

Private Sector Investment and Savings Behaviour: The Policy Implications of Capital Account Disaggregation

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1. INTRODUCTION

After a prolonged period of macroeconomic adjustment, lasting at least a decade in most LDCs, much has been learned (and in many cases re-learned) and a consensus reached about many key policy points, such as the virtues of budgetary balance, the need for a strong real exchange rate, and the requirement for micro-economic reforms if markets are to work properly. To a considerable extent, moreover, there has been success in closing current account deficits, reducing government expenditure and moderating rates of inflation. Much of this logic is reflected in the standard policy models employed by the Bank and the Fund which I shall discuss today.

However, to the extent that macroeconomic adjustment is intended to lead on to renewed growth (and eventually poverty alleviation) the debate is far less consensual. Two main lines of critique have been directed at what can be called the 'Washington Consensus': The first suggests that macroeconomic adjustment – as theorised and practised – has had negative effects in terms of employment, income distribution and even the environment, particularly because of the reduction in real wages and key public expenditures. The second line of dissent from the standard model stresses the deleterious effect of orthodox macroeconomic adjustment packages on output growth itself, both through unnecessarily severe demand reductions on the one hand, and excessive adjustments (upward) to real interest rates and (downward) to public investment levels without taking into account the domestic implications of external debt positions.

On this occasion I would like to turn to a rather different line of critique of the Bank-Fund model, one which is based to a considerable extent on work I have

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been carrying out in collaboration with leading research institutes such as the PIDE in a number of countries.¹ In the next section I shall set out a brief exposition of the implicit nature of the private sector in the standard (i.e. Bank-Fund) models; and make some suggestions as to how the private sector might be policy-modelled more realistically in terms of behaviourally distinct companies and households. In Section 3 the "Revised Minimum Standard Model" used by the World Bank is extended to demonstrate the implications of a heterogenous private sector. In Section 4 disaggregated data for public and private capital accounts in Pakistan between 1970 and 1990, are used to illustrate the general arguments presented.

2. THE INFRASTRUCTURE OF THE STANDARD MACROMODEL

At the heart of adjustment policy lies the generally accepted proposition that sound recovery is to be based on domestically financed private investment in traded production, supported by appropriate government policies and international financial arrangements. However, the available macroeconomic data indicates that while private profit shares in GDP have risen and private savings rates have risen, this increased resource availability has not been translated in the new productive capacity formation [Pfefferman and Madrassy (1991)]; and moreover that despite the strategic primacy attributed to the private sector in terms of output (particularly export) growth and employment generation (particularly by small enterprises) standard models do not provide a behaviourally plausible model of the private sector. Above all, orthodox models appear to conceive the private sector as passively reacting to government initiatives rather than adjusting to external shocks of its own accord or having particular investment and savings strategies independently of official policy instruments such as the interest rate.

The private sector as characterised by standard macromodels such as Addison (1989); IMF (1987) and Khan *et al.* (1990) is essentially homogeneous, being made up of the small owner-managed firms to be found in any neoclassical textbook [Dailami and Guidale (1991)] whose investment decisions are constrained by the savings available from households after consumption requirements are met. The financial sector is essentially passive, accepting deposits from saving households and allocating these first to the government, and then to the private sector [Khan and Montiel (1989)]. Given that savings are interest-inelastic, this leads directly to the supposed crowding-out mechanism [Blejar and Khan (1984)]. This reductionist approach is further exacerbated by the suggestion [Gersowitz (1989)] that the corporation can be considered as a 'veil' for household utility-maximising

¹The project is titled 'International Capital Flows and Domestic Economic Adjustment', being funded by the Dutch Government and advised by the World Bank. Case study countries include Pakistan, Mexico, Thailand, Tanzania, Philippines, Colombia, Bolivia and the Sudan.

decisions by their owners' households.

