IMF Working Paper

WP/98/71

INTERNATIONAL MONETARY FUND

Monetary and Exchange Affairs Department

Current Accounts: What Is Their Relevance for Economic Policymaking?[1]

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May 1998

Abstract

This paper surveys the main theoretical approaches for analyzing movements in the current account of the balance of payments, from the Mundell-Fleming paradigm to modern intertemporal approaches. It discusses the main implications of these analyses for policymaking, highlighting that modern economic theory views current account imbalances not simply as a reflection of goods market developments, but also as an outcome of intertemporal consumption and investment choices and associated capital market behavior. To reflect on the policy strategies applied under diverse circumstances, the paper analyzes the recent experiences of Italy, Israel, and Pakistan.

JEL Classification Numbers: F32, F40, F41

Keywords: Current account, current account sustainability, Italy, Israel, Pakistan.

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[1]This paper was prepared for the East-West Conference, sponsored by the Austrian National Bank, Vienna, on November 16–18, 1997, and is to be published in the Conference proceedings. We are grateful to Peter Isard, R. Barry Johnston, Gian Maria Milesi-Ferretti, Ramana Ramaswamy, and the participants in the East-West Conference for their many useful comments and suggestions. We are also grateful to Natalie Baumer for editorial assistance. We are responsible for any remaining errors.

Contents **Page**

SUMMARY

Movements in the current account are deeply intertwined with, and convey information about, the actions and expectations of all market participants in an open economy. For this reason, policymakers focus on the current account as an important macroeconomic variable, to endeavor to explain its movements, assess its sustainable level, and seek to induce changes in the current account balance through policy actions.

This paper provides an overview of the evolution of economic thinking on the determinants of the current account, from the essentially static Mundell-Fleming paradigm developed in the 1960s to the latest intertemporal models. It then explains their implications for the behavior of the current account. Subsequently, the paper considers the relevance of these abstract theories to the real world and the practical guidance they provide to the authorities in shaping their analyses and in setting their policy stance.

The discussion then turns to three case studies, each of which elucidates aspects of current account determination and considers the different policy strategies applied. The case study of Italy during 1992–95 shows the current account impact of deviations of exchange rates from fundamentals because of fiscal and other fundamental uncertainties. That of Israel in 1990–96 reflects the impact of a major demographic shock, in this case a massive immigration flow, on the current account. Finally, the study of Pakistan in 1993–96 explores the implications of a binding external financing constraint faced by a developing country with only limited access to international financial markets.

I. INTRODUCTION

The title of this conference—Current Account Imbalances: Do They Matter?—seems odd at first glance. After all, the external current account balance is not a policy variable, like the money stock or the fiscal position. Nor is it an ultimate policy target like the inflation rate or the level of output or employment. The current account is what policymakers often refer to as an 'intermediate target'; that is, a variable which is both a broad reflection of the stance of macroeconomic policies and a source of information about the behavior of economic agents.

The current account of the balance of payments plays several roles in policymakers' analyses of economic developments. Since a country's balance on current account is the difference between exports and imports, it reflects the totality of domestic residents' transactions with foreigners in the markets for current goods and services. At the same time, since the current account balance determines the evolution over time of a country's stock of net claims on (or liabilities to) the rest of the world, it reflects the intertemporal decisions of domestic and foreign residents—their behavior with respect to saving, investment, the fiscal position, and demographic factors. Movements in the current account are, therefore, deeply intertwined with—and convey information about—the actions and expectations of all market participants in an open economy. For this reason, it is natural for policymakers to focus on the current account as an important macroeconomic variable, to endeavor to explain its movements, to assess its sustainable level, and to seek to induce changes in the current account balance through policy actions.

But how should policymakers interpret a given movement in a country's current account position and what should they do about it? At the practical level, these are difficult questions to answer. Over the six decades since the publication of Keynes's *General Theory*, macroeconomists have steadily improved their ability to project the levels of both gross domestic product and aggregate domestic demand. But even relatively small prediction errors for output and absorption can result in large errors for the forecast level of the current account balance, which is the difference between these two aggregates. Since the early 1970s, policymakers have endeavored to incorporate new theoretical advances in open economy macroeconomics into their analyses to attain a deeper understanding of the determinants of current account movements and their relation to other key economic variables, such as fiscal and monetary policies, levels of economic activity, real exchange rates and interest rates, and shifts in intertemporal behavior. Meanwhile, epochal structural transformations—in particular the shift from fixed par values to floating exchange rates in the early 1970s, the structural transformation of the economies of Eastern Europe, the Baltics, Russia, and other countries of the former Soviet Union in the early 1990s, and the recent trends toward globalization of financial markets—have been reshaping the international economic environment. These changes have made the signals conveyed by current account imbalances more difficult to interpret and have altered both the objectives and scope of policy actions.

Section II of this paper surveys the main theoretical approaches that have been developed to analyze movements in the current account of the balance of payments. It

endeavors to provide an overview of the evolution of economic thinking on this question from the essentially static Mundell-Fleming (M-F) paradigm developed in the 1960s to the latest intertemporal models, and to explain their implications for the behavior of the current account. Section III then considers the relevance of these abstract theories to the real world and the practical guidance they provide to governments in shaping their analyses and projections of current account developments, and in setting their policy stance. Section IV illustrates the discussion of the preceding sections in concrete terms by examining three case studies, each of which elucidates aspects of current account determination and considers the different policy strategies applied. The case study of Italy shows the current account impact of deviations of exchange rates from fundamentals because of fiscal and other uncertainties; that of Israel reflects the impact of a major demographic shock, in this case a jump in immigration, on the current account; finally, the study of Pakistan explores the implications of a binding external financing constraint faced by a developing country that has only limited access to international financial markets. Section V concludes with some reflections on the relations and disparities between theory and practice in this specialized corner of the field of international economics.

II. Exchange Rates and the Current Account: An Analytical Overview

Historically, international economics has endeavored to establish a dynamic relationship between changes in the current account position on the one hand and movements in the real exchange rate, levels of economic activity at home and abroad, and the stance of monetary, fiscal, and other policies on the other. In recent years, this focus has been broadened to include the important concept of 'sustainability' of the macroeconomic framework over time, mainly through increased attention to the intertemporal aspects of current account imbalances and the way they induce changes in international stocks of assets and liabilities. This section reviews the main developments in modern international economics that help to explain movements in the current account, briefly discusses their implications, and sets the stage for the discussion of policy issues in Section III.

A. The Canonical Mundell-Fleming Analysis

The Mundell-Fleming (M-F) model,[2] in its various versions, has enjoyed wide popularity since the early 1960s and still plays a prominent role in shaping policy decisions. The M-F model reflects the *zeitgeist* of the 1960s and early 1970s and the confidence that macroeconomic policies could simultaneously achieve both internal balance (high employment) and external balance (balance of payments equilibrium). Basically, M-F is an extension of classic IS-LM analysis to an open economy, assuming international capital mobility, imperfect substitutability between domestic and foreign goods, a fixed aggregate price level, and variable real output (or, in the "full employment" version, fixed real output and a variable price level).

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[2]See Fleming (1962) and Mundell (1963). See also Frenkel and Mussa (1985).

The M-F model explicitly treats the markets for goods, money balances, and foreign exchange. However, markets for domestic and foreign bonds lurk in the background as substitutes for domestic money, and the labor market enters through the assumption that output responds to changes in demand. Since the model concentrates on 'the short run,' it essentially describes simple adjustment mechanisms in a model of stationary flow equilibrium and static exchange rate expectations. Over the years, this model has proven very useful in drawing conclusions about the impact of policy actions on output, interest rates, and the balance-of-payments adjustment process under alternative exchange rate regimes. In addition, since it distinguishes between current and capital transactions in the balance of payments, it also has something to say about the effects of policy shifts on a country's current account balance.

Analytically, the M-F model determines two variables—the real interest rate, r, and real output Y—via the now-famous IS, LM, and BOP loci, the combinations of r and Y at which the markets for goods, money, and foreign exchange are, respectively, in equilibrium. Assuming that both the LM and BOP curves are positively sloped in the r-Y space and that the IS curve is negatively sloped, the equilibrium levels of r and Y are determined by the intersection of the three curves. Given some degree of capital mobility, the economy can sustain an equilibrium at a combination of r and Y where the current account is either in deficit or surplus, depending on the values of certain parameters, the levels of economic activity, the real exchange rate, and the differential between foreign and domestic interest rates. In fact in the M-F model the BOP curve reflects not only current account equilibrium but overall equilibrium in the foreign exchange market, including supplies and demands resulting from capital transactions. At a given real exchange rate, an increase in domestic income will cause the current account to move into deficit, but equilibrium in the overall balance of payments—the sum of the current and capital accounts—can be restored by a rise in the domestic interest rate relative to that prevailing in the rest of the world that induces a net capital inflow just equal to the current account deficit. Assuming that domestic and foreign bonds are close substitutes, so that capital is highly mobile internationally, the LM curve is steeper than the BOP curve: if income rises, it takes a larger increase in the interest rate to eliminate the excess demand for money than it does to eliminate the excess demand for foreign exchange.

These relative slopes are important for assessing the impact of various policy actions on the current account balance. For example, under a fixed exchange rate and high capital mobility, the M-F model concludes that, starting from current account balance, an expansionary fiscal policy will unambiguously push the current account into a deficit, financed by the higher capital inflows induced by the interest rate increase that results from the impact of fiscal expansion on income and money demand. Furthermore, the higher the degree of capital mobility, the larger the deterioration in the current account balance that results from a given fiscal expansion. Thus with high capital mobility and a fixed exchange rate, changes in fiscal policy exert a substantial direct impact on the current account balance. Conversely, for well-known reasons, the M-F model predicts that, with a fixed exchange rate, changes in domestic credit will have little impact on the current account balance.

