the diagram are given in our original paper).

The economy is initially at A, in internal and external balance[2] where an indifference curve (not drawn) is tangential to the production possibility frontier TN. In terms of the macroeconomic identities in our original Appendix I,

from (4a), (Y-E) = (X-M) = 0.

As, by assumption, there are no capital inflows (K) and remittances (R),

from (3), CA $\equiv$ (X+R-M) = 0, and

from (1a) ΔNFA $\equiv$ CA+K= 0

Also, from (8a) CA $\equiv$ (S-I) = 0.

Hence at A,

(Y-E) = (X+R-M) = (S-I) = 0 ...(1)

And ΔNFA = CA + K= 0 ...(2)

Now consider the position after there has been an inflow of capital and/or remittances (K+R= B). Assume only a fraction α of inflows B is absorbed. Furthermore, assume there is a net increase in excess demand from monetary and fiscal policy of ED. This leads to a new equilibrium at B on the production frontier and C on the new absorption (expenditure) line E't E'n, whose slope is the new appreciated real exchange rate (given by the slope of E't E'n). There will be a trade deficit (-(X-M)) of BC in the new equilibrium. This trade deficit can be decomposed into two parts. The first is the increase in absorption (expenditure) to OEn above income (output) of OYn (both in terms of the non-traded good), from the absorption of the inflows of αB. This is DB in Figure 1. The second part is the further increase in absorption (En E'n) due to the excess demand (ED) from expansionary fiscal and monetary policy. This leads to a further increase in the trade deficit by DC.

Table 1: Corrected Growth Scenario

Year	Actual GDP Growth (1)	Growth of GDP ^ (2)	Growth of GDP ^# (3)
1990-91	5.57	7.09	7.49
1991-92	1.30	1.88	2.25
1992-93	5.12	6.33	7.61
1993-94	5.90	10.30	11.51
1994-95	7.25	10.04	10.75
1995-96	7.34	9.22	10.19
1996-97	7.84	11.81	12.96
1997-98	4.76	6.76	7.32
1998-99	6.57	9.14	10.13
1999-2000	6.37	9.10	10.39
2000-01	4.37	5.50	6.32
2001-02	5.77	6.94	7.94

Notes: ^: If capital flows are absorbed (column 10 of Appendix III, Table A-2, corrected).
^#: If capital flows are absorbed and there is no crowding out of private investment (column 11 of Appendix III, Table A-2, corrected).

Figure 1: Comparative Growth Scenario

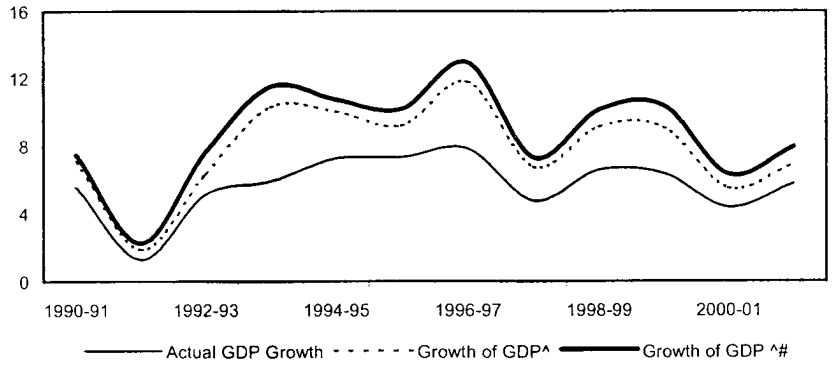
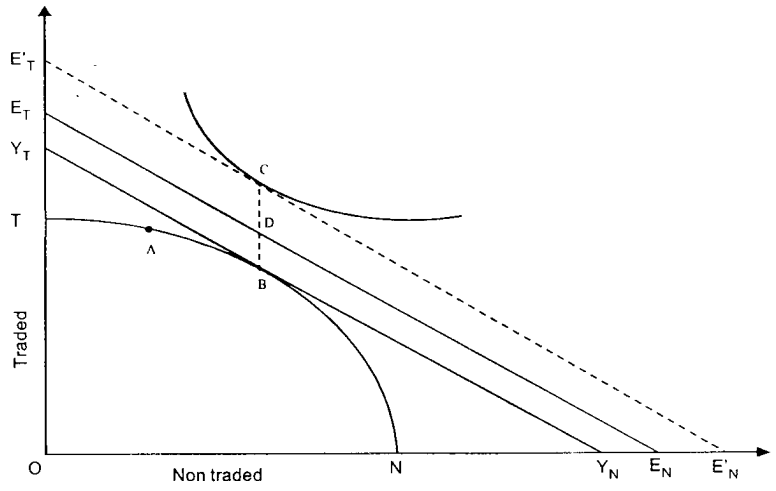