In fact, the private sector is highly heterogenous in all developing economies. At the very least, we must distinguish between large and small firms, which have very different financial behaviour. 'Large' firms – a category which includes both domestic corporations and the affiliates of multinationals – are constituted as legal entities, and their management attempt to maximise asset value over the long run within a determinate capital structure. Such large firms generally enjoy an oligopolistic position within 'home' (i.e. non-traded) market and as exporters often organise intra-firm transactions. These firms enjoy both privileged access to commercial bank credit and have considerable own funds which can be used to finance investment [Darke (1980)]. Membership of a 'group' of such firms further reduces the aggregate savings constraint on company investment [Leff (1976)]; while as is the case in industrial countries, management generally operates conventional gearing ratios in order to determine the composition of capital finance [Samuels *et al.* (1990)]. The ability to base prices on the markup from production costs (or to negotiate for an improved post-tax real exchange rates in the case of exporters) means that profit margins are generally sufficient to finance expansion or obtain credit, so long as the expectations of market expansion – 'business confidence' – are sufficient.

In sharp contrast, small firms are closely linked to the household. Indeed it would seem more rational to regard the LDC household as a producing and trading unit rather than the neoclassical model of the family unit optimising consumption streams over time depicted by Gersowitz (1989). This is particularly true of those households which do in fact engage in investment and savings. However, it is true that such accumulating households are constrained by the lack of own savings because they much face intense market competition (and thus narrow profit margins) and are discriminated against by banks due to the high unit cost of and lack of collateral. In other words, in the household sector investment is constrained by savings. However, it should be noted that the working capital requirements of the small firm will oblige them to hold considerable deposits in the banking system – which may also be used as collateral for investment credit.

This kind of dual structure is, of course, familiar in developed countries as well [Sawyer (1985)]. It has interesting implications for macroeconomic policy, because increased budget deficits will crowd out small rather than large firms; while large firms may increase their investment if adequate infrastructure is supplied. Finally, the implication of the orthodox model that public investment contributes less to aggregate output growth than private investment in practice [Khan and Reinhart (1990)] does not seem to be borne out by the econometric evidence [Sarmad (1990)]. A high degree of complementarity is much more plausible [Pradhn *et al.* (1990)] although to the extent that small firm investment is

constrained by access to finance, presumably it is larger firms which can take most advantage of the new production opportunities provided by public infrastructure.

The least that we can do, therefore, is to disaggregate the standard macro-model in order to distinguish between households and firms [FitzGerald and Vos (1989)]. To this task we shall now turn.

3. A SIMPLE DISAGGREGATION OF THE RMSM

3.1 The RMSM in Basic Form

The World Bank's Reduced Minimum Standard Model (RMSM) can be set out in a condensed form [Addison (1989)] as a system of seven equations with seven endogenous variables and four policy variables. In the short run, GDP is determined by previous investment decisions. All values are 'real', and so the only explicit price is the real exchange rate. We employ the following notation:

F	Net external finance (i.e. current account deficit);
M	Imports of goods and services;
X	Exports of goods and services (parameters X_0, x);
e	(Real) exchange rate;
M	Imports of goods and services (parameters M_0, m);
Y	National income;
Z_g	Net bank lending to the public sector;
G	Current government expenditure;
I_g	Public investment;
t	Tax rate;
Z_p	Net bank lending to the private sector;
S_p	Private sector savings;
I_p	Private sector investment; and
c	Private consumption propensity.

First, the balance of payments (denominated in 'dollars')

$$F = M - X \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.1)$$

$$X = X_0 + x.e \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.2)$$

$$M = M_0 + m.Y \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.3)$$

Note that this implies that the current account of the balance of payments

(i.e. net borrowing from abroad) is endogenously determined in the model; if (as the WB does in practice, albeit not in theory) public sector borrowing abroad (F_g) is taken as exogenous, then in fact net *private* borrowing abroad is 'endogenous' in the sense of being the result of the interaction of policy variables (F_g and e). This is also true of IMF (1987), albeit from the viewpoint of the monetary approach to the balance of payments. Further, this implies that greater public borrowing abroad may be matched by capital flight by the private sector (i.e. $F_p = M - X - F_g < 0$).