The M-F model concludes that under a floating exchange rate an expansionary monetary policy will also affect the current account balance, but the direction of the effect cannot be determined *a priori*. The monetary expansion induces a fall in the domestic interest rate, a rise in income, and a depreciation of the home country's real exchange rate. This can cause either an improvement or a deterioration in the current account balance, depending on the relative impacts of the exchange rate depreciation and the increase in income on exports and imports. On the other hand, when the exchange rate is floating, the effect of a fiscal expansion on interest rates tends to cause the domestic currency to appreciate, thus unambiguously pushing the current account balance into deficit.

A major weakness, however, is that the M-F model is essentially static. Since it concentrates on the short run, it neglects the impact of net investment on the stock of productive capital and of current account imbalances on net international indebtedness. Thus it can only describe the short-term effects of economic policies on the current account balance and not the longer-run path that results from the interaction of stocks and flows. Take, for example, an expansionary fiscal policy. While this policy stance initially leads to an appreciation of the home country's real exchange rate, a current account deficit and a capital inflow, it also results in an increase in external indebtedness. But as the current account deficit persists and international liabilities increase, net external debt service payments will also rise. In order for a given current account balance to be maintained as debt service rises, the merchandise trade account must improve steadily. This means that, after its initial appreciation, the home country's real exchange rate will have to decline. Thus the initial exchange rate appreciation resulting from an expansionary fiscal policy will gradually be reversed over time, as the country's international debt and debt-servicing obligations build up. Longer-term dynamic effects such as these, which are important in gauging the sustainability of a given current account position, are omitted from the M-F model by assumption. Thus, despite its wide acceptance, the M-F paradigm is, in many respects, too crude an approximation of reality to explain the longer-term evolution of the current account and associated changes in stocks of international assets and liabilities.

B. The Savings-Investment Gap and the Macroeconomic Balance Approach

When persistent real exchange rate misalignments and associated current account deficits and surpluses became a feature of the post–Bretton Woods system of floating exchange rates among the major currencies, economists began to look for more sophisticated explanations of current account developments. This resulted in greater emphasis on the identity between the savings-investment gap and the current account balance. In symbols:

$$CA_t \equiv Sp_t + Sg_t - Ig_t - Ip_t \qquad \textbf{(1)}$$

where CA is the current account balance (CA > 0 indicates a surplus), Sp represents private savings, Sg government savings (i.e., the current fiscal position), Ip private investment, Ig public investment and the subscript, t, indicates a generic, discrete time period.

This change in approach immediately suggested to economists that, under certain conditions, current account imbalances that—when viewed from the M-F perspective—appear to be grounds for urgent policy action, might actually be sustainable over the longer term. In particular, in countries where the opportunities for investment in productive capital have been sizable relative to saving propensities, current account deficits might be sustainable for longer periods of time. After all, experience has shown that for decades countries such as Canada and Australia have consistently run current account deficits of 1 or 2 percent of GDP, or occasionally more, with no marked signs of macroeconomic instability.

This longer-term view of current account dynamics had been sketched by Laursen and Metzler (1950) and by Mundell (1963), but it acquired a new prominence in the mid-1980s when it became evident that the shifts in the fiscal policies of major countries, (a fiscal expansion in the United States, and consolidation in Germany and Japan) had induced large movements in the medium-term patterns of exchange rates and current account balances among the largest industrial countries. Thus economists moved to develop a better explanation of these phenomena.

The model of Knight and Masson (1986, 1987) is based on the recognition that a country undergoing an expansionary fiscal shock requires an inflow of foreign funds if it is to maintain the same level of domestic investment. In their model, which assumes full employment, the move to a current account deficit is induced by an initial appreciation of the home country's real effective exchange rate and an associated loss of its international competitiveness. Subsequently, as its international indebtedness and debt service increase, the country's real exchange rate will tend to depreciate once more. This analysis, therefore, suggests that exogenous shifts in the fiscal stance or in the private saving-investment balance will be associated with swings in a country's real exchange rate and its current account balance.

The Knight-Masson model abstracts from the complex links between fiscal policy and the level of capacity utilization, as well as from the effect of international interest rate differentials on exchange rates and capital flows, in order to focus on the relationships between private and public savings, current accounts, and real interest rates and exchange rates. In particular, they address the problem of the extent to which changes in the fiscal position[3] may be offset by opposing changes in net private saving. This problem, commonly referred to as the issue of Ricardian Equivalence, was posed by Barro (1974). He conjectured that since an expansionary fiscal policy represents a decrease in government savings, it may

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[3]The fiscal position should include not only the liabilities reported in the government budget, but all liabilities that carry (implicitly or explicitly) a government guarantee.

induce a compensating increase in private savings, since individuals may lower their current consumption to pay the higher future taxes.[4]

Knight and Masson define a private investment function $Ip_t = Ip(r_t)$ and a private savings function of the form

$$S_t = Sp(r_t)-(1-\phi)FP_t$$

where FP is the fiscal position, ϕ is the portion of public deficit (if $FP < 0$) or surplus (if $FP > 0$) that the private sector regards as a change in its net wealth, and r is the world real interest rate.

When $0 < \phi < 1$ there is less than full Ricardian equivalence. Combined with the notion that the current account balance is a function $CA_t = CA(\epsilon_t)$, where ϵ is the real price of foreign currency in terms of domestic currency (i.e., the inverse of the home country's real exchange rate), identity (1) becomes an equilibrium condition:

$$Sp(r_t)-Ip(r_t)+\phi FP_t = CA(\epsilon_t) \qquad \textbf{(2)}$$

Restrictions on the partial derivatives in (2) are: $CA_\epsilon > 0$, $I_r < 0$, $(Sp_r - Ip_r) > 0$ where the subscripts refer to the variable with respect to which the partial derivative is taken. In addition, it is assumed that $0 \leq \phi \leq 1$. In a two-country framework, the corresponding condition for the rest of the world (indicated by an asterisk) is represented as

$$Sp^*(r_t)-Ip^*(r_t)+\phi^* FP_t^* = CA^*(\epsilon_t) \qquad \textbf{(3)}$$

with analogous restrictions on the partial derivatives $I_r^* < 0$, $(Sp_r^* - Ip_r^*) > 0$, and $0 \leq \phi^* \leq 1$. Since the current account balance of the home country must always equal the negative of that for the rest of the world, equations (2) and (3) must satisfy

$$CA_t^* = -CA_t \qquad \forall\ t \qquad \textbf{(4)}$$

The total differential of the system (2)-(4) can be written in matrix form as

$$\begin{bmatrix} (Sp_r - Ip_r) & -CA_\epsilon \\ (Sp_r^* - Ip_r^*) & CA_\epsilon \end{bmatrix} \begin{bmatrix} dr \\ d\epsilon \end{bmatrix} = \begin{bmatrix} -\phi dFP \\ -\phi^* dFP^* \end{bmatrix} \qquad \textbf{(5)}$$

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[4]This is equivalent to the argument that under certain conditions individuals do not consider government bonds as net wealth.

The determinant of the coefficient matrix is strictly positive, given the conditions on the partial derivatives. In symbols

$$\Lambda = CA_{\epsilon}(Sp_r - Ip_r) + CA_{\epsilon}(Sp_r^* - Ip_r^*) \gg 0 \qquad \textbf{(6)}$$

The system (5) can be used to analyze the effect of a change in the fiscal position in either the home country or the rest of the world. The effects on the endogenous variables from (5) and (6) can be expressed as

$$\frac{dr}{dFP} = \frac{\phi CA_{\epsilon}}{\Lambda} < 0 \quad ; \quad \frac{d\epsilon}{dFP} = \frac{\phi(I_r^* - S_r^*)}{\Lambda} > 0 \quad ; \quad \frac{dCA}{dFP} = \frac{\phi CA_{\epsilon}(I_r^* - S_r^*)}{\Lambda} > 0 \qquad \textbf{(7)}$$

and

$$\frac{dr}{dFP^*} = \frac{\phi^* CA_{\epsilon}}{\Lambda} < 0 \; ; \; \frac{d\epsilon}{dFP^*} = \frac{\phi^*(I_r - S_r)}{\Lambda} < 0 \; ; \; \frac{dCA}{dFP^*} = \frac{\phi^* CA_{\epsilon}(I_r - S_r)}{\Lambda} < 0 \qquad \textbf{(8)}$$

To illustrate the implications of the model, an expansionary fiscal policy in the home country (a decline in FP) alters the domestic savings-investments balance, spurring an excess world demand for savings (only partially offset domestically, given that full Ricardian equivalence does not hold). The increased home country demand for savings must be satisfied through an inflow of foreign capital, but the only way for this capital transfer to be effected is by a move of the home country's current account into a deficit, a movement that is accomplished by a real appreciation of the domestic currency. Moreover, the decrease in public savings in the home country creates an imbalance between global savings and investment, causing a rise in the world real interest rate to restore the equilibrium.[5]

In the longer term, the buildup of external debt resulting from a home country's fiscal expansion will cause the initial real exchange rate appreciation to be reversed. As external debt service rises, the balance on net exports must improve steadily over time to maintain the same current account deficit, and this will require a gradual decline in the home country's real exchange rate. These longer-term stock-flow interactions are analyzed in detail in Knight and Masson (1987) using estimation and simulation results for an econometric model that extends

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[5]An analogous mechanism is triggered by an expansionary fiscal policy in the rest of the world on the assumption that $\phi^* > 0$: the world interest rate goes up, but the home currency depreciates, thereby inducing a home country's current account surplus. The impact of an exogenous increase in private savings has a qualitative impact similar to that of a fiscal expansion, except that effects expressed by the partial derivatives in (7) and (8) are not premultiplied by ϕ^* and ϕ.

the system (2)-(6) by taking explicit account of the effect of net investment and current account flows on the stocks of productive capital and total wealth, respectively. This approach has subsequently been incorporated in the specification of MULTIMOD, the econometric model built by the IMF Research Department (see Masson, Symansky and Meredith (1990)).

