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SUSTAINABLE AND EXCESSIVE CURRENT ACCOUNT DEFICITS

by

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RÉSUMÉ

Les déficits de la balance des opérations courantes sont-ils largement responsables de la propagation des crises financières dans les marchés émergents qui reçoivent des flux importants de capitaux privés ? Ce document présente plusieurs résultats de recherche relatifs à ce problème. *Premièrement*, la doctrine de Lawson — selon laquelle les politiques publiques ne devraient pas se soucier des déficits des comptes courants liés aux comportements incohérents du secteur privé — a été discréditée par les crises monétaires qui ont récemment frappé l'Asie et l'Amérique latine. *Deuxièmement*, il est possible de préciser quel niveau de déficit des comptes courants est tenable à long terme. *Troisièmement*, on ne peut se fier à une approche intertemporelle pour définir le seuil à partir duquel les déficits deviennent « excessifs ». Quatrièmement, il faut éviter les déficits extérieurs importants lorsque la monnaie est surévaluée, que le secteur bancaire prend trop de risques et que l'on observe une chute brutale de l'épargne privée.

SUMMARY

Large current account deficits are often assumed to play an important role in the propagation of financial crises in emerging markets in receipt of heavy private capital inflows. This paper reaches some major conclusions. *First*, the Lawson Doctrine — according to which current account deficits that result from a shift in private-sector behaviour should not be a public policy concern — has been discredited by recent currency crises in Latin America and Asia. *Second*, it is possible to define the size of current account deficits that should be sustainable in the long run. *Third*, the intertemporal approach to the current account does not provide a reliable benchmark to define when deficits become "excessive". *Fourth*, large external deficits should be resisted if unsustainable currency appreciation, excessive risk-taking in the banking system and a sharp drop in private savings are seen to coincide.

PREFACE

Both the Mexican crisis of 1995 and the Asian financial crisis which began in mid-1997 have demonstrated that current account deficits can pose serious problems for policy makers, even in the absence of public sector deficits. As emerging economies adopt market-oriented reforms, therefore enhancing their attractiveness as destinations for international investment, the risks of incurring excessive current account deficits from private flows may increase.

Policy makers in emerging economies are thus faced with a new challenge: that of resisting or accepting the large current account deficits that may result from heavy private capital inflows. Central to their dilemma is knowing at what point deficits originating from private flows become "excessive". By identifying when external deficits are in a long-term sustainable range and when they might become excessive, this paper helps to resolve this dilemma. The author finds that the absolute size of private inflows is not the most important factor, nor is it the relationship between flows and GDP. Recent evidence suggests that large external deficits should be resisted if unsustainable currency appreciation, excessive risk-taking in the banking system, and a sharp drop in private savings are seen to coincide. A case is made, however, for accepting all foreign direct investment flows.

This paper, on a question of urgent public policy concern in both developing and OECD Member countries, is part of the Development Centre's research on macroeconomic interdependence and capital flows.

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I. THE SHORTCOMINGS OF THE LAWSON DOCTRINE

The current account deficits analysed in this paper share three important features. First, they are "private-sector driven" in the (non-Ricardian) sense that they do not reflect government budget deficits. The paper examines the experiences of four Asian and four Latin American countries that have not had public-sector deficits during the 1990s, but have received sizeable capital imports. With the public budget in balance and private capital mobile in these countries, the current account is determined by private-sector savings-investment decisions. Second, the current account deficits are "overfinanced" (except just prior to currency crises), implying a positive overall balance of payments and rising levels of foreign exchange reserves. Third, a part of the deficit is financed by cyclical capital flows, as has been generally the case for a large share of emerging-market flows during the 1990s (see, e.g., Calvo, Leiderman and Reinhart, 1996). Their cyclical determination makes these flows subject to reversal.

Commenting on concerns about the United Kingdom's balance of payments in a speech to the International Monetary Fund, the British Chancellor Nigel Lawson concluded in September 1988 (a year before a deep crisis with falling output and surging unemployment set in): "we are prisoners of the past, when UK current account deficits were almost invariably associated with large budget deficits, poor economic performance, low reserves and exiguous net overseas assets. The present position could not be more different". What came to be internationally known as the Lawson doctrine is a proposition that has been most eloquently expressed by Max Corden (1977; and, with some qualifications, 1994):

> The current account is the net result of savings and investment, private and public. Decentralised optimal decisions on private saving and investment will lead to a net balance — the current account — which will also be optimal. There is no reason to presume that governments or outside observers know better how much private agents should invest and save than these agents themselves, unless there are government-imposed distortions. It follows that an increase in a current account deficit that results from a shift in private sector behaviour should not be a matter of concern at all. On the other hand, the public budget balance is a matter of public policy concern and the focus should be on this (Corden, 1994).

The fact, however, that large current account deficits primarily reflected a private-sector saving-investment imbalance did not prevent private capital markets from attacking currencies in Chile (early 1980s), in the United

Kingdom and the Nordic countries (late 1980s), in Mexico and Argentina (mid-1990s), and in several Asian countries (1997). So what was wrong with the Lawson doctrine?

— *First*, in a forward-looking rational-expectations framework, current account balances are always the result of private-sector decisions, with or without public-sector deficits. With Ricardian equivalence, a public budget deficit immediately stimulates private savings to pay for future taxes. People who subscribe to the Lawson doctrine are thus saying that they do not believe in Ricardian equivalence (i.e. they believe in optimal private-sector decisions, but not in rational expectations). In fact, the Ricardian offset coefficient has been estimated to average 0.5 for developing countries (Edwards, 1995); other things equal, a deterioration in the current account worth 5 per cent of GDP thus requires the public-sector deficit to worsen by 10 per cent of GDP.