Second, the fiscal balance is conventionally defined in terms of policy-determined current expenditure (G), to which debt service can be added to make the model more realistic without affecting the results under discussion here, and public investment (I_g) on the one hand, and current income as a policy-determined tax pressure and net borrowing from the banking system (Z_g) on the other.

$$Z_g = (G + I_g) - t.Y \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.4)$$

Third, the banking system (i.e. the capital market) is essentially passive. It receives all private savings and net foreign finance (F) as resources, and allocates these between credit to the public and private sectors, the former having prior claim and thus the latter acting as sink.

$$Z_p + Z_g = S_p + e.F \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.5)$$

And fourth, the private sector capital finance account is defined in terms of a simple consumption function applied to post-tax income (1.6) and an investment function dependent entirely on bank credit (1.7). As all private savings are assumed to be deposited in the banking system and private investment demand (however determined) is in excess of the supply of loanable funds, this is in effect also an expression of the capital market balance in (1.5):

$$S_p = (1 - c)(1 - t)Y \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.6)$$

$$I_p = S_p + e.F - Z_g = Z_p \quad \dots \quad \dots \quad \dots \quad \dots \quad (1.7)$$

These seven equations (of which four are in fact accounting identities) provide a solution for seven endogenous variables (S_p , I_p , Z_p , Z_g , F , M , X), in terms of four exogenous policy variables (t , G , I_g , e), a set of parameters (C , x , m , M_0 , X_0) the current, and/GDP level resulting from investment in

previous years. The main target variables appear to be the balance of payments (i.e. reducing F), and the recovery of private investment (I_p) as the long-term source of growth. This construct has obvious and familiar consequences in terms of the stability of tax rates, high real exchange rates and a reduced level of public expenditure.

3.2 An "Expanded Minimum Standard Model" (EMSM)

The EMSM is the RSM with a disaggregation of the private sector capital finance account [Equations (1.5) to (1.7)] between corporations (subscript 'c') and households (subscript 'h'). Equations (2.1) to (2.4) are identical to (1.1) to (1.4).

$$I_p = I_c + I_h \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.5)$$

$$S_p = S_c + S_h \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.6)$$

$$Z_p = Z_c + Z_h \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.7)$$

Household savings in the EMSM have the conventional form (assumed in the RSM to apply to the whole private sector) of the residual after consumption out of disposable income.

$$S_h = (1 - c) (1 - t) Y_h \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.8)$$

Again we assume that households (i.e. small firms) have liquidity requirement related to their commercial transactions. In this simple model these 'money balances' (i.e. deposits in the banking system) are a constant proportion (π) of household income (Y_h), so that the increase (D_h) in such balances is given by:

$$D_h = \pi \cdot \Delta Y_h \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.9)$$

Household investment (I_h) is not determined by desired capital stock, but rather by financial constraints. The flow-of-funds balance for this sector is:

$$S_h + Z_h = I_h + D_h$$

$$I_h = Z_h \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.10)$$

In contrast, the EMSM has a separate corporate savings and investment functions which reflect a simple theory of firm behaviour. Corporate investment is not constrained by funding, but rather depends upon the real exchange rate (a proxy for profitability), the change in GDP (for market size and the infrastructure effect of public investment. Note that a more dynamic model could include the effect of changes in capital stock or output and exports; public investment effects could also be lagged. The functional form could also be expressed as a stock-adjustment model. Here we have simply:

$$I_c = a_1 \Delta Y_c a_2 e + a_3 I_g \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.11)$$

Corporate savings are the retained portion of profits (Y_c), this depending on the part of new investment that is to be financed internally (b_1) in other words the 'gearing ratio' adopted by the corporation as between fixed assets and equity. Corporations increase their money balances (i.e. bank deposits) in proportion (b_2) to the increase in fixed assets, in order to provide working capital as suggested by McKinnon. New bank credit to corporations (Z_c) is available on demand so that it is found as a residual in this sector's flow of funds balance.

$$S_c = b_1 I_c \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.12)$$

$$D_c = b_2 I_c \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2.13)$$

$$Z_c = I_c + D_c - S_c = (1 - b_1 + b_2) I_c \quad \dots \quad \dots \quad (2.14)$$

Note that we are thus assuming that the preferential bank borrower is still the public sector (Z_g), followed by the corporate sector (Z_c), leaving the household sector (Z_h) as residual (unsatisfied) borrower. The flow of funds identity for the banking sector (which replaces (1.5) in the RMSM but has fundamentally the same interpretation) is as follows, and serves to define the level of new credit to the household sector (Z_h):

$$D_h + D_c + e.F = Z_c + Z_h + Z_g \quad \dots \quad \dots \quad \dots \quad (2.15)$$