Figure 2: One Period Traded and Non-Traded Australian Model



Hence, M-X = α B + ED ...(3)

From the identities (3), (8a), and (9) in Appendix I of LBP we have

(Y-E)≡ (X-M) ≡ (CA–R) ≡ (S-I) – R

≡ ΔNFA – (K+R) ...(4)

Substituting for (X–M) from (3) above, and noting that B = (K+R), we have

(Y-E)= (X-M) = –αB – ED = (S-I) – R

= ΔNFA – B ...(5)

From which we can derive,

Δ NFA = (1-α) B – ED ...(6)

Now to see how the change in NFA is not equivalent to the value of the inflows absorbed, assume that:

B = 2 per cent of GDP

ED = 1 per cent of GDP

then the change in ΔNFA as a percentage of GDP for different values of α (the proportion of the inflows absorbed) is from (6) above,

	$\alpha = 1$	$\alpha = 0.5$	$\alpha = 0$
ΔNFA	-1	0	1

Clearly the change in reserves does not equal the amount of inflows not absorbed, as it also reflects the net absorption effects of domestic monetary and fiscal policy, which are also assumed to have changed as compared to the original configuration.

What of the savings-investment (S-I) and trade (X-M) balances?

From (5), and assuming for simplicity that R=0, so that B=K,

(S-I) = (X-M) = ΔNFA – B ...(7)

For the same values for B, ED, and using the derivations for ΔNFA for alternative values of α, we have, as percentages of GDP:

	$\alpha = 1$	$\alpha = 0.5$	$\alpha = 0$
(S-I) = (X-M)	-3	-2	-1

This shows that the savings-investment balance, the trade balance and the change in foreign exchange reserves are endogenously determined by the extent of the absorption of inflows and the net absorption effects of domestic monetary and fiscal policy. In contrast to Joshi and Sanyal's assertion, one cannot assume that the accounting identities imply that the change in reserves gives the extent of the non-absorption of inflows.

III

We have, nevertheless, estimated the growth foregone within our framework, for the Joshi-Sanyal assumption that the change in reserves gives the amount of investment foregone. This can be taken as the lower bound of the growth foregone by the RBI's policy of maintaining a relatively constant real exchange rate by sterilising capital inflows. The results are given in Table 2. Figure 3 charts the alternative growth estimates for the two limiting cases given by the full absorption of the inflow of capital on the one hand, and the change in reserves on the other. Finally, Figure 4 charts the per capita GDP, which would have been attained if the capital inflows had been absorbed under either of these limiting assumptions. Even on the lower estimates, the accumulation of foreign exchange reserves represents a significant opportunity cost in terms of the per capita income foregone. This cost has to be counterbalanced by any presumed additional safety that the reserves may have imparted, or additional growth through transitional undervaluation of the real exchange rate.

Singh and Srinivasan (2004) and Sen (2004) have both expressed theoretical discontents with our paper. Some of these, concerning the ad hoc nature of our procedures, we would unashamedly acknowledge. But the claim by Singh and Srinivasan (2004) that the Australian dependent economy model we have used does not integrate real and monetary aspects is false, as can be seen by examining the Mathematical Supplement to James Meade's classic *The Balance of Payments* [Meade 1951], on which the Salter-Swan diagrammatic model is based.