— *Second*, current private-sector liabilities are often contingent public-sector liabilities. Foreign creditors may force governments to turn private-sector debt into public-sector obligations, as happened in Chile after 1982. Furthermore, private-sector losses tend to be absorbed eventually by the public sector, either in terms of tax revenue foregone or through costly resolutions of banking crises, in particular when financial institutions are deemed "too large to fail". Balance-of-payments and financial crises are often caused by common factors, such as domestic financial liberalization, implicit deposit insurance, or exchange rate-based stabilization plans (Kaminsky and Reinhart, 1996).

— *Third*, observed and expected returns to saving and investment can be distorted by various market failures: *a)* the Harberger externality: private borrowers may not internalise the rising marginal social cost of their external borrowing that arise from the upward-sloping supply of foreign capital (Harberger, 1985); *b)* excessively optimistic expectations about permanent income levels after major changes in the policy regime can lead to over-borrowing, because financial market institutions fail as efficient information conduits between depositors and borrowers (McKinnon and Pill, 1995). Financial market bubbles may add to this boom mentality by discouraging private savings through wealth effects.

— *Fourth*, a worsening current account deficit may lead to an unsustainable appreciation in the real exchange rate. Such an appreciation can conflict with development strategies based on the expansion of exports and efficient import substitution, which rely on a

reliable and competitive exchange rate. Overvalued exchange rates cause sub-optimal investments which are costly to reverse, undermine active trade promotion, export diversification and productivity growth, and breed capital flight. Large swings in real exchange rates, often a result of temporary capital flows, have been found to depress significantly machinery and equipment investment and thus long-run growth performance (Agosin, 1994).

— *Fifth* (as now also stressed by Corden, 1994), markets are concerned with country risk and look at a country's total debt ratio. Therefore, the current account as a whole, and not just the sources of its change, become relevant. Once debt ratios and current account deficits exceed certain levels (see Section II), decentralised decision making can lead to excessive borrowing from a national point of view (again, due to the Harberger externality), particularly when increased borrowing is for consumption rather than for investment into the tradables sector.

Table 1 displays three hard-landing episodes in Latin America where the required switch in the current account went along with sharp drops in real GDP, even sharper cuts in private per capita consumption, and often strong depreciation in the real exchange rate. During the bust, the benefits of consumption-smoothing and growth enhancement through foreign savings did indeed ring hollow. As it is clear by now that the Lawson Doctrine has been repeatedly discredited, there is a need to define when private-sector driven current account deficits might be called sustainable and when excessive. This is all the more important as demographic divergences between the ageing OECD area and the emerging countries can be predicted to stimulate massive net capital flows from North to South (MacKellar and Reisen, 1998).

Table 1. **Macroeconomic Adjustment in Selected Countries**

Country	Year (period avg.)	Current account/GDP (%)	Real GDP Growth (%)	Real priv. cons. growth p.c. (%)	Real exchange rate appreciation (%)
Chile	1980	-7.1	7.8	1.5	22.0
	1981	-14.5	5.6	2.4	8.4
	1982	-9.5	-14.1	-12.4	-20.6
	1983	-5.6	-0.7	-5.1	-20.4
Mexico	1993	-6.5	0.6	-2.1	5.8
	1994	-7.8	3.5	3.7	-3.7
	1995	-0.3	-6.9	-9.2	-28.1
Argentina	1993	-2.9	6.0	1.2	7.4
	1994	-3.5	7.4	3.7	1.7
	1995	-0.8	-4.4	-9.2	0.4

Sources: IMF, *International Financial Statistics*; J.P. Morgan, *World Financial Markets*; own calculations.

This paper is structured as follows. *First*, it presents various long-term sustainability measures of debt-augmenting capital flows. Since large current account deficits will not be financed by foreigners forever, authorities need to know the required magnitude and time profile of the subsequent adjustment back to payments balance. An unsustainable deficit is not necessarily an "excessive" deficit, so the size of the current account deficit does not give rise to normative judgements; what matters, rather, is the **source** of the deficit. *Second*, the paper consults the intertemporal approach to the current account for a prediction about how the "equilibrium" current account should respond to a reform-induced productivity rise and to a drop in the world interest rate — two impulses that have figured prominently in the discussion on the determinants of recent capital flows to emerging markets. Section IV of the paper makes a case for resisting part of foreign savings when unsustainable currency appreciation, excessive risk-taking in the banking system, and a sharp drop in private savings coincide (for how to resist, see Reisen, 1996). Thus the appropriate policy response is to strike a balance between the benefits of consumption-smoothing and of financing viable investment versus the economic costs of excessive private borrowing. A case can be made that foreign direct investment is less likely than other capital flows to stimulate excessive private consumption and a real appreciation problem.

II. LONG-TERM SUSTAINABILITY

A large external deficit will not be financed by foreigners forever. At some point, there will inevitably have to be adjustment back to payments balance. It is thus not only important to know the **sources** of the current account deficit (see Section III), but also the **size** and the **time profile** of the balancing adjustment. That makes long-term sustainability of the current account deficit a benchmark of which authorities should be aware. This section presents a conventional debt dynamics equation to arrive at a notion of intertemporal solvency, emphasizing the role of potential GDP growth, the real exchange rate, and the desired level of foreign exchange reserves[1]. The section builds on recent work by Milesi-Ferretti and Razin (1996) and Edwards, Steiner and Losada (1996).