These fifteen provide a solution for fifteen endogenous variables ($S_h, I_h, Z_h, S_c, I_c, Z_c, S_p, I_p, Z_p, Z_g, F, M, X, D_h, D_c$), in terms of the same four policy variables (t, G, I_g, e) and set of parameters (x, m, M_0, X_0) as the RMSM. The main difference, as we shall see, is the response of aggregate

private investment/savings and its components to the policy variables, and thus the implications for the recovery of growth on the one hand, and the distribution of income on the other. For purposes of comparison, the aggregate private savings and investment equations in the EMSM which are (the equivalents of (1.6) and (1.7)) in the RMSM are as follows:

$$\begin{aligned}
 I_p &= I_c + I_h \\
 &= I_c + \{(1 - c)(1 - t)Y_h - I_c(1 - b_1) + e.F - Z_g\} \\
 &= b_1(a_1\Delta Y_c + a_2e + a_3I_g) \\
 &\quad + (1 - c)(1 - t)Y_h + e.f - Z_g \dots \dots \dots (2.16)
 \end{aligned}$$

$$\begin{aligned}
 S_p &= S_c + S_h \\
 &= b_1I_c + (1 - c)(1 - t)Y_c \dots \dots \dots (2.17)
 \end{aligned}$$

3.3 Comparison of the Two Models

The EMSM has, in consequence, a basic structure identical to the RMSM, except that private sector behaviour is more clearly defined – but to do so only conventional behavioural assumptions, well grounded in the literature, have been made. We now turn to the question of what difference this simple disaggregation might make.

First, we take the effect of changes in the real exchange rate (e). In the RMSM, there is no explicit effect on private savings at all. Differentiating (1.6) we derive:

$$\delta S_p / \delta e = 0$$

The effect of changes in the real exchange rate on private investment in the RMSM comes about through the effect on exports. Curiously, when exports rise (with an appreciating real exchange rate) the flow of external finance falls in the RMSM, because it reflects the current account deficit on the balance of payments, so that private investment actually falls. From (1.7):

$$\delta I_p / \delta e = F - e.x$$

Although this might be seen by the World Bank as an even stronger argu-

ment for reducing credit to the government (Z_g) in order to reduce 'crowding out' at the same time. In contrast, the EMSM implies a positive response of private savings to the real exchange rate through the effect on retained corporate profits. From (2.17) we have

$$\delta S_p / \delta e = \delta S_c / \delta e = b_1 \cdot a_2 > 0$$

The net effect on private investment is also larger than in the RMSM because of both the positive effect of profitability on corporate investment and the crowding out of household investment arising from the increased credit requirements of corporations. From (2.16) we derive

$$\begin{aligned} \delta I_p / \delta e &= \delta I_c / \delta e + \delta I_h / \delta e \\ &= a_2 + \{(b_1 - 1) a_2 + F - e \cdot x\} \\ &= b_1 \cdot a_2 + F - e \cdot x \end{aligned}$$

The net balance of payments effect ($= \delta S_p - \delta I_p$) is of course the same in both models.

Second, we examine the effect of an increase in public investment (I_g). In the RMSM, the effect on private savings is again zero. From (1.6):

$$\delta S_p / \delta I_g = 0$$

The impact on private investment arises from the 'crowding out' effect of the increased public sector deficit (1.4) and thus through (1.7) we have

$$\delta I_p / \delta I_g = -1$$

The policy inference is obvious enough, and frequently made by the Bank. However, the EMSM reveals a more complex picture. On the one hand, there is a positive effect on private savings, because of the impact on corporate investment. From (2.17) we have:

$$\begin{aligned} \delta S_p / \delta I_g &= b_1 \cdot \delta I_c / \delta I_g \\ &= b_1 \cdot a_3 > 0 \end{aligned}$$

On the other hand, the net effect on private investment arises from the

combination of a positive impact on corporate investment, due to the 'crowding in' by improved infrastructure, and the negative impact on household investment, due to the 'crowding out' effect through the capital market. From (2.16) we derive:

$$\begin{aligned}\delta I_p / \delta I_g &= \delta I_c / \delta I_g + \delta I_h / \delta I_g \\ &= a_3 + \{(b_1 - 1) a_3 - 1\} \\ &= b_1 \cdot a_3 - > -1\end{aligned}$$

In other words, the depressive effect of unfinanced public investment is sectorally differentiated, with interesting distributive implications.

