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External Imbalances and Fiscal Policy in the Group of Three Countries: The Role of Stock-Flow Dynamics*

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Abstract

This paper discusses recent empirical research on the interplay between fiscal policies and external imbalances in the G3 countries, focusing on the stock-flow dynamics of public and foreign deficits and debt accumulation.

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Summary

During the last five years, the United States has been running
current account deficits averaging 3 percent of gross national product
(GNP), while Japan and the Federal Republic of Germany have recorded
surpluses of a similar relative magnitude. These imbalances have
resulted in massive swings in net foreign asset positions. Meanwhile,
the U.S. public budget deficit has swung sharply into deficit, pro-
ducing a rising public debt/GNP ratio while, in contrast, Japan and
Germany have followed policies to slow down or even reverse the upward
movements in their public debt/GNP ratios.

This paper discusses recent research on the interplay between
fiscal policies and external imbalances in these major industrial coun-
tries, emphasizing the role of stock-flow dynamics in public and foreign
deficits and debt. It reviews existing evidence indicating that, in
long-run equilibrium, net foreign assets depend on international differ-
ences in public debt and demographic factors, and discusses dynamic
mechanisms that may operate smoothly to maintain a stable equilibrium
and avoid disruptive adjustment. Particular attention is paid to the
equilibrating role that may be played by fiscal policies.

I. Introduction

Five years ago, at the 40th Congress of the International Institute of Public Finance in Innsbruck, former IMF Managing Director de Larosière discussed one of the most pressing economic problems of the 1970s and early 1980s, namely the widespread occurrence of large and persistent fiscal deficits. He drew particular attention to the budgetary and economic consequences of the associated stock-flow dynamics, emphasizing that, "in spite of a growing awareness of the problem of debt accumulation, there are still too many observers who judge fiscal deficits exclusively in terms of their immediate impact on the economy" (1984). At that time, the general government budget of the United States had just moved sharply into deficit (averaging over 3 1/2 percent of GNP in 1982-83 compared with 1 percent during the preceding decade), initiating an abrupt reversal of the decline in public debt relative to GNP that had been achieved during most of the postwar period; since 1981, the net debt/GNP ratio had risen by 6 percentage points to a level of 25 percent in 1984, a value last recorded in 1972 (Chart 1). Moreover, in the other G3 countries, Japan and the Federal Republic of Germany, fiscal deficits had been sizeable and persistent ever since the first oil crisis; accordingly, in both of these countries the public sector's net indebtedness had shown steep upward movements totaling more than 25 percentage points of GNP (Charts 2 and 3).

Since then, similar concerns have been raised by growing imbalances in the external current accounts of these three countries. During the last five years, the United States has been running persistent current account deficits averaging 3 percent of GNP, while Japan and Germany have recorded surpluses of a similar magnitude relative to their respective national products. As shown in Charts 1-3, these imbalances have resulted in massive swings in net foreign asset positions. From being the world's largest net creditor nation during most of the postwar period until the early 1980s, the United States is estimated to have become the world's largest net debtor; conversely, the net foreign assets of Japan and Germany have jumped sharply. It is estimated that the net foreign liabilities of the United States totaled more than 10 percent of GNP in 1988, while the net foreign assets of Japan and Germany had risen to levels in the range of 13-16 percent of GNP.

These swings of net foreign asset positions coincided with a further rise in public indebtedness of the United States by 5 1/2 percentage points of GNP in 1984-88; in contrast, the trend increase of the public debt/GNP ratio was reversed in Japan and almost brought to a halt in Germany. Many observers have emphasized the relationship between public and foreign deficits and debt accumulation in these countries, arguing, particularly in the most recent period, that a reduction in the fiscal deficit of the United States is the first imperative for bringing external imbalances among major industrial countries into a more sustainable pattern; this theme has been developed also in the OECD Economic Outlook and the IMF World Economic Outlook.

While it is generally agreed that there are limits on the degree to which public and foreign debts can continue to accumulate, 1/ it is much less clear at what point such limits might be reached and what mechanisms might serve to ensure that economies stay a safe distance away from them so as to avoid potentially disruptive adjustment. Indeed, in its latest Annual Report, the Bank for International Settlements noted that "at some point threshold effects will come into play, though it is impossible to predict when and where" (1989, p. 211). The British Chancellor of the Exchequer Lawson recently concluded that "there is still no agreement about a number of key aspects of these [external] imbalances: [...] how long they can persist without causing serious problems; the appropriate response and role of governments; and the mechanisms by which imbalances are reduced" (1988, p. 3).