Let us first consider an economy in steady state, with liabilities as a fraction of the country's GDP that foreigners are willing to hold in equilibrium, denoted by d which can be interpreted as an "equilibrium portfolio share". In equilibrium, i.e. with d held constant, the country accumulates net liabilities, equal to the current account deficit CAD **plus** the net accumulation of international reserves FX, both as fractions of GDP, in proportion to its long-run GDP growth, γ.

$$CAD + \Delta FX = \gamma d \qquad (1)$$

Long-run GDP growth also exerts two indirect effects on the steady state current account that is consistent with a stable debt-to-GDP ratio. First, as the economy expands, the desired level of international reserves also grows. The literature on the demand for international reserves has empirically identified two important determinants (Heller and Khan, 1978): the level of imports; and the variability in the balance of payments which, by creating uncertainty, increases the demand for reserves. Uncertainty in the balance of payments is ignored. In principle it can be incorporated into the analysis, by making predictions about the coefficient of variation from the time trend in the foreign reserve ratio. Denoting real annual import growth by η, the change in the desired reserve ratio can be written as

$$\Delta FX = [(1 + \eta)/(1 + \gamma)]FX - FX \qquad (2)$$

Incorporating (2) into (1) yields

$$\gamma d = CAD + [(\eta - \gamma)/(1 + \gamma)]FX \qquad (3)$$

A second channel through which GDP growth indirectly impacts on debt dynamics is the Balassa-Samuelson effect[2]. In the long run, **relative** growth leads to real exchange rate appreciation, largely driven by the evolution of productivity differentials between traded and non-traded goods in the domestic

economy and in the rest of the world. Real exchange rate appreciation per unit of GDP growth, denoted by ε, reduces both debt and foreign exchange reserves as a fraction of GDP, so that equation (3) becomes

$$(\gamma + \varepsilon)d = CAD + [(\eta + \varepsilon - \gamma)/(1 + \gamma)]FX \qquad (4)$$

Equation (4') describes the steady-state current account deficit that can be sustained over the long run if the debt ratio remains constant and desired reserves rise in proportion to import growth:

$$CAD = (\gamma + \varepsilon)d - [(\eta + \varepsilon - \gamma)/(1 + \gamma)]FX \qquad (4')$$

Table 2 provides numerical estimates of equation (4′) for four Latin American and four Asian countries. The variables *d* (total external debt/GDP) and *FX* (international reserves/GDP) refer to 1996 estimates as given in JP Morgan, *World Financial Markets* (March 28, 1997). The parameters γ, ε and η are estimated as described in the Appendix.

Table 2. **Sustainable Current Account Deficits in Steady State**
(per cent)

Country	**CAD**	=	(γ+ε)d*	-	[(η+ε–γ)/(1+γ)]FX*		memo: d	memo: FX
Argentina	**1.6**	=	(0.043+0.007)50	-	[(0.318+0.007-0.043)/1.043]	3.5	34	6.1
Chile	**2.0**	=	(0.042+0.006)50	-	[(0.069+0.006-0.042)/1.042]	11.4	30	20.2
Mexico	**1.9**	=	(0.052+0.008)50	-	[(0.126+0.008-0.052)/1.052]	14.0	51	5.4
Peru	**3.8**	=	(0.078+0.009)50	-	[(0.152+0.009-0.078)/1.078]	6.5	51	13.6
Indonesia	**3.0**	=	(0.061+0.004)50	-	[(0.073+0.004-0.061)/1.061]	9.9	45	8.7
Malaysia	**1.7**	=	(0.065+0.014)50	-	[(0.111+0.014-0.065)/1.065]	39.6	38	28.3
Philippines	**2.1**	=	(0.057+0.004)50	-	[(0.112+0.004-0.057)/1.057]	16.6	56	13.5
Thailand	**2.8**	=	(0.072+0.010)50	-	[(0.133+0.010-0.072)/1.072]	19.7	50	20.0

* See text for explanation.

Table 2 displays the results of calibrating equation (4′) for the long-run steady-state current account ratio implying constant debt and reserve levels relative to GDP. Since a high debt ratio can be sustained by a larger deficit in the current account than a smaller debt ratio, it is assumed for all sample countries that foreign investors are comfortable with tolerating a debt ratio of 50 per cent, i.e. $d^* = 50$. The target level of foreign exchange reserves for all countries is assumed to be equal to half the import ratio (six months of imports). The sustainable steady-state deficits on the current account displayed in Table 2 are essentially driven by potential growth rates. Their size, as a percentage share of GDP, is relatively small, fluctuating between 1.6 (Argentina) and 3.8 (Peru).

While the steady-state simulations in Table 2 are relevant for those countries close to the external debt threshold of 50 per cent of GDP, Argentina and Chile reported debt stocks much below such a level. For a certain period, therefore, countries with low levels of debt or high foreign-exchange reserves can run a higher current account deficit. Table 3 considers a hypothetical adjustment of the current debt-GDP ratio to 50 per cent and of foreign exchange reserves to a target level of half the import-GDP ratio (*m*). The resulting "transitional" current account deficits vary largely across countries. To reach the targeted debt-GDP and reserve levels within five years, Mexico would have to run a current-account *surplus* worth more than 5 per cent of GDP. Chile, by contrast, could enjoy a five-year period of current-account *deficits* of 5 per cent of GDP to reach at the imposed levels of debt stocks and foreign exchange levels.