Thirdly and finally, we explore the effect of a change in the tax rate (t). The RMSM indicates, from (1.6) a negative effect on private savings:

$$\delta S_p / \delta t = - (1 - c) Y < 0$$

But, curiously perhaps a positive effect on private investment due to the reduced credit requirements of the public sector. From (1.7) we have:

$$\delta I_p / \delta t = c \cdot Y > 0$$

The EMSM yields a very similar result, although it is interesting to note that the impact is exclusively on the household sector, which pays the taxes:

$$\delta S_p / \delta t = \delta S_h / \delta t = - (1 - c) Y_h$$

$$\delta I_p / \delta t = \delta I_h / \delta t = c \cdot Y_h$$

In sum, the disaggregation of the private sector capital account – with the household sector operating on the 'neoclassical model' but corporate behaviour based on 'McKinnon assumptions' – yields an expanded version of the RMSM which is not only more realistic but also have clearly different policy implications.

3. DISAGGREGATING THE CAPITAL ACCOUNT FOR PAKISTAN

Let us now turn briefly to the data for Pakistan, in order to illustrate the

argument rather than to come to any specific empirical results. Table 1 contains a breakdown of the capital account between the public sector (government and public enterprises) and the private sector, and then between corporations (i.e. firms quoted on the Karachi stock exchange, in this case) and households – this last category implicitly including unquoted firms and informal enterprises as well as households as such.²

Starting with gross domestic investment the relative stability of this as a share of GDP on the long term is notable, but it is interesting to note how public investment rate rose during the 1970s and then steadily declined as structural adjustment programmes were applied. Private investment rates have also been remarkably stable: here the central characteristic appears to be the low level of capital formation by corporations (much lower than their share of output would seem to require); in contrast, small enterprises appear to be the main private actors in capital formation and presumably responsible for the sustained and high rate of GDP growth in Pakistan over the past two decades. There is, however, some sign of a tendency of corporate investment rates to fall in the 1970s but rise in the 1980s (as might be expected from the state of business expectations); but the reverse trend is observed in the case of household investment.

Foreign capital inflows are not in fact dominated by 'aid' that is not inflows received by the public sector; and were clearly much less in the 1980s than the 1970s. Private sector inflows, both recorded (mainly DFI and 'unrecorded' estimated on the basis of balance of payments discrepancies), are rather larger than might be expected: little is known about these flows, but they are probably dominated by remittances of wages and profits from Pakistani nationals resident abroad. This latter flow can thus be considered as an addition to private savings rather than, as in the case of the public sector, the accumulation of long-term liabilities.

National savings rates differ sharply between institutional sectors. Government savings are low, as is well known, reflecting the lack of tax reform and administrative commitments (despite very low levels of social expenditure); but it is interesting to note that the level of public enterprise investment (0.7 percent of GDP in 1978–90) means that the positive effect of structural adjustment in increasing public enterprise savings (which rose from 0.4 percent of GDP in 1978–81 to 2.0 percent in 1987–90) was such as to generate a net surplus in this sector. Private savings in contrast, have two interesting characteristics. First, the very low rates of profit retention by private corporations; and

²For the methodology, see FitzGerald and Sarmad (1990). The data sources are Government of Pakistan *Economic Survey* and State Bank of Pakistan *Balance Sheet Analysis of Joint Stock Companies*.

Table 1

Capital Accounts of the Public and Private Sectors (Percentage of GDP)

1970-90	1970-77	1978-81	1982-86	1987-90
13.12	10.43	15.17	14.83	14.31
1.12	0.42	2.30	1.74	0.55
12.00	10.01	12.87	13.09	13.75
0.64	0.54	0.55	0.56	0.91
12.02	9.68	12.32	12.53	12.84
18.21	17.28	19.39	18.68	18.28
9.89	9.10	11.33	10.30	9.52
8.32	8.18	8.06	8.38	8.75
1.86	1.63	1.36	1.91	2.46
6.36	5.79	6.71	6.47	6.29
-5.09	-6.85	-4.23	-3.85	-3.97
5.09	6.85	4.23	3.85	3.97
2.67	4.35	2.67	0.93	1.51
2.41	2.50	1.56	1.92	2.46
0.94	0.56	0.80	1.51	1.11
1.48	1.94	0.76	1.41	1.35
6.10	4.32	6.36	7.63	7.46

Source: K. Sarmad 'External Finance, Domestic Resource Mobilisation and Development in Pakistan' (Mimeo, PIDE/LISS, January 1992).