Table 2: Growth Scenario if Change in Forex Reserves are absorbed

Year	Actual GDP Growth (1)	GDP Growth if Change in Forex Reserves are Absorbed (2)
1990-91	5.57	6.04
1991-92	1.30	1.68
1992-93	5.12	5.76
1993-94	5.90	8.69
1994-95	7.25	8.25
1995-96	7.34	7.11
1996-97	7.84	8.81
1997-98	4.76	5.28
1998-99	6.57	7.30
1999-2000	6.37	7.12
2000-01	4.37	4.91
2001-02	5.77	7.16

Figure 3: Comparative Growth Rate

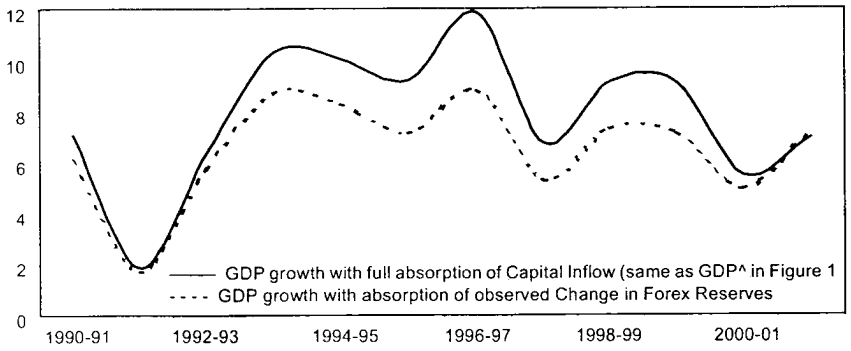
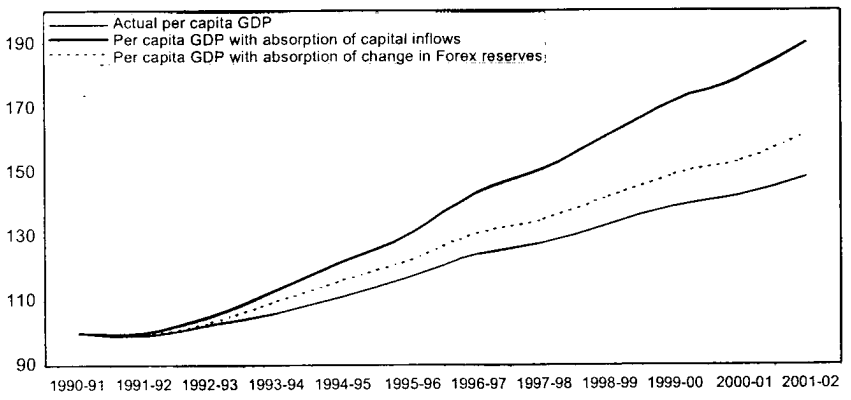


Figure 4: Alternative Growth Scenario



As Meade clearly states (equations 1.21, 1.22), his model includes an explicit money demand function of the Keynesian LM form, with money demand being dependent, in Meade's words, "upon the country's total national income as representing the total volume of transactions to be financed and the rate of interest as the other main factor affecting liquidity preference" (p 12). The monetary model of Lal, Bhide and Vasudevan (2001) used in LBP to estimate the crowding out effects on investment of the fiscal deficit has a Cagan-type money demand function [Cagan 1956; also see Lal 1995]. This, as Obstfeld and Rogoff (1996:515-17) show, is a special case of the LM form of the money demand function, and is thus consistent with the implicit money demand function underlying the dependent economy model. Thus implicitly the 'real' and 'monetary' models in LBP are integrated.

By contrast, Singh and Srinivasan (2004), in their model of the dependent economy add an explicit money demand function. They choose to use a proportional transactions demand for money, which is a variant on the cash-in-advance models of money demand. But as "there is no universally accepted framework for understanding the micro-foundations of money demand" [Obstfeld and Rogoff:513] there can be no 'right' model of money. So whether their explicit model of a proportional transactions demand for money tacked on to the real side of the dependent economy model is 'better' than the implicit LM demand for money model in the Salter-Swan framework we used, is a matter of taste.

In any case without implementing their model empirically, even for illustrative purposes as we have, it is difficult to see whether their alternative money demand function makes much difference.[3] Judging from the qualitative conclusions they derive from the model it is not clear that they do. Thus we would reject the charge that real and monetary models underlying our paper are any less integrated than is common in policy-oriented macroeconomics.[4]

What is true is that we did not write down an explicit integrated dynamic stochastic general equilibrium optimisation model. We used three separate models in an ad hoc manner to derive some illustrative numbers for the likely growth foregone by the non-absorption of capital inflows and the crowding out of investment by the fiscal deficit, and its interaction with monetary policy. We would nonetheless claim that this exercise is useful for policy discussions, and until someone produces such an optimisation model and estimates it with Indian data, there is not much more to be said. For as Krugman has noted: "For many purposes...ad hoc models are as good or better than the carefully specified, maximising intertemporal model...One of the most influential macro models of the 1990s, and deservedly so, is the revisitation of Mundell-Flemming-Dornbusch by Obstfeld and Rogoff (1995). It's a beautiful piece of work, integrating a new Keynesian approach to price stickiness (albeit with the ad hoc assumption that prices are set for only one period) with a full intertemporal approach to aggregate demand...But is this model actually any better at predicting the [impact of shocks] in the real world than a three or four equation, back of the envelope Mundell-Flemming model? The authors give no reason to think so" [Krugman 2000, cited in Vines 2003, p F358. Also see Krugman 1993].