Table 3. **Transitional Current Account Deficits**
(five-year adjustment to d*=50 and FX*=0.5m)

Country	**1/5CAD**	=	1/5[d*-(1–γ–ε)d	-	FX*-((1-η–ε)/1+γ)FX]
Argentina	**3.67**	=	18.65	-	0.27
Chile	**5.15**	=	-17.63	+	8.13
Mexico	**-5.16**	=	-16.78	-	9.02
Peru	**1.36**	=	3.44	+	3.38
Indonesia	**-0.45**	=	-0.49	-	1.73
Malaysia	**-0.87**	=	11.32	-	15.69
Philippines	**-3.30**	=	-7.41	-	9.08
Thailand	**0.32**	=	5.94	-	4.35

* See text for explanation.

A largely unresolved question is whether net foreign direct investment flows should be included when computing sustainable current account deficits. From 1970 to 1982, Singapore ran a current account deficit equal to 12.1 per cent of GDP on average; in the early 1970s, the deficit peaked at around 20 per cent of GDP several times. Almost half of the corresponding net capital inflows consisted of foreign direct investment (FDI). Real GDP growth averaged more than 8.6 per cent per year over the period, and the domestic saving rate doubled from 21 per cent in 1970 to more than 40 per cent in 1982, but a balance-of-payments crisis never developed. This anecdotal evidence in support of the view that FDI lessens the possibility of later balance of payments problems is supported by Frankel and Rose (1996). They find in a panel of annual data for over 100 developing countries from 1971 through

1991 that a high ratio of FDI to debt is associated with a low likelihood of a currency crash. This raises the question whether FDI is special with respect to its macroeconomic implications. There is a strong presumption that indeed it is:

— *First*, foreign direct investment is largely determined by non-cyclical considerations. Being governed rather by long-term profitability expectations, it is less subject to sudden shifts in investor sentiment. While on an annual basis, large fluctuations of foreign-direct-investment **flows** are regularly observed, foreign-direct-investment **stocks** are largely illiquid and irreversible. Foreign direct investment is less dependent on financial market sentiment. This observation is reinforced by Mexico's experience in 1995, when its capital account showed only a slightly reduced net inflow of foreign direct investment after the crisis in 1994.

— *Second*, the Harberger externality does not apply to foreign direct investment. Even if the supply schedule of FDI is upward-sloping, FDI is likely to produce positive external spillovers, comparable to agglomeration benefits. This conjecture implies that higher inflows of FDI carry positive externalities, by improving the host country's production function (Borensztein, de Gregorio and Lee, 1995). Moreover, returns to FDI are state-contingent and sovereign risk seems to apply less than to other forms of foreign capital inflows. As a result, foreign investors do not observe an upper limit of engagement, in contrast to debt flows.

— *Third*, to the extent that FDI is not induced by privatisation (which represents, other things being equal, just a change in ownership), FDI inflows exert less upward pressure on the real exchange rate, minimising the risk of "Dutch disease". Since FDI is likely to crowd in domestic investment, to the extent that it is "green field" investment, it will stimulate a corresponding movement in the demand for foreign exchange by stimulating imports. Moreover, by stimulating investment rather than consumption, FDI creates an *ex ante* home goods excess supply in the recipient country. Equilibrium in the home goods market requires a depreciation of the real exchange rate to stimulate the demand for home goods (Artus, 1996).

— *Finally*, in the absence of financial sector and foreign exchange distortions, foreign direct investment can improve the current account balance. Fry (1996) has shown that, despite the fact that FDI increases domestic investment, the positive direct and indirect (through accelerated growth) effects of FDI on national saving actually leads to an improvement in the current account in the long run. While the FDI impulse leads to a worsening of the current account in the first three years (for an average of six Asian countries), it induces growth and saving effects as to improve the current account thereafter.

Capital is fungible, however, and the distinction between FDI and other capital-account items (notably portfolio equity flows) can be blurred. Net foreign direct investment will change the level of a country's net external liabilities just as any other capital flow.

Suggesting measures against which to judge whether actual current account deficits are sustainable in the long run, we arrive at a first conclusion: Actual deficit numbers alone cannot provide information about long-term sustainability. Any judgement needs to consider debt-GDP levels (current versus that tolerated by investors), official foreign exchange reserves (current versus targeted), the potential GDP growth rate, import growth, the Balassa-Samuelson effect, and the structure of capital inflows. Sustainability considerations do not make sense for FDI flows, as long as there is no widely held notion about the sustainability of net foreign liabilities for the stock of FDI invested in a country.

The size of the current account deficit does not give rise to normative judgements; a deficit worth 3 per cent of GDP may be "excessive" in one country, while a deficit worth 12 per cent of GDP may be justified for another country. What distinguishes such deficits is not so much whether they are driven by public-sector or private-sector decisions, since there is some evidence for a Ricardian offset and since private debt is a contingent public-sector liability. Rather what matters for governments is the source of the current account deficit.