This paper addresses three questions. First, why is it relevant to look at net foreign assets when assessing the adequacy of current account positions? 2/ Second, what factors determine the equilibrium stock of net foreign assets, and what dynamic forces serve to ensure that the equilibrium is stable? Drawing on the recent theoretical literature, these two questions will be taken up in Section 2. Third, what are in this context the main empirical issues, and to what extent have they been resolved? Section 3 will identify some of the important empirical issues, and discuss how recent studies on the G3's external imbalances have dealt with them. The conclusions that emerge from the discussion will be summarized in Section 4.

II. Theoretical Aspects of Net Foreign Asset Equilibrium

The relevance of looking at net foreign assets when assessing the adequacy of current account positions follows directly from one of the important roles of the current account in the economy, which it has in common with fiscal policy, namely to contribute to an optimal inter-temporal allocation of production and consumption. 3/ Optimizing their inter-temporal consumption patterns, countries save and invest part of national income (or sometimes dissave) so as to utilize optimally the national resources and absorb optimally shocks that may impinge on the economy. When considering the adequacy of the flow of national saving in any given year, it is clearly important to assess it against the

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1/ McCallum (1984) presented a model allowing the public debt to GNP ratio to grow without bound, but not the ratio of public debt to disposable income (defined to include the unbounded interest payments on the public debt). Nevertheless, he acknowledged that in reality default and tax evasion motives presumably place limits on the debt/GNP ratio.
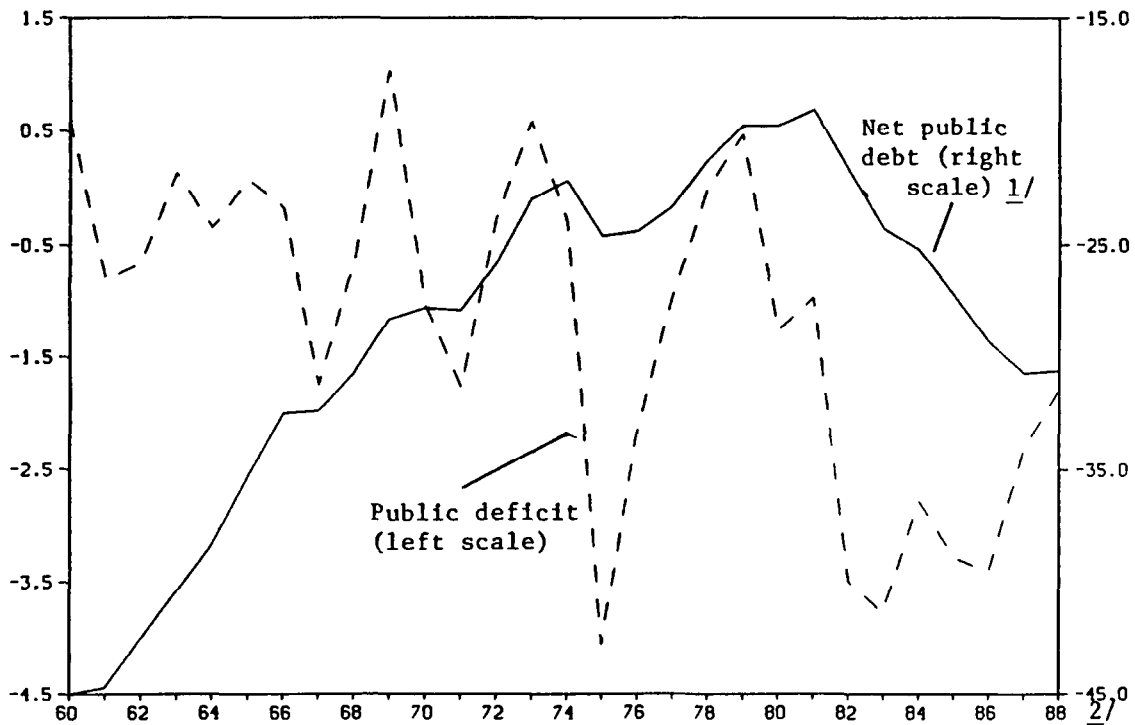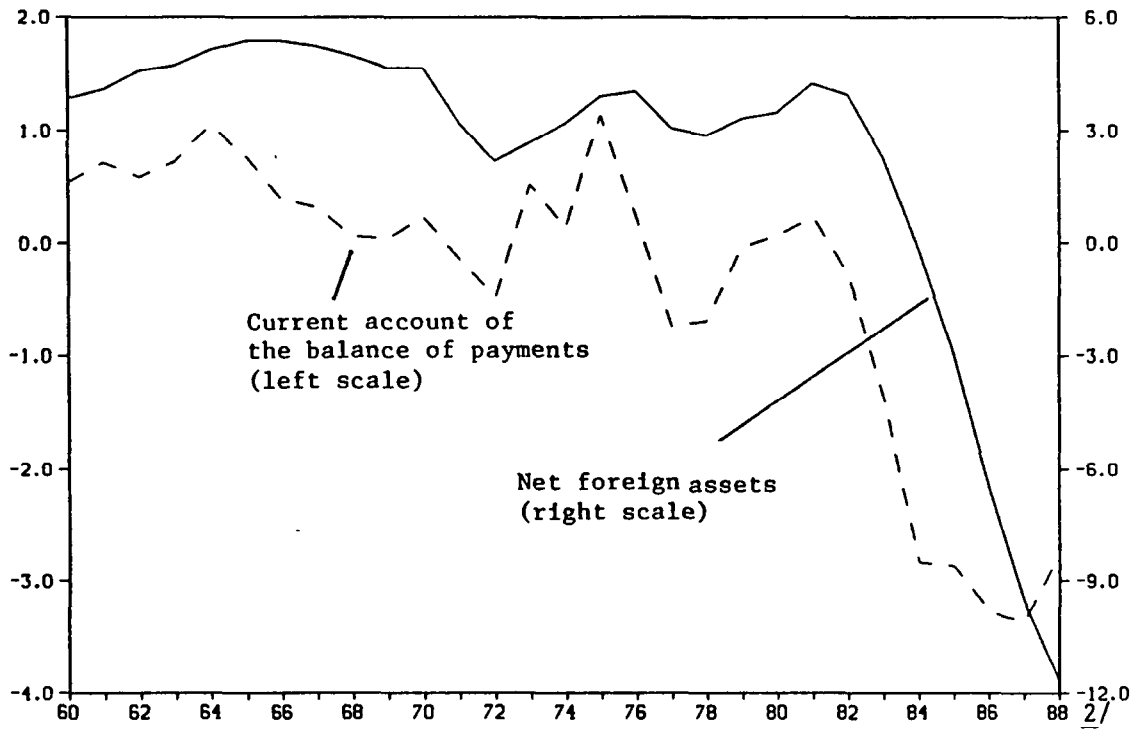
2/ The paper focuses on net foreign assets and net public debt, but, as noted at selected points in the discussion, there may also be circumstances where gross foreign and fiscal positions are relevant.