C. The Consumption Smoothing Approach to the Current Account

While Knight and Masson emphasize the effects of fiscal shocks on the size of resulting current account imbalances and their sustainability, the consumption smoothing approach to current account (see Sachs (1982) for an early version) focuses instead on the long-run saving and investment decisions of private agents. In this context, identity (1) can be given a somewhat different interpretation: economies can grow at full potential with or without showing current account deficits or surpluses. Instead, what determines the current account position of a particular country is the savings-investment *gap*, which ultimately depends on the willingness of foreigners to hold its liabilities. Countries with a higher savings ratio will tend to be net capital exporters and run sustained current account surpluses, while countries with a lower savings ratio will tend to import capital and therefore run current account deficits. Thus whereas the M-F model can only analyze short-term changes in the current account position, the fundamental concern of the consumption smoothing approach is the intertemporal sustainability of the current account.

The consumption smoothing view hinges on a sort of Modigliani-Miller Irrelevance Theorem of international macroeconomics: in a country that has free access to international capital markets, the mix of domestic and external capital is largely irrelevant in the financing of a country's fixed capital formation because both must be remunerated at the risk-adjusted equilibrium rate of return prevailing on the world market. It is crucial, in other words, to ensure that the net present value of investment projects is positive; whereas the geographical source of financing is irrelevant.

We will present two versions of the consumption smoothing model in the vein of Obstfeld and Rogoff (1996).[6] Both start from a slightly different form of identity (1), linking the current account deficit to the savings-investment gap. Consider

$$CA_t = A_t - A_{t-1} = r_t A_{t-1} + Y_t - C_t - G_t - I_t \qquad \textbf{(9)}$$

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[6] These versions of the consumption smoothing model assume that international borrowing and lending are allowed, but the range of contingent claims is limited to a riskless bond yielding the rate r, so that international markets are not complete. This assumption will be relaxed in sub-section E on capital flows, uncertainty, and sovereign risk.

where A_t is the stock of a country's net foreign assets at the end of period t; Y_t is GDP; C_t is consumption; G_t is current public expenditure; I_t is the sum of public and private investment and r_t is the world real interest rate, all during period t. All of them are random variables except—initially—r . In the first version of the consumption smoothing approach, a representative consumer maximizes an intertemporal utility function of the form

$$\sum_{t=0}^{\infty} \beta^t E[U(C_t)|\Omega_t] \tag{10}$$

where E[. |] is the conditional expectation operator, Ω is the set of information on which expectations are formed, and β is the rate of intertemporal preference. In this model net output, $Z_t = Y_t - G_t - I_t$, is equivalent to private consumption plus the external current account balance. If $U(C_t)$ is quadratic and $\beta(1+r) = 1$, by maximizing (10) subject to (9) the solution can be written as

$$CA_t = -\sum_{s=t+1}^{\infty} \left(\frac{1}{1+r}\right)^{s-t} E[\Delta Z_s|\Omega_t] \tag{11}$$

Equation (11) links the current account position to the expectation of future discounted changes in net output: when this expected value is positive the current account is in deficit, and vice versa. Stated differently, when a country's economic outlook is bright, its residents prefer to draw resources from abroad, thereby consuming today part of their future stream of income, confident that they will be able to repay the accumulated debt. The current account balance therefore reflects the intertemporal choices of rational agents and in general need not necessarily be interpreted as a warning signal that the economy is off track.

The second version can be obtained as the solution to the problem described by (9) and (10), where the utility function has constant elasticity of substitution σ, i.e.,

$$U(C_t) = \sum_{s=t}^{\infty} \beta^{s-t} \frac{C_s^{1-\sigma^{-1}} - 1}{1-\sigma^{-1}} \tag{12}$$

and the real interest rate r is a random variable. The current account balance can then be expressed as

$$CA_t = (r_t - \tilde{r}_t)A_{t-1} + (Y_t - \tilde{Y}_t) - (G_t - \tilde{G}_t) - (I_t - \tilde{I}_t) + \left[1 - \frac{1}{(\tilde{\beta}/\tilde{R})^{\sigma}}\right](\tilde{r}_t A_{t-1} + \tilde{Y}_t - \tilde{G}_t - \tilde{I}_t) \tag{13}$$

where a tilde indicates the permanent level of a variable[7] and R is the market discount factor.[8]

In essence, equation (13) states that the current account balance is influenced by two factors: on one side the deviations of the key variables from their "permanent" levels, on the other the discrepancy between the world market discount rate R and the residents' rate of intertemporal preference β; in other words, their "impatience" relative to the interest rate.

There may be several reasons why macroeconomic variables deviate from their long-run equilibrium. For example, a fiscal shock would lead to a larger current account deficit, as in Knight and Masson (1987), and would therefore be a warning signal, but other shocks might justify an increase in current account deficit or surplus without raising fears of an impending balance-of-payments crisis. In a later section, we examine the case of Israel where such a shock was caused by massive immigration, but one can also think of structural reforms, technological advances, or demographics as factors that might prompt a divergence from the long-term trend.

A more extensive model, drawn from Obstfeld and Rogoff (1996), can help to provide further insight on some of these aspects, especially demographic factors, which can be modeled as changes in the labor force, and exposes the interrelations between the variables on the right hand side of equation (13). To understand the linkages between investment, the capital stock, output, and the current account we incorporate a production function with capital installation costs. Assuming that the technology can be represented by a homogenous and concave production function $Y = \theta F(K,L)$, where K indicates capital, L labor and θ total

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[7] The permanent level of a variable is defined as the infinite sum of its discounted future stream. For example, permanent output is

$$\tilde{Y}_t \equiv \frac{\sum_{s=t}^{\infty} R_{t,s} Y_s}{\sum_{s=t}^{\infty} R_{t,s}}$$

and analogous expressions hold for C, I, and G.

[8] The market discount factor for consumption between time t and s is defined as

$$R_{t,s} = \frac{1}{\prod_{v=t+1}^{s} (1+r_v)}$$

factor productivity, the economy can be modeled as a firm maximizing an intertemporal discounted profit function

$$\sum_{s=t}^{\infty} R_{t,s}\left[\theta_s F(K_s,L_s)-w_s L_s-I_s-\frac{aI_s^2}{2K_s}\right] \tag{14}$$

where w denotes the real wage, and the term $aI_t^2/2K_t$ represents the fixed cost of installing new capital. The solution to the intertemporal constrained maximization problem of adjusting the capital stock to the new labor force, $\bar{L}$, yields an equation for the current account in the form

$$\begin{aligned} CA_t = \left(\left[\theta F(K_t,\bar{L})-\frac{aI_t^2}{2K_t}\right]-\frac{r}{1+r}\sum_{s=t}^{\infty}\left(\frac{1}{1+r}\right)^{s-t}\left[\theta F(K_s,\bar{L})-\frac{aI_s^2}{2K_s}\right]\right) \\ -\left[\frac{q_t-1}{a}K_t-\frac{r}{1+r}\sum_{s=t}^{\infty}\left(\frac{1}{1+r}\right)^{s-t}\frac{q_s-1}{a}K_s\right] \end{aligned} \tag{15}$$

where q_t can be interpreted as the shadow cost of capital, also known as Tobin's q.

By noticing that the term

$$Y_{N,t} \equiv \theta F(K_t,\bar{L})-\frac{aI_t^2}{2K_t} \tag{16}$$

represents net output, and that profit maximization requires

$$I_t = \frac{q_t-1}{a}K_t \tag{17}$$

equation (15) can be simplified as

$$CA_t = [Y_{N,t}-\tilde{Y}_{N,t}]-[I_t-\tilde{I}_t] \tag{18}$$

Equation (15), or its simpler version (18), helps to identify how the jump in a country's labor force to the new level $\bar{L}$ induces an increase in the stock of capital, K_s, that is needed (in all future periods) to collaborate with the larger labor force. This results in a sustained increase in the level of net investment in fixed capital, which in turn exerts a twofold negative effect on the current account balance. First, it raises permanent net output so that, until current net output adjusts fully, the first term on the right hand side of equation (18) is

negative. Second, investment at time t must shift above its permanent level, thereby increasing the second (negative) term in equation (18). Moreover, the shadow cost of capital, q_t, grows more than proportionately to the ratio I_{t+1}/K_{t+1}, thus amplifying the effect on investment.

An alternative and simpler insight on the demographic factor can be provided by ignoring the installation cost in (14) and once again setting $\beta(1+r) = 1$ (thereby omitting the "impatience" element). The solution to the maximization problem yields a current account equation as

$$CA_t = [w_t L_t - \tilde{w}_t \tilde{L}_t] - (G_t - \tilde{G}_t) - I_t \qquad \textbf{(19)}$$

where the tilde denotes, as usual, the permanent level; by taking I_t to the left hand side, one can write equation (19) in terms of savings S_t

$$S_t = [w_t L_t - \tilde{w}_t \tilde{L}_t] - (G_t - \tilde{G}_t) \qquad \textbf{(20)}$$

Equations (19) and (20) state that when, for example, the birth rate increases so that the younger cohorts of the population expand, the current labor force is below its long-term level; therefore, the term in square brackets is negative. Intuitively, a larger population means that the newcomers will have a smaller per capita external debt-service burden, so the resources to provide them with capital can be drawn from the future. Likewise, the current generation can consume more today, shifting the burden to the next one, which will be in a better position to foot the bill.

But the benefit of a demographic expansion will not come free: in fact, the need to educate and provide health services to the new generation will impact public expenditures G, which will therefore be above their long-term level. This will adversely affect the current account balance and therefore add to the external debt to be repaid in the future.

D. Overlapping Generations and Life-Cycle Effects

The consumption smoothing approach deals with a rather specific demographic factor: the deviation of labor force from its long-run equilibrium. However, this analysis hinges on the assumption that the labor force is homogenous in the sense that differences in age groups and in their income profiles are absent, thereby neglecting life-cycle considerations in the sense of Modigliani and Brumberg (1954).