III. THE INTERTEMPORAL APPROACH: DEFINING EXCESSIVE" DEFICITS

In principle, the intertemporal approach to the current account is able to provide a benchmark for defining "excessive" current account deficits in the context of models that yield predictions about the equilibrium path of external imbalances (Milesi-Ferretti and Razin, 1996). International capital mobility opens the opportunity to trade off present levels of absorption against future absorption. If domestic saving falls short of desired investment, foreigners have to finance the resulting current account deficit, leading to a rise in the country's net foreign liabilities. The intertemporal approach views the current account as the outcome of forward-looking dynamic saving and investment decisions (Obstfeld and Rogoff, 1994), which are driven by expectations of future productivity growth, interest rates and other factors.

Table 4. **Current Account Effects Predicted by the Intertemporal Approach**

Shock	Temporary			Persistent		
	Saving	Investment	Current account	Saving	Investment	Current account
1. Drop in the world interest rate below permanent average rate						
– Net debtor countries	+	0	+	not applicable		
– Net creditor countries	-	0	-			
2. Rise in productivity						
– Country-specific	+	0	+	-	+	-
– Global	+	0	+	+	+	0

Source: See discussions in Glick and Rogoff (1995), Obstfeld and Rogoff (1994) and Razin (1995).

Without writing down the whole maximisation problem for the representative consumer (among the many assumptions necessary to produce behavioural predictions are intertemporal separability of preferences and perfect foresight; see Obstfeld and Rogoff, 1994; Glick and Rogoff, 1995; and Razin, 1995), Table 4 collects some important predictions of the intertemporal approach about how the "equilibrium" (first-period) current account should respond to a drop in the world interest rate and a reform-induced productivity rise (the two capital-flow determinants emphasized in the literature). The results in the table imply:

— Capital-importing countries, as net foreign debtors, should raise the saving rate in response to cyclical portfolio flows, which are interest-driven. The current account deficit should decline (or move into surplus) as people smooth consumption in the face of temporarily low interest

payments. For net creditor countries, temporarily low interest rates should result in opposite current account effects. If a net debtor country widens its current account deficit in response to temporary interest rate reductions, the response may well destabilize rather than smooth the intertemporal consumption path.

— Likewise, the intertemporal approach does not necessarily predict an increasing current account deficit when capital flows are attracted by country-specific productivity surges. The "equilibrium" response of the current account depends crucially on the expectation of whether the productivity surge is temporary or permanent. In both cases, the productivity surge raises output immediately, but only a persistent rise in productivity raises permanent income. The reason is that only a permanent productivity surge induces investment and a higher future capital stock. The rise in permanent income also causes consumption to rise more than output, resulting in a strong current account deficit as a result of lower saving and higher investment. In contrast, a transitory increase in productivity should result in an opposite current account effect (a lower deficit), since there is no effect on investment and agents save part of any transitory increase of income (in the permanent-income model of consumption).

— Productivity surges should not necessarily be interpreted as country-specific in origin, but can be part of a broader global shock. A persistent productivity-enhancing shock common to all countries raises the world rate of interest. This should dampen consumption in net debtor countries sufficiently to offset the consumption effects arising from higher permanent income brought about by higher investment. Since all countries cannot improve their current accounts, world interest rates rise until global savings and investment are balanced. A global transitory productivity shock produces excess world saving and thereby exerts downward pressure on interest rates. A temporary drop in world interest rates results in lower current-account deficits for net debtor countries, as analysed above.

How well then does the intertemporal approach explain actual current account balances in our eight sample countries? It is still too early, in view of the limited number of reliable observations of productivity developments in the sample countries for the recent capital-inflow period, to estimate investment and current-account equations for the individual sample countries. We therefore present for the period 1988–93 panel estimates for the current-account equation

$$CAD_t = b_0 + b_1 I_{t-1} + b_2 \Delta\theta^c_t + b_3 \theta^w_t + b_4 CA_{t-1} + b_5 TOT_t + b_6 r^w_t \qquad (5)$$

where *CAD* is the current account deficit as a fraction of GDP, *I* is gross domestic investment as a fraction of GDP, θ^c and θ^w are domestic and global productivity (the Solow residual derived from Cobb-Douglas production functions), *TOT* is the terms of trade index, and r^w is the real US treasury bill interest rate (see Table 5, first panel).

The second panel estimate in Table 5 introduces a government budget reaction function similar to Summers (1988), where

$$BD_t = b_0 + b_1 (S^{pr} - I)_t \qquad (6)$$

the government budget deficit BD_t responds to changes in the balance between private savings S^{pr} and investment (all variables as a fraction of GDP). Equation (6) can be taken as evidence of current-account targeting, so that equation (5) has to be estimated in a simultaneous equation system.

Table 5. **Panel Estimates on Current-Account Equations, 1988-93**
t-values in brackets

1. $CA_t = b_1 I_{t-1} + b_2 \Delta\theta^c_t + b_3 \theta^w_t + b_4 CA_{t-1} + b_5 TOT_t + b_6 r^w_t$

-0.2	-0.02	-0.06	+0.6	-0.001	+0.01
(-0.87)	(-0.14)	(-1.7)	(2.52)	(-1.02)	(0.31)

Estimation: Fixed effect model using OLS framework;
number of observations: 48; $R^2 = 0.59$; DW = 2.53

2. $BD_t = b_1 (S^{pr} - I)_t$

-0.4 $R^2 = 0.84$; DW = 1.48; number of obs. = 48
(-10.2)

$CA_t = b_1 I_{t-1} + b_2 \Delta\theta^c_t + b_3 \theta^w_t + b_4 CA_{t-1} + b_5 TOT_t + b_6 r^w_t$

-0.1	+0.1	-0.1	+0.5	-0.001	+0.003
(-0.45)	(1.16)	(-2.54)	(3.42)	(-0.48)	(0.89)

$R^2 = 0.58$; DW = 2.62; number of obs. = 48

Estimation: Simultaneous equation system with GMM estimation (= 3 SLS).