3/ See e.g. Sachs (1982), Razin and Svensson (1983), and Frenkel and Razin (1987).

Chart 1

UNITED STATES
Public and Foreign Deficits and Debt 1/
(In percent of GNP)

Current account of
the balance of payments
(left scale)

Net foreign assets
(right scale)

Net public
debt (right
scale) 1/

Public deficit
(left scale)

Source: OECD, Economic Outlook; IMF, International Financial
Statistics; Horne et al. (1989).
1/ Deficits, liabilities, and debt have negative signs; public
sector data are for general government (public financial assets have
been netted out to arrive at net public debt).
2/ Partly estimated.

Chart 2

JAPAN

Public and Foreign Deficits and Debt 1/
(In percent of GNP)

Sources: OECD, Economic Outlook; and IMF, International Financial Statistics; Horne et al. (1989).

1/ Deficits, liabilities, and debt have negative signs; public sector data are for general government (public financial assets have been netted out to arrive at net public debt).

2/ Partly estimated.

Chart 3

GERMANY

Public and Foreign Deficits and Debt 1/

(In percent of GNP)

Current account of the
balance of payments
(left scale)

Net foreign assets
(right scale)

Net public debt 1/
(right scale)

Public deficit
(left scale)

Source: OECD, <u>Economic Outlook</u>; IMF, <u>International Financial
Statistics</u>; Horne et al. (1989).