Overlapping generations models (extended by Diamond (1965) to international economics) provide the natural framework for analyzing these aspects.[9] The basic deterministic set-up entails the optimization of a two-period logarithmic utility function

$$U(c_t^Y, c_{t+1}^O) = \log(c_t^Y) + \beta \log(c_{t+1}^O) \quad \textbf{(21)}$$

where c^Y and c^O refer to consumption during young age and old age respectively, subject to a budget constraint

$$c_t^Y + \frac{c_{t+1}^O}{1+r} = y_t^Y + \frac{y_{t+1}^O}{1+r} \quad \textbf{(22)}$$

with y indicating the income of each generation.

The main difference with the consumption smoothing approach is the presence of two types of agents, the olds and the youngs, with different behavior at each point in time, so that aggregate consumption at time t is given by $C_t = c_t^O + c_t^Y$.

From the Euler equation

$$c_{t+1}^O = (1+r)\beta c_t^Y \quad \textbf{(23)}$$

and the condition $(1+r)=1/\beta$, the private savings S_t^P can be shown to obey the equation

$$S_t^P = \left(\frac{\beta}{1+\beta}\right)[\Delta y_t^Y - \Delta y_{t+1}^O] \quad \textbf{(24)}$$

which stresses the role of the changes $\Delta y_t = y_t - y_{t-1}$ in the earning profiles over time of the two groups.

The argument is broadened by observing that, if the youngs start with no wealth and the olds consume the wealth saved during their youth, identity (9) in the framework of this overlapping generations model can be expressed as

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[9] Another classic references on the overlapping generations models in international economics is Kareken and Wallace (1981), who examine the exchange rate indeterminacy in a regime of fiat money.

$$CA_t = W_{t+1} - W_t = (W_{t+1}^P - W_t^P) + (W_{t+1}^G - W_t^G) \equiv S_t^P + S_t^G \qquad (25)$$

where W_t is the wealth at the end of period t, while the superscript P and G refer to the private and government sector respectively, so that

$$S_t^Y = W_{t+1}^P \quad ; \quad S_t^O = -W_t^P \qquad (26)$$

By dropping the condition $(1+r)=1/\beta$ and assuming that the population N_t grows at the rate n, private savings would be

$$\frac{S_t^P}{Y_t} = \frac{(N_t - N_{t-1})s^Y}{N_t y^Y + N_{t-1} y^O} \equiv \frac{ns^Y}{(1+n)y^Y + y^O} \qquad (27)$$

where the lower-case letters indicate per capita variables. Differentiating with respect to n

$$\frac{d(S^P/Y)}{dn} = \frac{s^Y(y^Y + y^O)}{[(1+n)y^Y + y^O]^2} \qquad (28)$$

we note that the right hand side quantity is positive given that $s^Y > 0$. In essence, when the population growth rate increases the savings rate goes up because the number of the youngers (savers) rises relative to that of the elders (dissavers). More generally, this overlapping generations model explains how the savings ratio and, as a consequence, the current account reflects the age composition of the population and the participation in the workforce.

E. Capital Flows, Uncertainty, and Sovereign Risk

The preceding sub-section focused on consumption and investment smoothing through current account imbalances and associated international borrowing and lending. But international capital flows involve a wide array of securities and financial instruments. The possibility of hedging against shocks to the domestic economy through international portfolio diversification has fundamentally transformed the traditional links between the developments in the real economy of a country and the income of its residents. In the extreme case, residents of a country could sell to foreigners all the domestic firms and invest in a worldwide diversified portfolio with the proceeds. They would then be covered against the fluctuations in domestic GDP and would instead be exposed to the risks of the world financial market.

Following Obstfeld and Rogoff (1996), a simplified two-period version of models widely used in modern finance may help to shed light on the determinants of the current

account balance. These models stem from the Arrow-Debreu paradigm based on the central idea that consumption streams in different states of the world must be treated as different goods, hence bearing a different price.

Financial assets can be evaluated through the so-called Arrow-Debreu securities, defined as contingent claims that yield one unit of consumption if a certain event (or set of events) occurs in the future, and zero otherwise. Markets are said to be complete if there exist a large enough number of securities, or a combination of securities, that allow an individual to ensure a steady level of consumption in all possible future states of the world.

Although the Arrow-Debreu securities are fictitious, the pay-off structures of all real world financial instruments, stocks, bonds, derivatives, mutual fund shares, and so on, are equivalent to a linear combination of Arrow-Debreu securities, which in essence assume the role of building blocks for all asset pricing.

The two-period logarithmic utility function of a representative agent in a single-good Arrow-Debreu endowment economy, where two states of nature might occur in period 2 with probability $\pi(1)$ and $\pi(2)$, can be written as

$$U_1 = \log(C_1)+\pi(1)\beta\log[(C_2(1)]+\pi(2)\beta\log[C_2(2)] \qquad \textbf{(29)}$$

with C_1 and C_2 denoting consumption at time 1 and 2 respectively, and β the rate of intertemporal preference. For the sake of argument one can think of state 1 as being favorable to the domestic country, while unfavorable to the rest of the world, and vice-versa for state 2. The notation $C_2(1)$ and $C_2(2)$ stresses that consumption at time 2 is dependent on the realization of a particular state of the world. The representative agent faces a two-period budget constraint

$$C_1+\frac{p(1)C_2(1)+p(2)C_2(2)}{1+r} = Y_1+\frac{p(1)Y_2(1)+p(2)Y_2(2)}{1+r} \qquad \textbf{(30)}$$

where p(1)/(1+r) and p(2)/(1+r) are the prices of Arrow-Debreu securities expressed in time 1 consumption units, or, stated differently, p(1)/(1+r) is the price of a security that yields one unit of output only if state 1 occurs in period 2, and p(2)/(1+r) is analogously defined;[10] r is the discount factor, equal to the real return on a riskless bond whose price is 1 at time 1.

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[10] The p(s) should be interpreted as the price of period 2 consumption when the state s occurs, expressed in terms of a sure unit of consumption in period 2 (i.e., independent of the state of nature that will prevail in the future).

The basic difference from the consumption smoothing approach can be grasped by observing that in the Arrow-Debreu economy agents can smooth consumption not only between time periods, but also between states of the world. The representative agent's maximization problem (with logarithmic utility function) yields a set of first order conditions

$$\pi(s)\frac{C_1}{C_2(s)} = \frac{p(s)}{\beta(1+r)} \qquad s = 1,2 \tag{31}$$

from which one can derive a closed form solution for the current account position in period 1

$$CA_1 = Y_1 - C_1 = \frac{\beta}{1+\beta}Y_1 - \frac{1}{1+\beta}\left[\frac{p(1)}{1+r}Y_2(1) + \frac{p(2)}{1+r}Y_2(2)\right] \tag{32}$$

If it is assumed that the riskless rate and the rate of intertemporal substitution are constant (or move very slowly over time), the current account balance is essentially determined by the prices of the Arrow-Debreu securities. By dividing the first order conditions, we obtain the following equilibrium condition

$$\frac{\pi(1)C_2(2)}{\pi(2)C_2(1)} = \frac{p(1)}{p(2)} \tag{33}$$

showing that the prices of the Arrow-Debreu securities depend on the probabilities of the two states. In this highly stylized model, the probabilities $\pi(1)$ and $\pi(2)$ are constant. In the real world, however, the possible future states of the world are more than two[11] and their probabilities are reassessed every time new information reaches the market, so that portfolio choices are revised accordingly.

Nevertheless equations (32) and (33), by emphasizing the role of the probabilities $\pi(1)$ and $\pi(2)$, can explain why capital flows are more volatile in those countries where the assessment of risk is complicated by lack of information on macroeconomic variables, frailty of the financial system, unsustainability of fiscal policies, weakness in the legal system, etc.

On the other hand, the surge in capital flows and international capital mobility that took place in the 1990s can be explained by observing that in complete autarchy the first order conditions would be

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[11] The extension of this model to N states of the world does not involve particular conceptual difficulties, but merely more cumbersome notation.

$$\frac{p(s)^A}{1+r^A} = \frac{\pi(s)\beta Y_1}{Y_2(s)} \qquad s=1,2 \tag{34}$$

where the superscript A stands for the autarchy level of the variables. By conveniently rearranging equation (24) (see Obstfeld and Rogoff (1996) p. 339), one obtains

$$CA_1 = \frac{Y_2(1)}{1+\beta}\left[\frac{p(1)^A}{1+r^A} - \frac{p(1)}{1+r}\right] + \frac{Y_2(2)}{1+\beta}\left[\frac{p(2)^A}{1+r^A} - \frac{p(2)}{1+r}\right] \tag{35}$$

which shows that the current account balance is determined by the difference between the autarchy prices and the world prices of the Arrow-Debreu securities. When restrictions to capital movements are relaxed, risk-averse investors prefer to reduce the exposure to country-specific risks and diversify their security holdings. As investors shift their portfolios internationally, larger capital flows result. Inevitably, the current account deficits or surpluses of each individual country must reflect this phenomenon, and as a consequence the level of capital flows and their counterpart in the current account balance tend to be less influenced by the determinants of trade in currently-produced goods and services.

The policy implication of the model presented in this section should be fairly straightforward: current account deficits are not undesirable, but in order to attract and enjoy the benefits of foreign financing a country must maintain a steady and appropriate stance of both fiscal and monetary policy, and must improve the functioning and transparency of its markets in order to facilitate the correct assessment of probabilities $\pi(s)$ by market participants. When this prescription is neglected, large current account deficits and large capital flows make a country vulnerable to shifts in assetholders' risk perceptions and their (uninformed, and therefore biased) assessments of the underlying fundamentals.