Sources: Instrumental variable method was used; residuals were heteroskedastic-consistent.
Current account, gross domestic investment, terms of trade index: all World Bank data base.
US treasury bill interest rate minus change in CPI index/private savings: all IMF.
Domestic productivity, world productivity (GDP-weighted average for G7 countries) are Solow residuals from Cobb-Douglas production functions: all World Bank data base; national accounts.

As seen in Table 5, there is a strong negative correlation between the size of the private current account and the size of the budget deficit. The results for the current-account equation are largely the same, however, in the direct and the simultaneous panel estimate. All parameters show the expected sign as predicted in Table 4, but only global productivity enters significantly among the determinants stressed by the intertemporal approach.

The results in Table 5 lead to the tentative conclusion that econometric tests derived from the intertemporal approach to the current account cannot explain actual current account deficits in major capital-flow recipient countries. This means that either the observed current account deficits have been excessive, or that the benchmark (derived from the intertemporal approach) is ill-defined or insufficiently represented in our estimates. While global productivity (as defined in Table 5) has stagnated during the observation period 1988–93, country-specific productivity surges were observed in Argentina and Peru. These countries could be predicted by the intertemporal approach to run current account deficits, due to temporarily higher investment levels (and possibly lower saving rates), assuming that the productivity surges were permanent.

Table 6. **Investment, Growth and Productivity**[a]

	First year of inflow	Investment Ratio		Real GDP Growth Rate		Efficiency[b]	
		before inflow	thereafter	before inflow	thereafter	before inflow	thereafter
Argentina	1991	16.9	18.3	-1.4	7.5	-9.0	41.0
Chile	1990	20.9	23.3	8.0	7.0	37.8	30.6
Mexico	1989	18.8	19.7	1.7	3.0	8.8	15.6
Peru	1992	17.8	20.4	-2.7	4.8	-14.8	28.4
Indonesia	1990	32.7	34.1	6.0	7.0	18.3	20.6
Malaysia	1989	23.6	35.1	7.2	8.7	30.2	23.5
Philippines	1992	19.6	23.2	3.8	4.2	20.1	16.2
Thailand	1988	27.6	39.8	9.6	9.0	34.7	23.6

a. Data are annual averages for the first period from 1987 to the year that preceded the first year of inflow and for the second period from the year after the inflow started to 1995 (investment, efficiency) or to 1996 (growth). For Argentina and Mexico, the second period stops in 1994.

b. Efficiency is defined as the inverse of the investment rate to the real GDP growth rate.

Source: JP Morgan, *World Financial Markets*; IMF, *International Financial Markets*; own calculations.

Tables 6 and 7 explore the issue in more country detail, by comparing the years 1987 up to the year when foreign capital started to flow in with the capital-inflow period. Table 6 shows that the capital inflow period coincided with a strong surge in efficiency (the inverse of the incremental capital-output ratio) really only in Argentina and Peru. Efficiency also rose slightly during the inflow period in Mexico, Indonesia, and more recently, in the Philippines. By contrast, strongly higher investment rates in Malaysia and Thailand resulted in declining levels of capital productivity; in milder form, the same phenomenon was visible in Chile, reflecting the law of diminishing marginal returns of investment (and probably indicating unproductive "excess" investment).

Table 7. **Change in Foreign Reserves and Current Account Balances**
(in per cent of GDP)

	Change[a]				Memo:		
	Foreign reserves	Current account	Saving	Private consumption	First year of inflow	Year when current account deficit peaked	Peak current account deficit
Argentina	1.4	-1.9	-0.5	4.5	1991	1994	3.5
Chile	5.7	1.2	3.7	1.2	1990	1996	3.3
Mexico	-0.7	-6.9	-6.0	3.1	1989	1994	7.8
Peru	5.9	0.1	2.8	0.7	1992	1995	7.2
Indonesia	-0.2	-0.5	0.9	-0.3	1990	1996	3.7
Malaysia	8.8	-11.8	-0.7	3.4	1989	1995	8.1
Philippines	3.4	-1.6	1.9	3.8	1992	1994	4.5
Thailand	8.2	-5.8	6.4	-4.9	1988	1995	8.2

a. Changes are calculated as the annual average changes between the first period from 1987 to the year that preceded the first year of inflow and the second period from the year after the inflow started to 1995 (for Argentina and Mexico, 1994). Saving rates were derived as residual.

Source: IMF, *International Financial Statistics*; JP Morgan, *World Financial Markets*; World Bank, *Global Development Finance*; own calculations.

The sharpest deterioration in current account balances were seen in Malaysia, Mexico and Thailand, and not in those countries (Argentina, Peru) where country-specific productivity surges were particularly important (Table 7). In Argentina, Mexico, Malaysia and the Philippines private consumption (as a share of GDP) rose by more than 3 per cent of GDP on average during the inflow period, often reflecting a strong rise in public savings. As noted above, a rise in private consumption can be validated by higher investment rates (indicating expectations of higher permanent income levels) or by current income levels being below potential. In Argentina and Mexico, however, the size of the switch in private consumption relative to the switch in investment looks excessive.