   1/ Deficits, liabilities, and debt have negative signs; ·public
sector data are for general government (public financial assets have
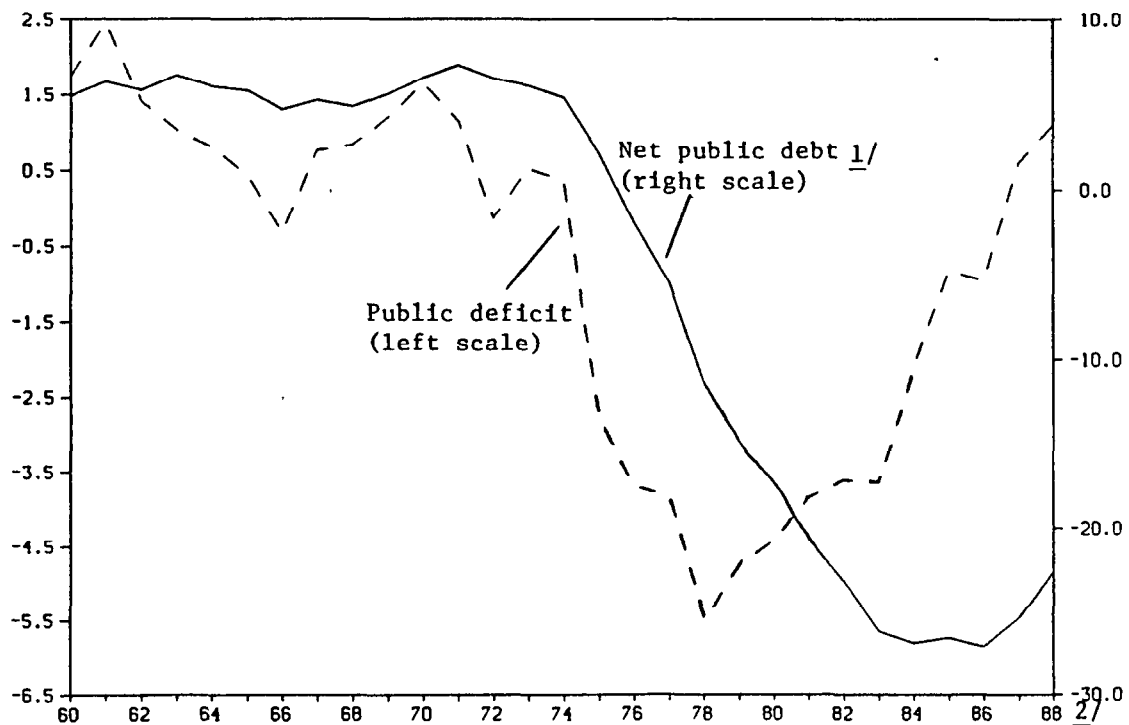