F. The Monetary Approach and the Overshooting Hypothesis

The sequence of models presented up to now progressively shifts the emphasis in analyzing the current account from trading relationships to financial variables and the role of capital markets, reflecting the changes in the determinants of international transactions in the last two decades. The monetary approach to the balance of payments and the exchange rate offers a more drastic view: it shuns the direct links between real variables and exchange rates, and current account balances. Typically, it assumes that purchasing power parity holds, and it emphasizes three elements: money supplies, money demands, and absolute price levels in each country. On the assumption that the purchasing power parity holds at each point in time, changes in the real exchange rate can be neglected, so the reduced form of the equation governing the nominal exchange rate can be expressed by

$$e_t = (m_t - m_t^*) - \alpha(y_t - y_t^*) + \gamma(i - i_t^*) \qquad \textbf{(36)}$$

where e is the natural logarithm of the nominal exchange rate (the price of foreign country money in terms of home country money), m is the log of nominal money supply (which, in equilibrium, is equal to the log of nominal money demand), i is the interest rate. The asterisks, as usual, denote foreign variables, α and γ are parameters. Assuming that uncovered interest parity holds, that is

$$E[e_{t+1}|\Omega_t] - e_t = i - i_t^* \qquad \textbf{(37)}$$

equation (36) can be transformed into

$$e_t = (m_t - m_t^*) - \alpha(y_t - y_t^*) + \gamma(E[e_{t+1}|\Omega_t] - e_t) \qquad \textbf{(38)}$$

If one neglects the effect of a monetary expansion on the expected future spot exchange rate, then equation (38) appears to say that a proportional change in m_t relative to m_t^*, keeping everything else constant, leads to an equiproportional change in the nominal exchange rate, so that the model has nothing to say about the impact of monetary policy on the current account. However, the experience of more than two decades of (more or less free) floating exchange rates among the major currencies has amply demonstrated that this is an oversimplification of the analysis. In particular, two aspects should be emphasized: (1) monetary shocks impact on the expected future spot exchange rate; and (2) the adjustment mechanism in the (auction-type) money and bond markets operates instantaneously, while goods prices are determined in (contract-type) markets that exhibit relatively slow adjustment to excess demands or supplies.

These two insights were exploited by Dornbush (1976) to rationalize the observed movements of major exchange rates in the early years of the post-Bretton Woods period. The Dornbush model assumes that the log of aggregate demand for home country output y^d is an increasing function of the real price of foreign exchange, $e + p^* - p$, an assumption that is justifiable, for example, if domestic and foreign goods are not perfect substitutes. Thus one can write

$$y_t^d = \bar{y} + \psi(e_t + p^* - p_t - \bar{e}) \qquad \psi > 0 \qquad \textbf{(39)}$$

where p is the log of the price level, y is the log of output, and the bar over e and y indicates the equilibrium levels consistent with full employment. Whenever $y^d > \bar{y}$ the current account of the balance of payments must be in deficit, and vice versa when $y^d < \bar{y}$.

If the money market clears instantaneously while the goods market converges slowly to a new equilibrium, then unanticipated monetary shocks will produce real effects. In particular, when there is an unanticipated monetary expansion, the home country's nominal exchange rate will depreciate more than proportionately to the increase in the money supply. This "overshooting"—which Dornbush postulated to persist for a period that depends on the size of the initial shock and the rate of price adjustment in the goods market—implies that the home country's real exchange rate will be below its steady state level throughout the adjustment process. This, in turn, means that the adjustment will result in an initial jump to a current account surplus which will then gradually decline to balance in the long run. This analysis, therefore, suggests that one should not be surprised to see that exchange rates diverge for extended periods from their perceived or calculated equilibrium level, although they ultimately revert to that level.

Such an analytical conclusion was challenged by the well-known empirical finding of Meese and Rogoff (1983) that a random walk[12] yields better exchange rate forecasts than the widely used econometric models. These considerations have not only forced economists to re-examine their analysis of exchange rate determination, but have also raised the prospect that some widely used models—including the consumption smoothing models and the monetary approach—linking exchange rates to the current account or, more generally, to macroeconomic fundamentals, may give rise to nonstationary solutions, often called bubbles. These lines of inquiry suggest that there may be an element of indeterminacy in exchange rate dynamics and their linkage to the current account, a prospect that certainly gives policymakers cause for reflection.

III. The Current Account in Economic Policymaking

The preceding section has sought to show that economic theory does indeed provide some conceptual tools for analyzing a country's current account position, as well as some useful insights about the behavior of its current account balance in response to shifts in the stance of economic policies or other autonomous shocks. This analysis does not, however, provide a coherent or unequivocal framework that can be relied upon in all circumstances, and it underscores the uncertainties in this relationship. Thus policymakers still face the practical challenge of determining the aspects on which they need to concentrate in each particular case, what paradigm is most appropriate to the specific circumstances of the country they are working on, and the broad spectrum of options that should guide their decisions.

It is also worth emphasizing that the preceding survey is concerned primarily with "positive economics." It does not say anything about the 'desirable' or 'appropriate' level of an exchange rate or a current account balance. Nor does it give much guidance about the

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[12] Recent research, however, points out that exchange rates follow a martingale model, which imposes less stringent conditions on the error term, for example, its variance need not be constant.

quantitative magnitudes and paths of current account imbalances that should be considered to be broadly sustainable over time. Policymakers are ultimately concerned with these normative considerations. The need to go beyond positive economics shows up in many aspects of the approach that is typically adopted by policymakers. It is true, for example, of the analyses of the IMF staff in the context of the short-term macroeconomic projections for its semi-annual World Economic Outlook papers and its work on individual IMF member countries. It is also a theme running through the contributions of policy-oriented economists, such as John Williamson's work on fundamental equilibrium exchange rates (see Williamson (1985)).

The essence of the policymaker's problem is to determine a 'sustainable' set of economic policies—that is, a set of policies that will yield reasonable economic growth performance, price stability, a sustainable fiscal position (in the sense that the ratio of government debt to GDP is stable at an appropriate level), low unemployment, and a sustainable current account position (in the sense that the society's choices about savings and investment balances are consistent with the amount of financing that the rest of the world is prepared to lend or borrow at prevailing interest and exchange rates).

The approach most commonly adopted by policymakers to address these questions is often referred to as the "underlying current account balance" approach. For three decades the IMF staff, as well as a number of other policy-oriented economists (see, for example, Williamson (1994)) have pursued a broad research program aimed at assessing the sustainable levels of the fundamental variables that determine the current account and detecting deviations from equilibrium that could produce significant systemic effects. The methodology employed has its roots in an eminent tradition dating back to Nurske (1945) and Metzler (1951),[13] and it hinges on the macroeconomic balance synthesized by identity (1). One of its main objectives is the estimation of a long-term exchange rate level (or time path) consistent with the underlying fundamentals, thus allowing policymakers to recognize short-term misalignments in exchange rates.

Basically, the approach consists of first determining the current position that would exist for a given country in the longer term at the current level of its real exchange rate once the temporary effects of activity levels, past relative price changes, and other similar factors had worked their way through the system. This "underlying" current account balance is then compared with an estimate of the "sustainable" current account, that is, the current balance that can be financed by long-term capital flows (based on demographic factors, debt service, and the like). Finally, estimates are made of the direction and approximate magnitude of the changes in real exchange rates that would be desirable to move from the underlying current account position to the sustainable position. An approach along these lines has been used by the IMF staff for many years. It is described in detail by Artus and Knight (1984) and by Clark et al. (1994). In essence it involves four steps:

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[13] For a refined version see IMF Occasional Paper (1984).

- The **first step** consists of estimating, or projecting, the current account balance that would be likely to exist for the country under consideration if, at the currently observed market exchange rates, the country were operating at a 'normal' level of capacity utilization and all lagged effects of past changes in exchange rates, prices, relative activity levels, and special or temporary factors had fully worked through onto the current account. This is the "underlying" current account position, and the procedure yields the left hand side of identity (1). The current account projections that IMF staff produce twice a year in the World Economic Outlook are an example of this type of exercise, as they incorporate country-specific knowledge and the policy appraisal developed in the context of the Fund's activities.

- The **second step** involves determining the sustainable level of the right-hand side of the identity established in equation (1). To do so, it is necessary to compute the 'normal' or sustainable savings-investment gap. Stated differently, this is the level that would be consistent with long-term equilibrium if the home country and its trade and financial partners were all functioning with low inflation and at appropriate rates of capacity utilization: it is the current account position that would be financed by 'normal' capital flows. For simplicity, this estimate of the sustainable (or financiable) current account is often made more or less independently of any impacts of the exchange rate level on saving and investment decisions, a shortcoming for which the consequences are evident from the theoretical analysis of Section II.

- The **third step** entails estimating the level of the country's real effective exchange rate that would equate the two sides of equation (1) as estimated in the previous two steps and comparing it to currently prevailing exchange rate levels. In other words, in case the two sides of equation (1) are far apart, one needs to evaluate the approximate size of the change in real exchange rates that would be needed to ensure that the 'sustainable' current account position is achieved in the medium term.

- From the preceding step, one obtains a measure of the deviation (sometimes referred to by policymakers as the 'misalignment') of a country's real exchange rate from its 'appropriate' or sustainable level. Thus the **final step** involves a judgmental assessment of the exchange rate misalignment based on this gap. Such assessments, of course, have a substantial margin of error. Moreover, as discussed further below, the significance of deviations depends on a number of factors: for example, a weak cyclical position in a country might justify an expansionary monetary policy with the depreciated exchange rate providing a stimulus for the recovery, so the exchange rate would be appropriate even though it deviates from the long-term equilibrium. Conversely, the exchange rate might not reflect current policies and, in addition, the policy stance should be changed, as in the case of a country with an overheated economy and a depreciated exchange rate. The exchange rates between currencies of highly integrated economies like the United States and Canada, or the EU members, should deviate much less from the equilibrium than exchange rates of major countries whose economies have a lower degree of interdependence.