The evidence suggests that the intertemporal approach fails to predict the macroeconomic responses of most capital-flow recipient countries. In the case of Chile, the existence of effective capital controls may provide a part of the explanation for the failure of the intertemporal approach (which assumes full capital mobility). In the case of the other sample countries (for which full openness can be assumed), the change in macroeconomic aggregates must be explained by determinants not captured by the consumption-smoothing approach.

The predictive power of the intertemporal approach to the current account may remain very limited for developing countries, in spite of their higher financial openness. Heymann (1994) raises some important questions, notably in the context of recurrent episodes of private-sector over-indebtedness: How plausible is the assumption of rational expectations during a period when there is a "regime change" in the economy? How correct can forecasts be about the expected value of future prices and quantities, and how realistic and binding is the intertemporal budget constraint to induce agents to plan according to these forecasts? Such questions raise deep doubts about the claim that "The intertemporal approach to the current account offers a viable framework for assessing macroeconomic policy" (Obstfeld and Rogoff, 1994).

IV. WHEN TO RESIST LARGE CURRENT ACCOUNT DEFICITS?

With little guidance from theory as to when precisely a current account deficit is “excessive”, policymakers will have to rely on basic principles and on hard empirical evidence from balance-of-payments crises. The basic principle is that current account deficits should be seen to finance productive investment, preferably into the exportable sector in order to prepare for the future amortisation of foreign liabilities. The empirical link between large current account deficits, consumption booms, surges in bank lending, and subsequent banking crises is by now well documented (Gavin and Hausmann, 1996). Therefore, balance-of-payments deficits owing to private spending booms suggest great risks to the public sector — risks of tax revenue losses and costly bank crisis resolutions, as documented by Table 8.

While it seems obvious that such costs imposed on the public sector suggest that governments engage in some stabilizing measures to moderate private spending booms (by restrictive fiscal policies or credit restrictions for private borrowers), it is less straightforwardly obvious that resistance to large current account deficits should be included in such measures. Distortions should be corrected at the source; the twin payment and banking crises seem to originate in either domestic financial deregulation, implicit deposit insurance, or protracted exchange rate-based stabilization plans:

Table 8. **Episodes of Systemic Banking Crises with Heavy Capital Inflows**

Country	Scope of crisis	Cost of rescuing banks (% of GDP)
Argentina 1980-82	16% of assets of commercial banks; 35% of total assets of finance companies	55.3
Chile 1981-83	45% of total assets	41.2
Israel 1977-83	Entire banking sector	30.0
Finland 1991-93	Savings banks affected	8.2
Mexico 1995-?	Commercial banks past due to gross loan ratio reaches 9.3% in February 1995	12-15

Sources: Bank for International Settlements, *63rd Annual Report* , 1993; G. Caprio and D. Klingebiel (1996).

— Since the 1980s, the link between banking crises and balance-of-payments crises has strengthened. Kaminsky and Reinhart (1996) trace 71 balance-of-payments crises and 25 banking crises during the period 1970-95. While they report only 3 banking crises on 25 balance-of-payments crises during 1970-79, they find 22 banking crises on 46 payments crises over 1980-95. They find that financial liberalisation (which occurred mostly since the 1980s) plays a significant role in explaining the probability of a banking crisis preceded by a private lending boom. A banking crisis, in turn, helps to predict a currency crisis. There is also clear evidence for the OECD countries that rapid and extensive financial deregulation has tended to lower household savings by lessening liquidity constraints (Blundell-Wignall and Browne, 1991). While most of that drop in private savings could be interpreted as a temporary stock adjustment to a higher consumption path, there is evidence that household saving rates have remained low (Andersen and White, 1996).

— Information asymmetries, reinforced by the lack of institutions to monitor and supervise credit risk, produce moral hazard and adverse selection. Firms with a high risk-return profile have an incentive to borrow heavily, as their exposure is limited by bankruptcy laws. Consumers incur excessive debt when they feel that their debt is not comprehensively monitored. In principle, banks and other intermediaries may attempt to reduce credit risk through credit rationing. This limits the extent to which liberalisation can ease liquidity constraints, but when the government insures deposits against adverse outcomes, it alters how the banking system views the risks associated with making loans — it introduces moral hazard. This results in higher bank lending, which in turn can underpin excessively optimistic expectations about the success of reform (McKinnon and Pill, 1995)[3].

— Exchange rate-based stabilization plans have often been accompanied by a boom in bank lending, which in turn fuels a boom in consumption spending. Unlike money-based stabilization, disinflation produces a rise in real-money balances, as a result of central bank intervention to peg the currency and of money demand rising as domestic wealth holders convert their assets back into domestic currency. As long as foreign exchange intervention is unsterilised the capital inflows are fully intermediated through the banking system. This allows a boom in credit to agents who have been rationed previously as a result of inflation and financial repression (Reisen, 1993). Subsequently, overvaluation due to inflation inertia causes a recession and a deterioration of bank assets as a result of non-performing loans and lower asset prices.

Even though the source of these private spending booms is domestic, one must ask whether foreign savings worsen the boom (Corden, 1994). In the absence of foreign capital inflows, the spending boom would manifest itself not in a current account deficit, but in higher interest rates. The critical question then is, what kind of investment would be crowded out by the rise in domestic interest rates? With ineffective bank supervision (as a result of too rapid financial deregulation, for example), the average productivity of borrowing may decline as risk-averse investors withdraw from the pool of potential borrowers. The failure to finance productive investment would be the cost of the decision not to accept capital inflows, with the excess of the risk-adjusted domestic interest rate over the world interest rate as a measure of the distortion created by that decision. The result for the decision whether to accept or resist inflows would be ambiguous.