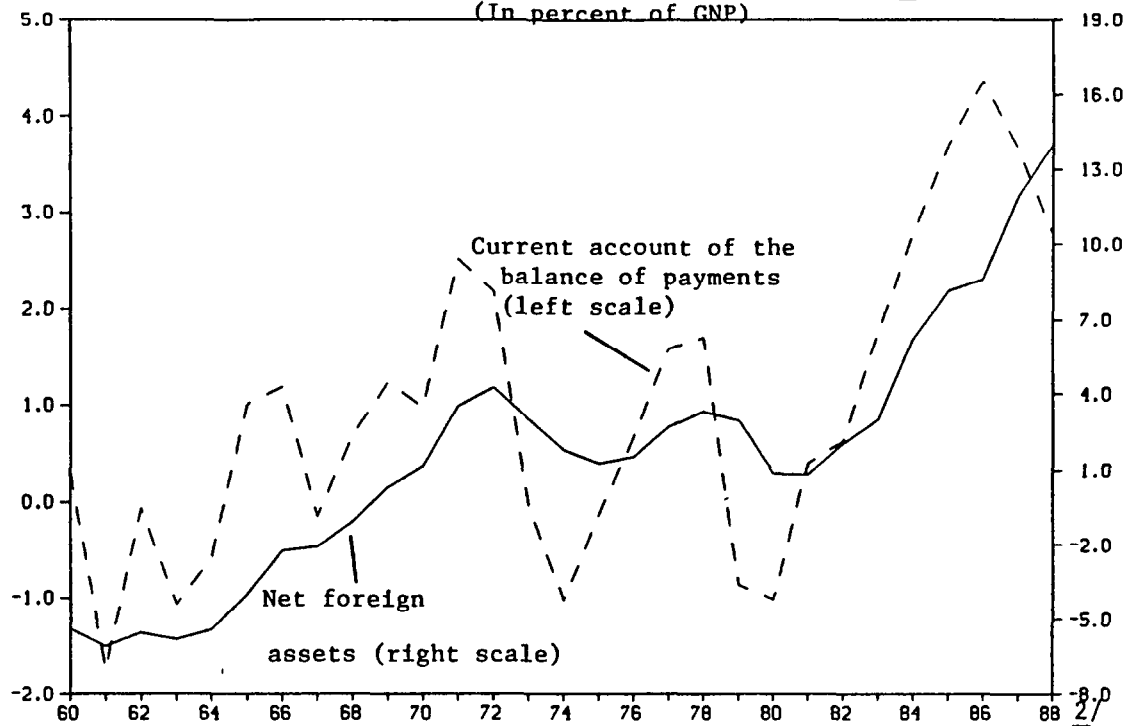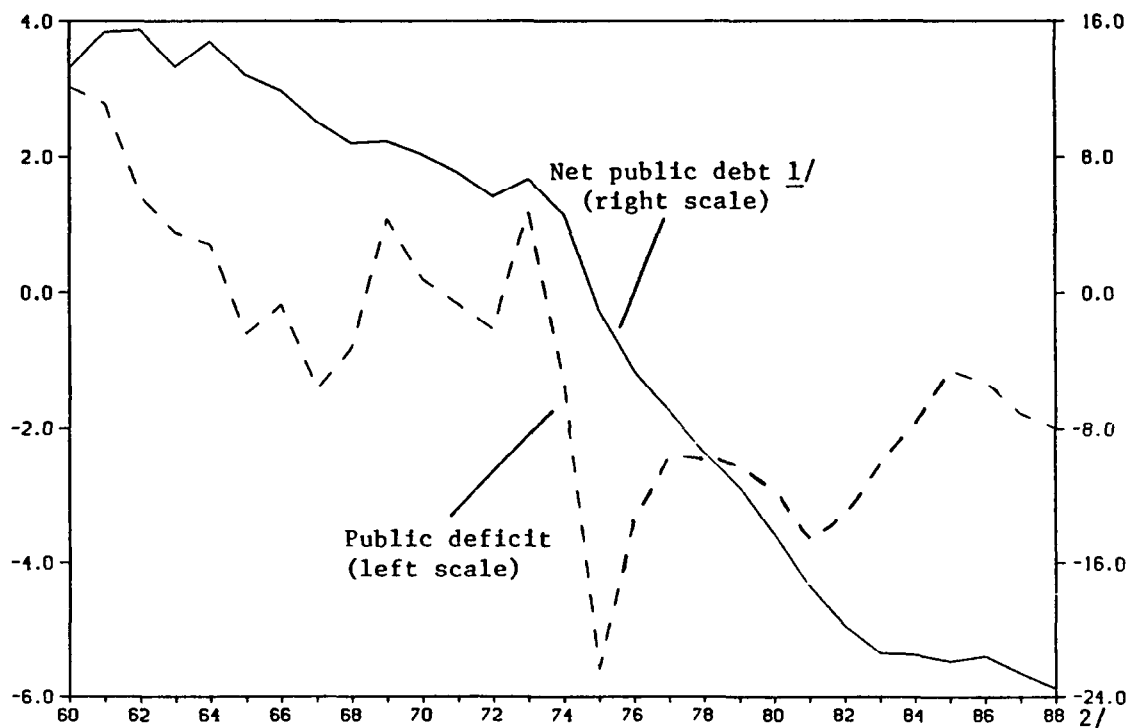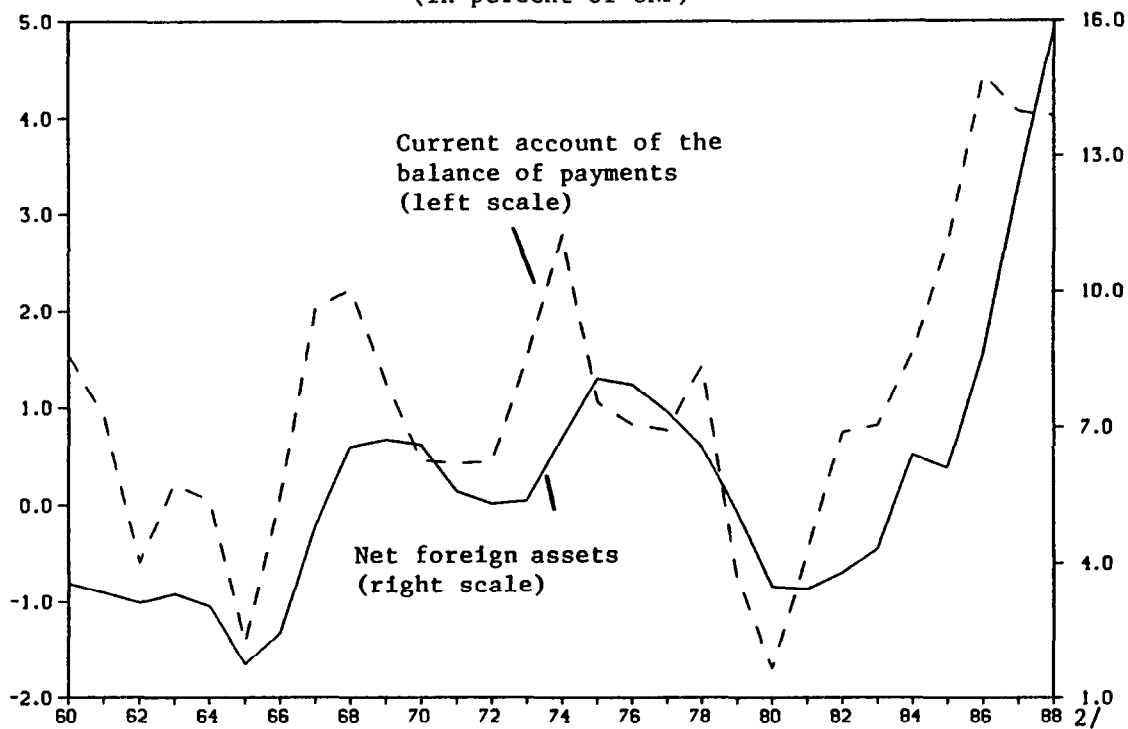been netted out to arrive at net public debt).