One could make the same observations of the elegant models in Singh and Srinivasan (2004), and question whether they would be able to explain these models,[5] and any quantitative predictions derive from them, to even as economically literate a finance minister as the current one, as compared with our admittedly ad hoc approach summarised in Figure 1, of our original paper!

IV

The major purpose of our paper was in any case not theoretical, but was rather to provide a framework in which to raise and discuss important issues of current policy. While questioning our modelling, Singh and Srinivasan found our policy discussion "rich and informative". By contrast, Sen (2004), in addition to theoretical reservations similar to those of Singh and Srinivasan (addressed above), questions our recommendation for opening the capital account (while still maintaining restrictions on unhedged borrowing in foreign exchange) and allowing the rupee to float (p 4971 of our original paper). Joshi and Sanyal (2004) disagree with our view that the policy of sterilised intervention in the past reduced growth by much below the potential. They do, by and large agree that continuing the build-up of reserves is inefficient. They rightly emphasise the economic and quasi-fiscal costs[6] of continued sterilisation of capital inflows.

But instead of advocating a clean float and capital account convertibility as we do, they recommend a dirty float to maintain an undervalued real exchange rate to promote exports.

We gave reasons in our earlier paper about why exchange rate protection is undesirable. Joshi and Sanyal argue that the undervalued exchange rate they recommend in a dirty float is an 'export-led' growth strategy and not exchange rate protection, and is aimed "to shift to a higher growth path". The utilisation of a large pool of 'surplus labour' is provided as a justification. It should be remembered that a similar argument for putting the economy on a higher growth path was also used to justify protection through import controls in the past. Though, as we noted in our paper, exchange rate protection is less distortionary than the import protection of the past, it nevertheless involves similar though less severe inefficiencies in resource use. As long as the economy is open, and foreign demand for labour-intensive manufactures is booming (witness the phenomenal growth of Chinese exports), a market-determined exchange rate should ensure rapid and efficient growth.

Any boost to labour-intensive exports from a small, persistent undervaluation of the rupee is in any case likely to be swamped by the deleterious effects of the continuation of colonial labour laws. These particularly damage the expansion of those export products covered by protective legislation for small-scale industries, which cannot expand to the requisite efficient scale because they would then be subject to these labour laws. As an undervalued exchange rate also discriminates against non-traded goods by keeping down their relative price, the expansion of the infrastructure component of this sector which complements export production, is also slowed. Thus even on the legitimate grounds of promoting labour-intensive growth, given the constraints on public policy concerning labour laws and SSIs, it would be best to allow the market to play the dominant role in determining the nominal exchange rate, which is most easily achieved by substantially reducing Reserve Bank intervention in the market.[7]

Moreover, maintaining an artificially undervalued exchange rate is likely to lead to charges from other trading partners of 'unfair trade'. This is happening with China, which has followed this policy, and is likely to happen with India if its export growth came to match that of China. The current protectionist trends in developed countries against such 'unfair trade' would intensify, and would have some justification. Exchange rate protection is thus not likely to be a politically viable strategy in the contemporary international political economy.

Joshi and Sanyal seem to be against a clean float, because it would be at the price of "substantial volatility and misalignment of the exchange rate". They also claim that unlike a clean float (which in principle would not need reserves), their preferred policy is a dirty float in which "temporary" reversible inflows are sterilised. The reserve accumulation will finance their reversal, "and the unnecessary costs of the initial adjustment to their reversal are avoided... For example, resources may have to move out of exportables and importables; there might have to be transitional unemployment, etc". But this assumes omniscient authorities and myopic or irrational private agents.