Note: Period averages.

indeed the low self-financing rates for the corporate sector as a whole (about one-third of investment) reflects reliance on bank credit for this purpose. Second, the curiously high and rising rate of 'household' savings: there is good reason to believe that this saving is in fact the 'forced' reduction of consumption to finance fiscal deficits.

Perhaps the most interesting figure in Table 1 is the large and increasing share of GDP transferred from domestic private-sector to the public sector ("Z" in Table 1). This is, in effect, the domestically financed deficit of the public sector – the difference between public investment on the one hand, and the sum of public sector savings and external finance on the other. The size and trend in this transfer reflects both the limits of macroeconomic adjustment in achieving fiscal equilibrium and the evident reduction in net aid flows over that period. The proportion of public investment financed in this way has risen from 48 percent in the 1970–77 period to 78 percent in 1987–90, which can be expected to have severe macroeconomic consequences.

In sum the private sector capital account, implicit in most macroeconomic analyses, is made explicit by this methodology. What is clear, even by cursory examination of aggregate trends, is that the private sector savings is *not* the stable entity assumed by orthodox policy models. It has fluctuated widely over time in terms of both level and composition. In particular, if we separate out the private sector flows in a 'sources and uses of funds' format (see Table 2) then it can be seen that the increasing rate of private savings discussed above has been complemented by a fairly steady inflow of external capital to provide comparatively high level of private resource mobilisation, averaging 16 percent of GDP during the 1980s, compared to about 13 percent in the 1970s. However, it is clear that the relatively low level of private investment cannot be attributed to a 'lack of savings' because in fact little more than half of the funds available to the private sector are in fact used for fixed capital formation, the rest being used to acquire monetary instruments in order to finance the domestic PSBR. This asset acquisition is, of course, both voluntary (particularly in view of high real interest rates in recent years) and involuntary – in the form of increased money balances required by transactions demand under inflation.

The very large (and increasing) financial transfer to the public sector can be presumed to have some 'crowding out' effects. Both savings and investment rates in the corporate sector are low, but their access to credit and retained earnings is unconstrained. Thus the net effect is more likely to be felt on 'household' (i.e. small firms), a sector which only reinvests half its savings. In consequence, a reduction in the public sector deficit could be expected to have significant distributional effects through a more rapid expansion of small-scale production and employment.

Table 2

Private Sector Capital Account (Percentage of GDP)

	1970-90	1970-77	1978-81	1982-86	1987-90
Sources of Funds					
Savings	12.0	10.0	12.9	13.1	13.8
Abroad	2.4	2.5	1.6	2.9	2.5
Total	14.4	12.5	14.5	16.0	16.3
Uses of Funds					
Investment	8.3	8.2	8.1	8.4	8.8
Transfer	6.1	4.3	6.4	7.6	7.5
Total	14.4	12.5	14.5	16.0	16.3

Source: Table 1.

4. CONCLUDING REMARKS

It would seem highly desirable that standard macro-policy models (such as the World Bank's RMSM) be reformulated to make explicit the assumed behaviour of corporations and households as savers and investors; and that those assumptions should be as consistent as possible with the known microeconomic features of the country in question. This in turn has considerable implications for the effect of real exchange rate policy and public expenditure on macroeconomic equilibrium. In addition, such an approach would lead to a more complex view of capital flows: even if 'aid' can still be regarded as largely exogenously determined, the private flows are presumably closely related to private accumulation decisions.

Such disaggregation requires, of course, a reliable data base. Work on Social Accounting Matrices has tended to emphasise detailing the production process (i.e. the input-output matrix) and the distribution of income between household groups. An integration of fiscal and monetary data with the rest of the SAM using a flow-of-funds techniques does not represent unsurmountable obstacles; while a number of sectoral studies could provide micro-data on the financial flows within the private sector. Once the capital accounts are properly identified within the SAM, it also becomes much more feasible to construct a

CGE model suitable for macropolicy analysis.