   2/ Partly estimated.

stock of savings, or wealth, that has already been accumulated in the past: it is the stock of wealth and not the flow of saving that dictates how much can be consumed in the future. Thus, for instance, a rate of saving that is high by historical standards may nevertheless be considered too low in a situation where wealth has, for whatever reason, fallen below its long-term equilibrium level. The current account offers the opportunity to invest some of the national saving abroad; as discussed below, to do so can be attractive for several reasons. When assessing the adequacy of the current account position it is thus relevant to place it against the background of the stock of the national wealth and its foreign component (net foreign assets).

The persistent external imbalances among the G3 countries during recent years have raised concerns whether a continuation of these imbalances would be sustainable. The question of whether a country's external liability position can be sustained is intimately linked with the issue of whether the country will be able in future to generate the resources necessary to pay the debt service costs implicit in its present external liabilities. Financial pressures may arise if the normally feasible relationship between debt service costs and income is strained. Again, it appears of interest to assess external imbalances with reference to net foreign asset positions. 1/

There are factors other than the stock of wealth that determine the adequacy of the level of saving at any point in time, and the same is true for the current account. First, there are short-run effects; for instance, countries tend to smooth consumption by saving more during the upswing and less during the downswing. Second and related, there is the question of the optimal speed of stock adjustment; when the stock of wealth is too low from a long-term perspective, consumption smoothing may (in the absence of sharp changes in income) nevertheless favor a gradual upward adjustment of saving, spread out over a number of years. Similar arguments can be brought to bear on current account developments. For example, current accounts tend to fluctuate with the economic cycle, and abrupt adjustments of current account imbalances involving non-smooth consumption can be detrimental. 2/

To assess a current account position, it is therefore useful to have an idea of the normal stock of net foreign assets. The remainder of this section examines determinants of long-run net foreign asset equilibrium that have been proposed in the theoretical literature, and

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1/ That is not to say, of course, that the underlying gross
.positions are always irrelevant; for example, sustainability may be
an issue when a large foreign public debt coincides with private
capital flight, even though the overall net foreign asset position
may be small.
   2/ Smoothing arguments can also arise from the production side, for
example in the presence of investment installation costs and learning-
by-doing in production.

some dynamic influences on the current account that are consistent with stability of the equilibrium in the presence of random disturbances.