Neither assumption is justified. How can the authorities, who are far from being omniscient, know if inflows are 'temporary' and need to be sterilised? Why would private agents not be able to perform the 'smoothing' required in the face of volatile capital flows if they were unsterilised? In fact there is evidence that private agents in India behave in textbook fashion (in terms of the intertemporal model of the current account) by indulging in consumption smoothing. Thus the RBI's *Report on Currency and Finance 2002-03*, presents a remarkable empirical finding (in its Box V 3). It states:

> An inter-temporal model for the period 1951-2002 is estimated for India using the savings-investment gap as a proxy for the current account in view of the limitations in the data on private consumption. The results indicate that the simple inter-temporal consumption optimisation model is able to explain the direction and turning point of the consumption-smoothing component of the current account balance fairly well. The correlation co-efficient between the optimal and actual current account balance is close to one. Thus fluctuations in the current account balance in India are the outcome of residents trying to smoothen their consumption paths when the national cash flow fluctuates. The result is noteworthy, given the restrictions on capital flows and the intermittent external shocks experienced (p 129).

In light of this, there is little reason to believe that far from omniscient bureaucrats (also subject to pecuniary temptations, as the experience of other countries demonstrates) will be able to do a better job of stabilisation with a managed float (in the face of irreducible uncertainty) than private agents under a free float with volatile capital flows. As such, we would still advocate rapid progress toward capital account convertibility and a free float of the rupee, as the 'fear of floating' endorsed by Joshi and Sanyal[8] is based on the usual unwonted dirigiste assumption of the omniscience of bureaucrats and the irrationality or ignorance of private agents.

Finally, there is the worry expressed by Sen (2004) that opening the capital account and allowing the rupee to float would, in the absence of fiscal consolidation, lead to a Latin American crisis as the fiscal deficit spilled over into the balance of payments. This is clearly possible, and hence we would stress the usual advice of reducing the fiscal deficit and strengthening the banking system. But, suppose the polity does not allow fiscal consolidation? Should the country, nevertheless, open up its capital account allowing it to absorb capital inflows and obtain higher growth, even if it leads to a crisis? This could be a disaster for the incumbent politicians, but would it necessarily be one for the country?

It depends on what one assumes happens before and after the crisis. If, as we have argued, the absorption of capital flows with the opening of the capital account leads to a rise in the growth rate, this gain in per capita income till the crisis hits has to be set off against the loss in income during the crisis. Moreover, a great deal of evidence [see Lal and Myint 1996] suggests that a crisis is what sets off the dissolution of the prior equilibrium of political interests that had maintained an unsustainable fiscal deficit. If, therefore, fiscal consolidation follows the crisis, the country would be on an even higher growth path. The present value of these gains in income (when compared with the path of unchanged policies), can be expected to be greater than the temporary loss of income during the crisis.[9] India's own experience with the 1991 crisis, leading to the partial liberalisation which put the economy on a sustainable higher growth path, with only a small cost of income foregone during the crisis, would seem to bear this out. So, as far as the interests of Indians and not their politicians are concerned, the 'fear of crises' may be as unwarranted as the 'fear of floating'.

In any case as our recommendation is for maintaining controls on unhedged borrowing in foreign exchange by domestic residents; the private sector (including

domestic banks) would not be able to create the systemic problems which led to the Asian crisis under our proposal. This of course would require deepening the markets for hedging, which is likely to emerge with floating of the rupee. Any crisis which then arises will be due to the public sector, and can be expected (in fact maybe the only way) to spur its necessary reform.

This is clearly unpalatable policy advice and for that reason unlikely to be accepted. But, what it does suggest is that, as with so many other forms of dirigisme, both the policy of exchange rate protection by sterilising capital inflows, and of bottling up the fiscal deficit through capital controls are in effect 'rent-seeking' devices, which benefit various domestic interests at the expense of the general weal, and hence are unjustified. Moreover, as the economy continues on its unsustainable fiscal path, even with current policies, an eventual crisis seems inevitable, though as Singh and Srinivasan rightly emphasise we have no way of predicting when it will happen, or of explaining why it has not already happened. Perhaps they can put their elegant 'integrated' models to work and tell us why. EPW

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Notes

1 Singh and Srivinasan (2004) also refer to it as "this logical error".

2 It is assumed that there is no fiscal deficit and that monetary policy maintains the balance between aggregate demand and supply.