However, much more systematic work is needed on the way firms (whether corporations or households) make savings and investment decisions in practice in semi-industrialised economics. Such empirical analysis of firm behaviour is, of course, systematically carried out in OECD countries; but curiously neglected in countries such as Pakistan. Nonetheless, it is quite likely that a considerable amount of information of a 'business school' type does exist (on topics such as gearing ratios) which could be used with advantage by research economists.

It may well be that a return to the fundamental Keynesian preoccupation with the investment and savings behaviour of the main economic institutions in a given social formation (or internationally)³ and in particular the differential behaviour of households and corporations *as particular forms of firms* in semi-industrial economies (such as Pakistan), might shed valuable light on the mixed response of private investment to macroeconomic adjustment programmes. This return to the authentic Keynes would help overcome the oversimplified picture of a 'neoclassical' (in fact virtually Ricardian) model of the private sector build up from an abstract model of the optimising household rather than the reality of a heterogenous private sector made up of large and small firms.

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³This the topic of a parallel project at The Hague on international capital flows in a 'World Accounting Matrix' upon which my colleague Dr Luitik is reporting to this Conference.

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**Comments on
“Private Sector Investment and Savings Behaviour:
The Policy Implications of Capital Account Disaggregation”**

The effort by Professor FitzGerald and his colleagues to improve on the model which is conventionally used by the World Bank and IMF as a basis for their policy dialogue with member countries is surely one to be welcomed. And the research agenda which follows from it should be endorsed accordingly. However, in preserving with this project, it may be appropriate for its promoters to recognise that, in general, the World Bank and IMF are content with the model they now have, with the available data, and also with the underlying research base. For, if it were otherwise, then they would already have done more to change the situation. The question must be asked, therefore, as to what interest might be served by addressing Professor FitzGerald's agenda, which can be characterised as an attempt to improve (i) the quality of the data; (ii) our understanding of how the economy works; and (iii) the amount of structure which is in consequence built into the standard model. And the answer must be that, in a narrow sense, World Bank and IMF operations would be the most seriously effected since, at present, they have a primary influence in estimating the national income for many countries and, therefore, in saying what the facts are. Similarly, the World Bank is the major source of research funding, which gives it a position of power and influence on the direction in which enquiries are focused. And the fact that the models are flexible and lacking in structure makes them all the easier to manipulate and control: the indirect impact of policies must necessarily be ambiguous in models which have insignificant internal structure. It can therefore be argued that the most likely beneficiaries from this research are the developing countries, who can potentially strengthen their own hand by having better data and more realistic models as an agreed foundation for policy dialogue with the Bretton Woods institutions.

It may easily be forgotten that the most significant boost towards an improvement of policy models came in the second half of the 1970s. It derived from Hollis Chenery's growing dissatisfaction with the use of his own two-gap model, and gave birth to the new wave of computable general equilibrium models as applied to developing countries. The evolution of social accounting matrices to address a new agenda of distributional issues was by then already well under way, and the link between SAMs and models was being forged, not only as an efficient way of building a modelling capability, but also as a key to the transfer of models

and their replication, which is, of course, essential if models are to contribute as common ground for a policy debate.

In inheriting this background, Professor FitzGerald now argues that the main area in which there is a need to improve the existing models is in their treatment of the closure of the capital account (the balance of savings and investment) and, in particular, to recognise the importance of the private corporate sector, in the first instance by recognising this sector as being distinct from the household sector, and then to follow the distinction through by promoting research on corporate behaviour in an economy which is adjusting.

There can be little doubt that this focus on macroeconomic closure, and a specific recognition of the simultaneous element in savings and investment decisions, is of the first order of importance for macroeconomic behaviour, and this is neatly demonstrated in the appendix to the paper under discussion. But, in recognising this point, I hope that the models which are now to be developed will not discount some other important issues, such as the treatment of the labour market, duality in production, inequality among people, and the distinction between traded and non-traded goods. The great adventure on which economics is now launched via the development of CGE models is that several aspects of reality can be modelled simultaneously. Seen in this context the work of Professor FitzGerald and his colleagues would eventually be of great value, the measure of which will be the number of countries which install their own model to supplant the standard offering from Bretton Woods.