In the McKinnon-Pill model the closed-economy financial market failure is reflected in higher financial yields, but its effect on quantities — borrowing and consumption — is ambiguous, depending on offsetting income and substitution effects. Excessively optimistic expectations about future permanent income levels, resulting in both over-consumption and over-investment, are financed by excessive borrowing from the rest of the world. This distortion is reinforced by foreign savings. The McKinnon-Pill solution to the distortion is similar to a Pigou-Harberger tax (specifically, a reserve requirement on foreign deposits) that achieves the optimal balance of consumption-smoothing and excessive borrowing.

The first-best solution to the boom distortion triggered by exchange rate-based stabilization is to announce, at the start of the stabilization plan, that the peg will be temporary, and will be followed by more nominal exchange rate flexibility. While this is easier said than done, it does not do away with the immediate remonetisation and real exchange rate appreciation that characterise the first phase of disinflation. Temporary support from selective controls on short-term capital controls may well be needed (Hausmann and Reisen, 1996). If an unsustainable currency appreciation, excessive risk-taking in the banking system and a sharp drop in private savings coincide, there is a case for resisting foreign capital inflows. The appropriate policy response then must balance the benefits of consumption-smoothing and financing viable investment and the risks of excessive borrowing.

A case can be made for an open economy to accept all foreign direct investment, unless it creates new distortions as a result of new trade restrictions and as long as it can be absorbed by the existing stock of human capital. Foreign direct investment is less constrained by considerations of sovereign risk and portfolio limits from the perspective of the investor than other types of capital flows; and by crowding in domestic investment and having a minor initial effect on consumption (possibly unless privatisation-induced), foreign direct investment is unlikely to generate a real appreciation problem.

NOTES

1. Interest payments on outstanding debt and the resource transfer (the non-interest current account) are ignored to keep the focus on the sustainable current account deficit. The loss of information is minor to the extent that average interest costs do not vary much across the sample countries.

2. Measures of equilibrium real exchange rates are especially difficult to calculate for the transition countries, since their production structures and productivity levels are undergoing substantial changes; see Halpern and Wyplosz (1996).

3. In other words, bank lending supports excess credibility of liberalisation and stabilization programmes. For liberalisation programs perceived as temporary (an hypothesis which does not seem apt to describe existing policy regimes in most capital-importing countries), it was a **lack** of credibility which was used to explain temporary spending booms as residents exploited a “window of opportunity” (Calvo, 1987).

APPENDIX: ESTIMATION OF PARAMETERS γ, ε AND η

Since GDP can be seen as the result of a transformation of key factors of production, a theoretically appropriate way to estimate potential GDP γ is to estimate the available volume of factor inputs in the business sector into a numerically specified production function. However, even small estimation errors for the individual parameters of the production function (e.g. output elasticities, rate of technical progress, or degree of slack) can lead to rather implausible estimates for potential output. Instead, a simpler approach, the peak-to-peak method is employed, which uses actual GDP data only for the derivation of potential GDP estimates.

This method is implemented by first identifying the peak of actual GDP in each cycle and connecting these data points by interpolation. The procedure is applied for two different observation periods, for 1960-95 (for Malaysia 1970-95) and for the period since "openness" reform as classified by Sachs and Warner (1995) until 1995. For Argentina and Peru, Sachs and Warner classify the year of opening as 1991, for the Philippines 1988, for Mexico 1986 and for Chile 1976; for the other countries the observation periods coincide. Annual GDP data are used, except for Peru and the Philippines where good quarterly data are available and where the reform period is relatively short. The resulting GDP series can be seen as an approximation of the highest attainable level of output at any given point in time.

In a second step, the average ratio of actual GDP to the highest attainable GDP for each cycle is calculated — a measure of the "normal" degree of slack in the eight economies. This ratio is then used to scale the series of highest attainable GDP to derive estimates for potential GDP. The **annual** growth rate of potential GDP is then obtained by regressing the potential GDP series on a time trend. The results give largely plausible estimates, except possibly for Mexico and the Philippines, where potential growth for the period since openness reform is lower than for full period. The results reported in Table 2 use the growth rates of potential GDP obtained for the period since reform, except for Mexico and the Philippines where estimated and forecast GDP growth rates, based on JP Morgan, have been taken.

Estimates of the real exchange rate appreciation effect of GDP growth **relative** to the United States are obtained from Larraín's (1996) instrumental variables analysis of the determinants of real exchange rates (viz. the dollar) for a sample of 28 Asian and Latin American countries over the period 1960-90. These estimates control for the effects of other determinants, namely government spending, degree of openness, and the terms of trade. The parameter ε is calculated by scaling these figures by the annual growth rate of potential GDP. Note that since the relationship between real exchange

rates and relative GDP levels is non-linear, a given estimate of the growth rate of potential GDP implies greater real equilibrium exchange rate appreciation at higher relative income levels; witness the difference between Malaysia and Indonesia, for example.

Finally, estimates of the future annual real import growth rate, η, are simply extrapolated out of the reform-period sample for each country. Argentina's annual import growth may seem implausibly high, but it must be recognised that Argentina is still a very closed economy in terms of the import ratio *m* and that the potential for natural trade through, for example, the Mercosur free-trade agreement is far from exhausted.

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