3 Singh and Srinivasan also question the static model in Appendix II (A) of LBP on which the estimates of the real exchange rate were based. This model is a truncated version of a model in Lal (1985), which is based on Harberger (1982) and Polak (1977) and Argy (1977). It is a short-run model where the capital stock specific to each sector is fixed, unlike the growth model where both capital and labour are variable in the two industries. So the supply of both the traded and non-traded goods is dependent on their respective product wages. There is a typographical error in equation A.5, which should read: Ts = c0 + c1 (Pt-w). There is an explicit money demand function not shown in the Appendix. Money supply relative to demand does appear in the demand for both traded and non-traded goods (see equations A1 and A4). The crucial equation for estimating the change in the real exchange rate with capital inflows is given by equation A8a, and this is correctly derived from the model, using the correct version of equation A5. The model does have implicit restrictions on the parameters a0..,b0..,c0. A similar model has been used by Harberger to explain real exchange rate movements in Chile, which yields the same equation as A8a to derive the change in the real exchange rate. This paper may also be consulted for the reasons why the demand equations for the two goods are written as they are as they "embody the Slutsky condition and also incorporate the spending of all income" [Harberger, p 139].

The model in Appendix II is not used to derive the crowding out of investment by the fiscal deficit. This is based on the model in Lal, Bhide and Vasudevan (2001). Thus there are three separate models which we used to give us the illustrative numbers we derived.

Singh and Srinivasan also criticise us for a minor error for not incorporating the tax-subsidy on traded goods in our diagram. This in fact was done in Lal (1985), which is very similar to the diagram in the Singh and Srinivasan Appendix A. Our earlier paper was designed primarily to illustrate policy choice, it would have been pedantic for us to have included this element as well in our Figure 1, which was already fairly cluttered.

4 Singh and Srinivasan also seem to imply that the Mundell-Flemming model is more 'integrated' than the Salter-Swan model which we have used. As the Mundell-Flemming model also uses an LM money demand function, it

Appendix III: Table A-2 (Corrected)

Year	Lambda LN (1)	Lambda KN (2)	N/Y (3)	K* - L* (4)	K*^ - L* (5)	K*^# - L* (6)	Lambda (7)	Growth of GDP (8)	A (9)	Growth of GDP^ (10)	Growth of GDP^# (11)
1990-91	0.9451	0.9944	0.9730	4.15	5.28	5.58	-0.049	5.57	0.068	7.09	7.49
1991-92	0.9436	0.9943	0.9729	2.47	3.59	4.28	-0.051	1.30	0.027	1.88	2.25
1992-93	0.9393	0.9583	0.9470	2.83	3.50	4.21	-0.019	5.12	0.036	6.33	7.61
1993-94	0.9394	0.9586	0.9485	2.94	5.12	5.72	-0.019	5.90	0.041	10.30	11.51
1994-95	0.9406	0.9588	0.9487	5.74	7.94	8.50	-0.018	7.25	0.024	10.04	10.75
1995-96	0.9399	0.9568	0.9503	5.96	7.49	8.27	-0.017	7.34	0.022	9.22	10.19
1996-97	0.9433	0.9584	0.9529	5.18	7.80	8.56	-0.015	7.84	0.024	11.81	12.96
1997-98	0.8236	0.7051	0.7755	5.50	7.80	8.45	0.118	4.76	0.132	6.76	7.32
1998-99	0.8273	0.6906	0.7852	5.22	7.25	8.04	0.137	6.57	0.219	9.14	10.13
1999-2000	0.2750	0.5616	0.5542	5.64	8.05	9.20	-0.287	6.37	0.584	9.10	10.39
2000-01	0.2821	0.5602	0.5626	5.69	7.16	8.23	-0.278	4.37	0.380	5.50	6.32
2001-02	0.2896	0.5633	0.5655	5.61	6.75	7.72	-0.274	5.77	0.498	6.94	7.94

Note: Column 1, 2, 3, 4, 7, 8 and 9 are same as in original paper. However, other columns have changed due to change in Appendix 3 Table A-3.