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**Comments on
“Private Sector Investment and Savings Behaviour:
The Policy Implications of Capital Account Disaggregation”**

Before I get down to substantive issues, I would like to take this opportunity to present some thoughts that arise from the recent IMF-sponsored Seminar on Structural Adjustments and Macroeconomic Policy Issues held in Lahore in October 1991 that have a bearing on this paper. I do this because I feel we should not lose sight of what we are attempting to model and what we want to use such a model for? Secondly, because the paper presented by Professor FitzGerald is, as he puts it, “a Research Agenda rather than a Report of Conclusive Empirical Results..... or the setting out of some new theoretical propositions”, I will also take this opportunity to seek a few minor clarifications.

Pakistan, as we are all aware, is implementing a series of reforms aimed at adjustment. We are the recipients of the IMF Structural Adjustment Facility. The best strategy is to seek a judicious balance of sound demand management to correct fiscal and monetary imbalances accompanied by adequate supply side measures to achieve growth oriented adjustment. The thrust of the economic reforms, in summary, is privatisation, deregulation and unleashing of the potential of the private sector to accelerate economic growth while maintaining macro-economic stability and self-reliance. The Finance Minister of Pakistan, this morning, mentioned that intensive efforts being made for better public sector performance particularly in the areas of human resource development, physical infrastructure improvement and environmental protection. So what we in Pakistan seem to be aiming at is growth oriented adjustment without losing sight of equity considerations and welfare improvements – issues that were dealt with at some length by Professor Naqvi in his presidential address this morning. These seemingly diverse objectives, add at least in the short run, to the complexity of the “research agenda” especially in terms of the modelling.

There can be no disagreement with the author’s motivation to develop policy relevant models of the private sector that realistically incorporate behaviourally distinct companies and households. It would be really interesting to see the results for Pakistan in due course of time as indeed the full blown SAM with all its details. I would, However, like to seek some clarifications. What are these “medium/large firms” of which little is known especially in the case of Pakistan? Just as there is a need to model behaviourally distinct companies and households, there is also a need to take into consideration differences across countries. It is not possible to gener-

alise these definitions across all semi-industrialised countries. What are the reasons to expect these “medium/large firms” to behave differently, under structural adjustment, especially in the long run? why would they face a different set of prices and constraints in the long run?

In setting up the accepted position that at the heart of adjustment policy lies the proposition that sound recovery is to be based on domestically financed private investment in traded production, supported by appropriate government policies and international financial arrangements, the question arises as to whether the RMSM’s or the reformulated standard policy models with different behavioural functions, that the author advocates, also seek to incorporate aspects of the international climate and trade patterns that would impact on such “traded” production. There are implications of adjustment through private sector investment in traded production in terms of choice of technology, choice of product and eventually human capital formation where the international environment is crucial. Even more generally, as a short term phenomenon, a positive international environment is crucial for the success of adjustment programmes being undertaken by developing countries like Pakistan. At present, this environment is not very positive for Pakistan. Net official development assistance in real terms is declining, private capital flows are scarce and international trade in the face of the deadlock in the Uruguay round is affected by growing protectionism. The textile trade, which is of particular importance for Pakistan’s export target, remains outside GATT rules.

We have been partially successful in our structural adjustment programme – at least, that is what the recently released last tranche of the IMF structural adjustment facility would imply. But we must remember that we initiated the structural adjustment programme, unlike other countries, before we had a full blown economic crisis on our hands. During the 1980s, we experienced growth rates of about 6.5 percent per annum on average. Our problems, therefore, were not of crisis magnitude when we initiated the structural adjustment programme. However, the research agenda that Professor FitzGerald proposes is extremely important to us. The need to disaggregate models to incorporate behaviourally distinct entities is important. However, some of the more basic issues and clarifications that I have highlighted above need to be resolved on a country by country basis. For the same reasons, that Professor FitzGerald gives for incorporating behaviourally distinct companies and households in policy relevant models of the private sector, it is also important to account for the distinct characteristics and the international environment facing different developing countries.

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