In practice, specific applications of this general methodology yield quite different results, depending on the specific empirical techniques employed. Furthermore, when formal econometric techniques are used, the confidence intervals of the estimates often prove to be quite large. That is why, in practice, policymakers' views of exchange rate and current account misalignments sometimes diverge markedly. In this context, it is worth emphasizing once again that the estimates resulting from this underlying balance approach are not to be thought of as unconditional medium-term forecasts. All these projections are based on a 'feasible and appropriate' policy scenario, and are intended to provide broad guidance to national authorities in formulating their macroeconomic policy stance.

Furthermore, the stance of fiscal policy can itself be a source of misalignment whose implications are difficult to assess. Large structural fiscal deficits tend to produce wide savings-investment gaps and to cause real exchange rates to move sharply. But if the market deems the fiscal position to be unsustainable, the currency will tend to weaken and the volatility will likely increase, especially at times of uncertainty, for example during the discussion and passage of the budget law. In these circumstances, the underlying current account balance approach may indicate an undervaluation of a currency, which nevertheless would be justified once the uncertainty over future policy is taken into account. In other words the four-step procedure described above might sometimes lead analysts to conclude that the prevailing exchange rate level is appropriate, but the stance of macroeconomic policies is not.

IV. Three Case Studies

The way the general approach described in Section III is implemented by policymakers, of course, depends very much on the specific economy that is under consideration. To illustrate this point it is useful to distinguish at least three types of economies: large developed industrial economies; smaller industrial and developing economies that have access to international capital markets; and external financing-constrained developing economies. Over the years, policymakers have adopted modifications to their basic operational analysis that are geared to the distinctive characteristics of each type of economy. For major industrial economies, the focus is typically on the appraisal of the 'sustainable' external balance and the 'equilibrium' exchange rate paths that are viewed as consistent with the sustainable current account balance, explicitly taking into account the interrelations with other large countries. For the more advanced smaller economies, the intertemporal models surveyed above have proven to be useful in making predictions on the sustainability of the current account position and in explaining the dynamics of external balance. Finally, the financing-constrained model still constitutes a reliable framework for the design of economic policy in developing countries that have only limited access to world capital markets, and whose international economic relations are largely linked to developments in the markets for their exports and imports.

For large developed countries, the focus of policy analysis is typically on determining the dynamic real exchange rate path that appears to be consistent with the long-term

sustainability of the current account position. This aspect is also linked to the determination of the world interest rate and, in a broader sense, to the sustainability of fiscal policy. These elements also need to be projected in a wider historical perspective, by considering the typical savings behavior in different countries versus their incentives to expand or upgrade their capital stock. For example, over the 1990s U.S. gross national savings fluctuated around 16 percent of GDP, while in Japan they exceeded 30 percent, whereas the disparity in rates of investment between the two economies has been much smaller. In these circumstances, it is not surprising that the United States has been running a current account deficit, while the opposite is true for Japan.

A. A Group-of-Seven Country: Italy, 1992–95

Developments in Italy during 1992–95 (see Table 1) epitomize the situation of a large developed industrial country facing an unsustainable fiscal position and compelled by the strictures of the Maastricht Treaty to implement a swift adjustment of its policy mix. Following Milesi-Ferretti and Razin (1996), we link the current account balance to the trade balance X_t and the interest received (paid) on the stock of net foreign assets (liabilities) up to the previous period, A_{t-1} by the relation

$$CA_t = X_t(\epsilon_t) + r_t^* \epsilon_t A_{t-1} \qquad \textbf{(42)}$$

where the derivative of X with respect to the inverse of the real exchange rate, ϵ, is $X_\epsilon > 0$.

By equating (2) and (42), dividing both sides by the GDP level Y_t and setting

$$a_{t-1} = \epsilon_{t-1} A_{t-1}/Y_{t-1}$$

one obtains

$$\frac{Sp(r_t)}{Y_t} - \frac{Ip(r_t)}{Y_t} = \frac{X_t(\epsilon_t)}{Y_t} + r_t^* \frac{(1+\delta_t)}{(1+g_t)} a_{t-1} - \phi \frac{FP_t}{Y_t} \qquad \textbf{(43)}$$

where δ_t is the rate of real depreciation of the domestic currency from t-1 to t, and g_t is the real growth rate over the same interval. It is important to notice that in the derivation of equation (43), government debt is assumed to be held by domestic agents, while all external debt consists of liabilities of the private sector, which appears to be a reasonable approximation for a country like Italy. The links between fiscal, real, and financial variables highlighted by equation (43) help to develop an interpretation of the events that followed the Italian lira's exit from the EMS in September 1992.

Until 1992, Italy's economic performance was characterized by fiscal deficits that caused a steady rise in the ratio of government debt to GDP, a persistent excess of domestic inflation over that prevailing in Italy's trading partners (which placed downward pressure on

the lira in the EMS), and the high interest rates that the Bank of Italy—bound by the EMS rules and the need to service the growing stock of government debt—was compelled to maintain. As is typical in countries where fiscal imbalances are countered by a restrictive monetary policy, large capital inflows, far in excess of the current account deficit, entered the country from abroad—attracted by the high yields and the low perceived exchange rate risk. Hampered by the real appreciation of the currency and the consequent loss of competitiveness, the **trade deficit** widened, and by 1992 the current account deficit exceeded 2 percent of GDP.

Put another way, fiscal laxity was boosting domestic demand, while high interest rates were attracting speculative foreign capital and keeping the lira overvalued. All these elements coalesced to push the current account into deficit and to drive the real exchange rate out of line with fundamentals. In these conditions, the macroeconomic balance approach would indicate that a sharp adjustment was only a matter of time.

At the beginning of 1992, market doubts about the authorities' commitment to fiscal discipline were compounded by adverse domestic political factors associated with a wave of corruption investigations and the divergence of the German and U.S. monetary policies. By the summer of 1992, the exchange rate looked increasingly overvalued, despite sizable intervention by the Bank of Italy supported by heavy borrowing from other central banks and a sharp rise in the interest rate. Moreover the negative result of the Danish referendum on the acceptance of the Maastricht Treaty—and the concrete possibility that in the analogous referendum in France voters could reject the plans for the EMU—intensified the tensions that had been building up among the EMS currencies. The exchange rate stability of the past few years appeared increasingly precarious, exposing the capital invested in the weaker members of the EMS to a consistent exchange rate risk. In September, swept away by a massive speculative attack, the lira left the EMS for what was expected to be a brief period.

However, tensions persisted in the markets, while concerns about government creditworthiness emerged, (foreign currency-denominated government securities were downgraded by private credit rating agencies) and the lira slipped to a level that was more than 15 percent lower against the Deutsche mark than it had been in August.

The authorities, confronted with the prospect of further instability, pushed for passage of a tight fiscal budget which targeted an increase in the primary fiscal surplus to over 3 percent of GDP, enough to reduce the overall government deficit below 10 percent of GDP. At the same time, the government sought a balance-of-payments loan from the EU under a commitment that the debt-to-GDP ratio would stabilize by 1995.

In the aftermath of the crisis, consumer and business confidence plunged, so that GDP growth, already sluggish since 1990, turned slightly negative, as in most of continental Europe, and brought about a sharp rise in unemployment.

Events in the second half of 1992, as indicated in Table 1, led to a 1.4 percent decline in investment relative to 1991, an increase in private savings (growth in private consumption slowed from 2.3 percent in 1993 to 1.8 percent in 1992), and a leveling off of the government deficit. Thus the savings-investment gap began to shrink substantially although, on the negative side, as predicted by equation (43), the real depreciation and the GDP decline contributed to a sudden jump in net foreign liabilities, from 12.7 percent of GDP in 1991 to 15 percent of GDP in 1992 (Table 1).

As the macroeconomic balance approach would suggest, the real exchange rate reverted to a level consistent with fundamentals, prompting an adjustment in the current account balance towards it equilibrium level. This adjustment was aided by three factors that prevented the abrupt nominal devaluation of the lira from reigniting inflationary pressures, so that the depreciated real exchange rate persisted into the medium term. These factors were: (i) the weakness of the economy and the fiscal retrenchment that induced producers to restrain wage and price increases; (ii) a tight monetary policy; and (iii) the agreement between the government, the employers association and the trade unions to abolish backward wage indexation, and instead to bargain for nominal wage increases on the basis of targeted future inflation.

The gain in competitiveness after 1993 led to a sharp fall in imports and impressive export performance in both traditional and emerging markets. The surplus on merchandise trade, which had been virtually zero in 1991–92, reached over 3 percent of GDP in 1993 and 1994, while the current account recorded a turnaround from a deficit over 2 percent of GDP in 1991–92 to a surplus of 1.1 percent of GDP in 1993 and 1.5 percent in 1994. As a result, the net external liabilities dropped to 12 percent of GDP in 1994 (Table 1).[14] These factors were reinforced when fiscal adjustment was gradually implemented. From an overall general government deficit at over 9 percent of GDP up to 1994, the authorities took a series of measures that reduced the overall deficit to 6.8 percent of GDP in 1996, while stabilizing the debt ratio at around 125 percent of GDP. In sum, the Italian case is an example of how the market exchange rate and current account position can be out of line with economic fundamentals for a prolonged period as a result of an unsustainable policy mix, and how sharp and painful the eventual adjustment may prove to be.

As a final remark, it should be stressed that political uncertainty also played a significant role in the case of Italy and exacerbated the problems that led to the devaluation of the lira. The effects of political uncertainty on the exchange rate cannot be conveniently isolated in equation (34); they will be better captured by a stochastic model of international

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[14] This trend continues to the present: the current account deficit was 3.7 percent of GDP in 1996 and the net external liabilities are projected to decline to zero in the near future.