It must be noted in advance that the distinction between long-run and short-run effects is to some extent arbitrary. Some phenomena characterized in the theoretical section as important only in the short term may in reality influence current account positions over a prolonged period of time; ultimately this is of course an empirical issue.

1.   Long-run net foreign asset equilibrium

Four factors that may influence long-run net foreign asset equilibrium have featured prominently in the literature: international differences in demographic developments, rates of time preference, government debt, and investment opportunities.

A possible dependence of net foreign assets on demographic developments follows from the notion, familiar from life cycle consumption models, that a person's saving tends to vary with age. International differences in demographic characteristics may give rise to differences in saving; if the latter are not matched precisely by differences in investment opportunities, then they will give rise to net international investment and hence to net foreign asset accumulation. However, it is far from obvious on a priori grounds precisely what form the dependence of saving and net foreign assets on demographic factors might take. It may seem plausible that both young and old persons are net dissavers, while persons in the employed labor force save, but there are many institutional and theoretical aspects that can elicit different relationships. A well-known example of an institutional factor that influences the relation between age structure and saving is the financing of pensions in the various countries, in particular, whether public pension schemes are funded or not. Moreover, slow-moving changes in population structure may lead to quite complicated correlations between age structure and national saving (Lee and Lapkoff (1988), van Imhoff and Ritzen (1988)). Masson (1989) analyzed explicitly the relation between demographics and net foreign asset equilibrium in an overlapping generations two-country model where the populations of both countries grow at the same rate but with different (stable) age structures; he concluded that an older population is associated with larger net foreign assets.

Buiter (1981) developed an overlapping generations model with international differences in rates of time preference. Plausibly, it appears that countries with a low rate of time preference tend to be net creditors, providing savings to other nations that place relatively higher value on consumption today than on consumption tomorrow; the same result was derived by Masson (1989).

The possible dependence of net foreign asset positions on relative government debt stocks has been studied in several theoretical contributions. 1/ The studies that incorporate non-neutrality of public debt generally point to a negative relationship: countries with a relatively high public debt tend to be net foreign debtors. 2/ However, some authors have argued that the private sector fully discounts the future tax liabilities implicit in public indebtedness, neutralizing completely the latter's economic effects. In that case there would be no relation between public debt and net foreign assets (see Barro (1989)). 3/ Most of these studies assume that the public debt stocks are exogenous variables. This may be unrealistic; specifically, two possible violations of this assumption immediately come to mind. First, public indebtedness may depend on demographic factors, depending, for example, on whether or not public pensions are to some extent funded. To determine the exogenous influence of public debt on net foreign assets, such dependence would need to be taken into account. Second, an existing relationship between public debt and net foreign assets may be exploited by governments wishing to influence net foreign asset positions; indeed, much of the debate about the external imbalances of the major industrial countries revolves around the question of whether fiscal policies should be adjusted in order to promote external equilibrium. This issue will be discussed separately in Section 2 (iii) below.

International differences in investment opportunities were quoted by Sachs (1982) as a major determinant of current account developments. The most obvious example of a case in which differences in investment opportunities entail long-lasting effects on net foreign asset positions is that of differential stages of growth (Rostow (1960)); in the early stages of development, countries borrow abroad in order to finance the exploitation of their unused resources, while, conversely, in the later stages of development the domestically available investment opportunities become more limited and investment abroad leads to net foreign asset accumulation. Given the relative similarity of the stages of development of the G3 countries, however, the influence of differences in investment opportunities on differences in their long-term net foreign asset positions is less obvious; more precisely, this influence is less easily identified, simply because differences in investment opportunities can arise from a myriad of aspects of these

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1/ For example, Blanchard (1985), Persson (1985), Buiter (1986), Horne et al. (1989), Masson (1989), and Obstfeld (1989).

2/ The negative correlation between public debt and net foreign assets might however diminish at the margin, for example if larger public indebtedness raises uncertainty and makes foreign investors less willing to lend.