Appendix III: Table A-3 (Corrected)

Year	Real Gross Domestic Product at Factor Cost (Rs Crore) (1)	Real Net Domestic Capital Formation (Rs Crore) (2)	Real Net Capital Stock (Rs Crore) (3)	Capital Inflow (Nominal) (Rs Crore) (4)	Real Capital Inflow (Rs Crore) (5)	Crowding Out of Private Investment (Nominal) (Rs Crore) (6)	Crowding Out of Private Investment (Real) (Rs Crore) (7)	I^ (Inclusive of Capital Flows) (Rs Crore) (8)	I^# (Exclusive of Crowding Out of Private Investment) (Rs Crore) (9)	I/Y (10)	I^/Y (11)	I^#/Y (12)	K/Y (13)	K*=dK/K (14)	K*^ = dK/K (15)	*^# = dK/K (16)	L* (Per Cent) (17)
										(Percentage)			(Ratio)	(Ratio)	(Ratio)	(Ratio)	
1990-91	692871	126185	1918761	16607	21767	4321	5663	147952	153616	18.21	21.35	22.17	2.77	6.58	7.71	8.01	2.43
1991-92	701863	97782	1995190	18891	22287	11742	13852	120069	133921	13.93	17.11	19.08	2.84	4.90	6.02	6.71	2.43
1992-93	737792	109285	2077675	13007	13907	13719	14669	123193	137862	14.81	16.70	18.69	2.82	5.26	5.93	6.64	2.43
1993-94	781345	115059	2144285	46926	46926	12847	12847	161985	174832	14.73	20.73	22.38	2.74	5.37	7.55	8.15	2.43
1994-95	838031	153424	2283999	54162	50252	13866	12865	203676	216541	18.31	24.30	25.84	2.73	6.72	8.92	9.48	0.98
1995-96	899563	171394	2470063	44257	37729	22657	19315	209123	228437	19.05	23.25	25.39	2.75	6.94	8.47	9.25	0.98
1996-97	970083	161051	2615023	84471	68582	24421	19828	229633	249461	16.60	23.67	25.72	2.70	6.16	8.78	9.54	0.98
1997-98	1016266	178926	2762869	81301	63656	22930	17954	242582	260536	17.61	23.87	25.64	2.72	6.48	8.78	9.43	0.98
1998-99	1083047	178624	2882955	78276	58728	30172	22637	237352	259990	16.49	21.92	24.01	2.66	6.20	8.23	9.02	0.98
1999-2000	1151991	199950	3022264	101233	73078	47858	34547	273028	307575	17.36	23.70	26.70	2.62	6.62	9.03	10.18	0.98
2000-01	1198592	187105	3138233	97505	68328	47858	33537	255433	288970	15.61	21.31	24.11	2.62	5.96	8.14	9.21	0.98
2001-02	1267833	180229	3251252	107694	70957	47858	31532	251186	282719	14.22	19.81	22.30	2.56	5.54	7.73	8.70	0.98

Note: Columns 1 to 4, 6, 10, 13, 14 and 17 are same as in the original paper. Column 5 and 7 are generated by deflating Nominal Capital Inflows (column 4) and Crowding out of Nominal Private Investment (column 6) by the Net Domestic Capital Formation Deflator. As a result Column 8, 9, 11, 12, 15 and 16 are revised.

is no more or less 'integrated' than the Salter-Swan model. The major difference between the two models is that whereas the Mundell-Flemming model brings monetary variables, income and the interest rate to the fore, keeping the real adjustments in the background, the Salter-Swan model does the opposite. Thus in the reduced forms of the model (the modified Mundell-Flemming model as it has been called by Krugman (1993)), the relevant schedules for internal and external balance are drawn in terms of interest rates and income, whilst in the Salter-Swan model they are drawn in terms of the real exchange rate and absorption (see the famous Swan diagram). As we were concerned with the real exchange rate and absorption effects of capital inflows, the Salter-Swan framework is more transparent for our purposes.

5 See, for example, their equations for the 'integrated' version of the Salter-Swan model on pp 2471-2473.

6 With the launch of the market stabilisation scheme (MSS), in April 2004 these quasi-fiscal costs have now become more transparent as genuinely fiscal costs.

7 Shah and Patnaik (2004) point out that Reserve Bank intervention in the currency market appears to have drastically diminished after May 2004. In their judgment growth in the dollar denominated reserves stock after this date reflects the effects of valuation changes and income on reserves, rather than additional primary purchases.

8 Joshi has been consistent in opposing floating, and the current arguments in Joshi and Sanyal are reminiscent of Joshi (1979). These were countered in Lal (1980).

9 See Rancierre et al (2003) who provide empirical evidence for a "robust empirical link between higher growth and a propensity for crisis" (p 2).

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