Table 1. Italy: Selected Indicators, 1991–95

	1991	1992	1993	1994	1995
Domestic economy		(Percentage changes)			
GDP	1.2	0.6	-1.2	2.2	2.9
Domestic demand	1.9	0.5	-4.5	1.6	2.3
Foreign sector (contribution)	-0.8	0.9	3.4	0.5	0.7
Exports	-0.8	5.9	9.1	10.7	11.6
Imports	2.7	5.4	-8.1	8.4	9.6
Unemployment rate 1/	8.6	10.7	10.2	11.2	12.0
Unit labor costs in manufacturing	7.4	3.2	3.0	-3.3	-0.6
GDP deflator	7.7	4.7	4.4	3.5	5.0
Investment, savings and current account		(In percentage of GDP)			
Gross national savings	18.8	17.3	18.1	18.9	20.6
Public savings	-6.1	-7.1	-5.1	-5.5	-3.9
Total investment	20.7	19.6	17.0	17.4	18.1
Current account (in percent of DGP) 2/	-2.1	-2.3	1.1	1.5	2.5
Net external debt	12.7	15.0	13.7	12.0	9.4
Public finances		(In percentage of GDP)			
General government					
Balance	-10.2	-9.5	-9.6	-9.0	-7.1
Primary balance	0.9	1.9	2.5	1.7	4.1
Debt	101.3	108.5	119.3	125.5	124.9
State sector					
Revenues	32.1	33.9	34.0	31.6	31.8
Expenditures	42.4	44.2	43.9	41.1	39.1
Balance	-10.3	-10.4	-10.0	-9.5	-7.4
Primary balance	-0.3	0.8	1.7	1.1	3.6
Debt	106.3	114.5	121.4	125.4	124.5
Financial variables and exchange rates		(Percentage changes)			
Money (M2) 3/	8.5	5.9	8.2	1.9	2.1
Total domestic credit 4/	12.5	11.7	7.6	6.2	5.0
Three-month rate on Treasury bills 5/	12.7	14.5	10.5	8.8	10.7
Nominal effective exchange rate	-1.4	-3.1	-15.8	-4.4	-9.8
Real effective exchange rate (based on ULC)	0.6	-1.2	-16.2	-6.3	8.0

Source: Data provided by the Italian authorities

1/ Excluding workers in the Wage Supplementation Fund.
2/ Current account is balance-of-payments basis.
3/ Moving average of last three months.
4/ End-of-period.
5/ Period average.

portfolio allocation by risk-averse investors of the kind sketched in Section II.E.[15] However, the basic thrust of the argument in this section would not be substantially altered.

B. A Small Developed Country: Israel, 1990–96

For smaller advanced countries that are subject to the exogenous movements in exchange rates among the major currencies, the attention of policymakers is typically focused on the sustainability of the current account position, the movements in external debt, and the effects of short-term capital flows. The standard framework used by policymakers to analyze this sort of situation has been the Mundell-Fleming model, usually on the assumption of high but less-than-perfect capital mobility.

However, a country's situation is often more complicated, since the deterioration of the current account balance may stem from multiple, possibly superimposed, causes. The case of Israel illustrates a situation where the impact of an unprecedented demographic shock was exacerbated by an unexpected fiscal expansion.

From late 1989 onward, large numbers of immigrants began to arrive in Israel, mainly from the former Soviet Union. About 800,000 individuals arrived over the succeeding seven years. The total population increased over this period on average by more than 3 percent per year, from 4.5 million in 1989 to 5.8 million in mid-1997. This massive immigration induced both a substantial expansion of demand in the goods market and a number of important structural changes in the economy.

Although the standard economic data cannot fully describe the extent of this transformation, they provide a measure of the magnitudes involved. Average annual real GDP growth increased sharply from 3.5 percent during the 1980s, to almost 6 percent during 1990–96, with a cumulative increase in real GDP of over 50 percent during the period. The expansion was fueled mainly by real investment, which grew at an annual average rate of 16.2 percent over the period 1990–95, compared to 0.1 percent during the 1980s. Private consumption was also stimulated by the new immigrants: during the 1980s real private consumption had increased on average by 5 percent a year, while in the last six years this rate was 7.1 percent. Unemployment—which peaked at over 11 percent of the labor force in 1992—was absorbed quickly so that the rate plunged to 6.5 percent by mid-1996, while the number of employed increased from less than 1.5 million in 1989 to about 2.0 million in 1996, with more than 60 percent of the new jobs being created in the business sector.

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[15] A finance model, for example, could provide a better insight on the developments that took place starting in 1996 when, after another general election, a more stable political outlook allowed further fiscal retrenchment and led to a substantial appreciation of the lira vis-à-vis the German mark, which fostered the re-entry in the EMS.

Israel's current account deficit during this period reflected several factors. Probably the most important one was the surge in investment and consumption stimulated by the influx of immigrants. Table 2 records the changes in the savings-investment gap and the current account balance as percentages of the total disposable income of the Israeli economy. Since 1991, private savings have declined as a percentage of total income (although not to a historic low), while investment has remained relatively constant after the initial jump in 1991. These opposing trends largely explain the deterioration of the current account. The two elements highlighted by equations (13) and (18) help to provide a more formal analysis and explanation of this process.

(1) **The change in intertemporal preferences**. The flow of new immigrants affected the intertemporal discount rate (loosely speaking, the 'impatience') of the population, β, because the immigrants brought virtually no assets with them and had to be supplied with essentials until they could become productive. When home country residents are more 'impatient' than those in the rest of the world, their intertemporal discount rate β is lower than the future world interest rates will tend to be, so that

$$\frac{\tilde{\beta}}{\tilde{R}} < 1. \qquad \textbf{(44)}$$

Substituting the condition (44) into equation (13), we can explain the reversal in the current account balance (Table 2).

(2) **The shift in the permanent level of variables**. The immigration wave was an unexpected phenomenon, which can be modeled as a one-time increase in the permanent level of certain key macroeconomic variables. From equation (18) we can indicate by $\hat{Y}_t$ and $\hat{I}_t$ the new permanent levels after the immigration. These new levels satisfy the conditions $\hat{Y}_t > \tilde{Y}_t$ (because the demographic shock boosted the real growth rate), and $\hat{I}_t > \tilde{I}_t$ (because the capital stock needs to complement the large jump in the labor force). But until the new labor force is adequately employed and the capital stock is fully upgraded the difference $Y_t - \hat{Y}_t$ will be negative, while the difference $I_t - \hat{I}_t$ will be positive. Equation (13) shows that while this adjustment process is under way the current account balance will remain subject to downward pressures.

The other element that has affected Israel's current account in recent years is the fiscal expansion that began in 1994. The immigrant absorption program, although absorbing a large amount of resources, did not itself put undue strain on the government budget. Indeed, although the domestic budget deficit increased from 3.2 percent of GDP in 1989 to 5.3 percent in 1991, it subsequently fell steadily to 2 percent of GDP in 1994. Beginning in late 1994, however, civil servants obtained unprecedented wage increases while fiscal revenues fell short of the forecasts in both 1995 and 1996. As a result, the fiscal deficit reached 3.2 percent of GDP in 1995 against a 2.75 percent target, and it rose again to

Table 2. Israel: National Saving, Domestic Investment, and the Current Account, 1988–96 1/

(Percentage of total income) 2/

	Gross National Saving (1)			Gross Investment (2)				Capital transfers	Net current account (4)		
	Total	Public	Private	Total	Stock	Non-resident-ial	Resident-ial		Total	Civilian import surplus 3/	Unilateral transfers
1988	17.0	0.6	16.4	16.3	0.0	11.6	4.6	0.4	1.1	3.1	4.2
1989	17.4	-2.2	19.7	15.5	0.2	10.4	4.9	0.4	2.3	3.4	5.7
1990	18.2	-2.3	20.5	18.0	0.8	11.6	5.5	0.4	0.7	5.2	5.9
1991	21.0	-0.8	21.8	22.3	1.1	12.6	8.6	0.4	-0.9	6.9	5.9
1992	22.2	1.1	21.1	22.1	1.1	13.1	7.9	0.3	0.4	5.9	6.4
1993	20.3	0.6	19.7	21.7	1.3	14.7	5.7	0.3	-1.1	6.4	5.4
1994	18.6	0.8	17.8	21.6	0.7	15.5	5.4	0.3	-2.7	7.9	5.2
1995 4/	17.8	-0.7	18.5	22.1	0.7	14.9	6.4	0.3	-4.0	9.1	5.1
1996	17.1	-1.7	18.8	22.0	0.7	14.5	6.7	0.3	-4.6	7.9	2.4

Source: Based on Israel Central Bureau of Statistics data.

1/ Calculated according to the official exchange rate.
2/ Total income is GNP plus net unilateral transfers from abroad.
3/ Including net payments to factors of production abroad.
4/ Including Health Law payments.

4.7 percent of GDP in 1996, against the targeted 2.5 percent. In essence, government spending was pushed above the permanent level consistent with an intertemporally balanced budget, with the negative consequences on the current account of the balance of payments that are described by equations (13) and (19).

C. An External Financing-Constrained Developing Country: Pakistan, 1993–96

For economies that are bound by the external financing constraint, the current account position and the sustainability of external debt represent the overriding considerations of economic policy formulation. The autonomous flow of available external financing determines the sustainable savings-investment gap and the associated current account deficit. The problem confronting policymakers is to adjust policies, particularly the fiscal balance, to keep the current account deficit at a level consistent with available financing. Simultaneously, monetary policy is normally set with an eye on the targeted level of international reserves.

The case of Pakistan illustrates the quandary faced by a country with limited access to international markets, a rapidly growing population, and an associated pressing need to enhance output growth. Despite an average gross domestic savings ratio of around 15 percent over the period 1993–95, domestic resources have not been sufficient to sustain an investment ratio that can significantly enhance real per capita GDP growth. External borrowing mainly takes the form of government borrowing, or carries a government guarantee, so that most foreign debt is, in practice, a government liability. In 1995/96 the share of public and public guaranteed debt and foreign currency liabilities was 83.3 percent of the total.

With the simplifying assumption that all government debt is external, equation (43), can be used to depict this situation. Indicating by d_t the rate growth of foreign net liabilities from t-1 to t due to fiscal operations, equation (43) can be rewritten as

$$\frac{Sp(r_t)}{Y_t} - \frac{Ip(r_t)}{Y_t} = \frac{X_t(\epsilon_t)}{Y_t} + r_t^* \frac{(1+\delta_t)}{(1+g_t)} \phi(1+d_t)\ a_{t-1} \qquad \textbf{(45)}$$

The external financing constraint translates into a condition on the growth rate, fiscal policy, and the rate of depreciation in equation (35) becomes

$$\frac{\bar{a}}{a_{t-1}} > r_t^* \frac{(1+\delta_t)}{(1+g_t)} \phi(1+d_t) \qquad \textbf{(46)}$$

where $\bar{a}$ is the limit on the ratio of foreign assets to GDP.

The performance of the Pakistani economy during the 1990s has followed a wavering course, due to unbalanced macroeconomic policies and the erratic crops in its large cotton-producing sector. In response to deteriorating economic conditions, the authorities formulated a program of reforms supported by IMF financing through the ESAF. The initial implementation of the program in 1993 led to a marked improvement of the current account and an increase in the foreign exchange reserves. However, as the resolve of the authorities waned economic growth slowed, prompting a widening of financial imbalances, rising inflation, a large current account deficit, weak capital inflows, and a sharp loss of official international reserves.

In late 1995, Pakistan launched a stabilization program supported by a stand-by arrangement with the IMF. The program included a stepped devaluation of 7 percent that was intended to restore competitiveness; introduction of a 5 percent minimum import tariff with limited exemptions; a temporary 10 percent regulatory import duty; budget cuts to stabilize and then reverse the rise in the ratio of government spending to GDP; and a 7 percent increase in domestic petroleum prices. These measures were accompanied by tight limits on credit expansion to be enforced through indirect monetary instruments and structural reforms aimed at broadening the tax base, liberalizing imports, and deregulating the financial system.

The program objectives, primarily in the fiscal area, were not achieved: the ratio of the fiscal deficit to GDP for the fiscal year 1995/96 reached 6.9 percent because of a revenue shortfall and expenditure overruns (Table 3). Difficulties in tax enforcement led to a decrease in revenues from sales taxes and import duties, notwithstanding a notable increase in imports, while expenditures exceeded the program level, mainly due to higher interest payments.

This slippage had serious repercussions. The government financing requirements were basically met through borrowing from the central bank, given that the government's capacity to undertake market borrowing was limited. This monetization of the debt, together with SPB losses in the forward exchange market, other losses by nationalized commercial bank, and higher credit to the private sector, resulted in an overrun in the growth of banking system net domestic assets from the 14.1 percent envisaged in the program to 18.5 percent. The counterpart to domestic credit expansion was a deterioration in the net foreign assets of the banking system, which fell by 1.8 percent of GDP.

The 12-month inflation rate in 1995/96 remained above 10 percent versus the 9 percent targeted in the program (Table 3), and the real exchange rate rose after the devaluation of October 1995, adversely affecting the performance of the nontraditional export sector. This outcome, coupled with expansionary demand management which fueled higher import growth, produced a deterioration of the current account position. Excluding official transfers, the deficit reached US$4.3 billion, almost 7 percent of GDP, the highest in recent years, and was financed largely by an increase in short-term foreign currency liabilities.

The fiscal position worsened again in the first quarter of the 1996/97 fiscal year: revenues fell and expenditures were not adjusted accordingly. Again the gap was covered by

Table 3. Pakistan: Selected Indicators, 1993/94–1995/96

	1992/93	1993/94	1994/95	1995/96
Output and prices			(Percentage change)	
Real GDP at factor cost	2.3	4.5	5.2	4.6
GDP deflator at factor cost	8.9	12.6	13.6	10.9
Investment, savings and current account			(In percentage of GDP)	
Total investment	20.5	19.4	18.4	18.6
Public	...	7.7	6.9	7.0
Private	...	11.7	11.5	11.6
Gross national savings	13.4	15.8	14.5	11.8
Public	...	0.1	0.3	-1.1
Private	...	15.7	14.2	12.9
Current Account excluding official transfers	-7.1	3.6	-3.9	-6.8
Budgetary operations				
Budgetary revenue	17.9	17.2	17.0	17.0
Budgetary expenditure	26.0	23.2	22.6	23.8
Budgetary balance	-8.1	-6.0	-5.6	-6.9
Domestic debt	45.6	45.2	42.9	42.3
Monetary sector			(Changes in beginning-of-period domestic liquidity)	
Net foreign assets	-7.1	5.6	3.8	-4.7
Net domestic assets	25.1	12.4	13.4	18.5
Domestic liquidity	18.0	18.0	17.2	13.8
External sector			(In percentage of GDP)	
Exports	13.1	12.9	13.2	13.3
Imports	19.4	16.6	16.8	18.5
Current account including official transfers	-7.1	-3.0	-3.4	-6.5
External public debt 1/	45.5	48.2	44.5	42.5
			(In millions of U.S. dollars)	
Gross reserves 2/	462	2,302	2,741	2,053
Gross reserves 2/ (in weeks of imports)	2.2	12.6	12.7	8.2
External debt service ratio 3/	22.4	22.6	22.0	24.7

Source: data provided by the Pakistan authorities, and Fund staff estimates and projections.

1/ Excludes foreign currency deposit liabilities.
2/ Excluding gold.
3/ Medium- and long-term debt service in percent of exports of goods and services and receipts of private transfers.

central bank direct financing so that monetary policy accommodated the fiscal expansion and a further decline in the banking system's net foreign assets ensued. As the current account position continued to deteriorate, capital flight increased and official international reserves declined to only US$1 billion at the end of September 1996.

The case of Pakistan illustrates the consequences of the constraint (46): fiscal expansions need to be financed at the margin by recourse to central bank credit. The ensuing inflation, combined with intervention to slow the depreciation of the nominal exchange rate, results in a real exchange rate appreciation which weakens exports and increases imports. The current account deficit widens in a fashion that roughly corresponds to the fiscal expansion. Given the external financing constraint, the situation is seen as unsustainable, private capital inflows dry up, and official international reserves decline once more. In such a country, the constraint embodied in (46) is binding. Even in the short term, a sustainable fiscal policy is the key to maintaining a sustainable current account position.

V. Summary and Conclusions

Over the past three decades, the evolution of economic thinking on the determinants of the current account balance has shifted the focus of analysis from short-term considerations to an intertemporal framework that emphasizes long-term sustainability. During the same period, the liberalization of controls on current and capital transactions and the associated increase in capital mobility have altered the relationship between movements in GDP and those in the current account balance. As a result of these changes, the current account balance is influenced by the portfolio choices of international investors as well as by the determinants of trade in goods and services. This paper has surveyed the theoretical developments and has tried to elicit some of their implications for practical policymakers.

But the current reality is inevitably more complex than even the most sophisticated economic models. For the larger industrial economies that have established access as borrowers from, or lenders to, international capital markets, the current account position must be judged in combination with a host of other indicators. As the survey of analytical work in Section II suggests, the most important factors are the savings-investment gap and the fiscal policy to which it is linked. Another aspect of the current account positions, particularly in major developed countries, is their effect on exchange rates. For smaller developed economies, which are subject to exogenous movements of exchange rates among the major currencies and to world interest rate shocks, the focus of the analysis is on the intertemporal sustainability of external debt. Since the need to increase the stock of capital over a long period of time may lead to a buildup of foreign liabilities, the problem for policymakers in this case is to ensure that the economy generates sufficient resources to service the external debt. For this purpose, the current account position must be appraised together with such factors as the growth prospects of the economy, its vulnerability to external shocks, the quality of its human capital, the dynamics of the terms of trade, the diversity of its export base, and the health of the financial system. Finally, for the external financing-constrained developing economies, establishing a sustainable stance of economic policies—particularly fiscal

policies—is essential to ensure that the current account position is consistent with available sources of financing.

At a broader level, it is clear from the discussion of Sections II and III that, as international economic interdependence has increased and the theoretical analysis has evolved to explain its impact on the current account, the methodological approaches typically applied by policymakers have not kept pace. While the theoretical analysis has increasingly emphasized the impact of intertemporal considerations and portfolio decisions on the evolution of the current account over time, practical policymakers have remained, at least to a large degree, embedded in the tradition stemming from the earlier Mundell-Fleming analysis.

This discrepancy shows up in three features of the approach of policymakers. First, estimates or projections of the underlying current account balance are based heavily on the standard "trade theory" analysis of exports and imports that is incorporated in Mundell-Fleming. Second, policymakers' projections of the 'sustainable' current account position are still based on an assessment of so-called 'normal' capital flows: they do not fully reflect the major theoretical advances of the consumption smoothing approach discussed in Section II, or the growing sophistication of financial markets. Third, policymakers have not yet come to grips with certain elements of indeterminacy in the behavior of current account positions in a globalized world of highly interdependent financial markets. Even at a basic level, for example, most policymakers' projections are not able to consistently incorporate the impact of exchange rate overshooting due to unanticipated monetary developments on the evolution of the current account over the medium term. At a deeper level, the indeterminacies resulting from speculative bubbles and currency attacks are essentially omitted from their framework.

Clearly, it will be important for policymakers to endeavor to incorporate these aspects of the real world more explicitly into their quantitative work and projections. But such an advance, even if it is achieved, may not do a great deal to increase policymakers' ability to predict the behavior of the current account or to systematically alter its level. This is largely due to the fact that, as globalization proceeds in both goods and financial markets, the production process becomes far more diversified geographically. At the same time, the integration of financial markets is creating a much wider menu of portfolio choices and is leading to a situation where current account imbalances will be financed to a greater extent than in the past by foreign direct investment flows rather than debt instruments. In such a globalized world, movements in current account positions may have much less ultimate significance for policymakers than has been the case up to now.

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