3/ These considerations are based on the premise that the public debt indeed carries as a counterpart future tax liabilities; public debt fully counterbalanced by productive public investment would not fall within this category.

economies' supply sides. Moreover, theoretical models that endogenize output and capital formation are complicated and, as yet, relatively rare in this area; recent exceptions include Buiter (1986), Masson and Knight (1986), Bovenberg (1989), and Obstfeld (1989). Assuming that the interest sensitivity of investment exceeds that of saving, Masson and Knight (1986) found that revenue-neutral fiscal investment incentives reducing the domestic user cost of capital have a negative impact on the stock of foreign assets. 1/ The analysis by Bovenberg (1989) of a revenue-neutral shift from capital to labor income taxation is consistent with this result, albeit subject to the proviso that the order of magnitude of the impact on the trade balance (and hence on net foreign assets) is probably quite small.

2. Dynamic adjustment

Having examined some of the main determinants of long-run net foreign asset equilibrium, this section briefly comments on dynamic forces that may be operative in the shorter run; the possible stabilizing influence of government policy is discussed in the next section. Various equilibrating forces have received attention in the literature, the most prominent being the roles of private consumption (e.g., Persson (1985)), and intra-temporal relative prices (exchange rates) and inter-temporal relative prices (interest rates) (e.g., Obstfeld (1989)). The requirement of equilibrium in markets for goods and financial assets tends to entail equilibrating feedback effects from foreign assets onto domestic relative to foreign consumption, interest differentials, and the exchange rate. Perhaps unsurprisingly, however, the dynamic patterns of these feedback effects can be quite complex, leaving the determination of their relative importance in significant part to the realm of empirical research.

A feature often ignored in theoretical contributions is the separate role of uncertainty. It seems plausible that the uncertainty attached by investors to exchange rates and interest rates depends on the magnitude of net (and, possibly, gross) foreign asset positions and the possibility that the latter may spur changes in the behavior of policymakers and others. In turn, such uncertainty itself may affect behavior, especially in financial markets and especially when foreign positions become sizeable in some sense. Feedback through this channel may be stabilizing, but in a potentially disruptive and hence detrimental fashion (see Isard and Stekler (1985) for further discussion).

1/ That is not to say, of course, that investment incentives reduce the total stock of wealth. On the contrary, in the model of Masson and Knight (1986) the boost to investment in the home country produces an increase of its capital stock that more than offsets the fall in net foreign assets, thus raising total wealth. The foreign country experiences a fall in its capital stock and, in spite of higher net foreign assets, also a fall in total wealth.

3. Net foreign asset equilibrium and government policy

The possible role of governments in seeking to correct external imbalances through changes in fiscal policy was discussed recently by the British Chancellor of the Exchequer Lawson (1988). Observing that "private sector behavior is by its nature self-correcting over time," he concluded that normally fiscal policy has no role to play in correcting external imbalances as long as the public budget is not at the root of the external imbalance. 1/ 2/

A similar point had been made earlier by Genberg (1982), who discussed three kinds of distortions which are often mentioned to justify explicit government policy in order to reach an optimum current account path: restrictions on private capital movements, limited access of the private sector to the international capital market, and more complete information available to the government compared to the private sector. Genberg's argument was essentially that governments should aim to remove the distortions rather than target the current account directly. Obviously the argument is valid only as far as it goes; some distortions may be impossible to avoid, and some may be desirable in their own right. Furthermore, Summers (1988) noted that governments may be justified in influencing international capital flows when the social return to domestic investment exceeds that of foreign investment, even when their private returns are equated. This may be the case, as in Genberg (1982), in the presence of distortions (e.g., taxes on domestic investment) or, going back to Keynes (1924), when there is a risk of expropriation of investments made abroad. Similarly, government interventions may be justified if the internationally oriented sectors of the economy exhibit "learning-by-doing" externalities (rendering productivity dependent on lagged output; see, e.g., van Wijnbergen (1984)).

1/ In a subsequent comment, Brittan (1988) made the point that the self-correcting nature of private behavior, as opposed to that of governments, crucially depends on the circumstance that "private borrowers cannot, of their own volition, get out of their debts by inflation or devaluation, whereas governments can." He added that, for that distinction to be valid, there has to be "a clear-cut official exchange rate policy. [...] But without some explicit sterling policy, there is no safeguard against the Government bailing out private as well as official borrowers by at least the passive toleration of depreciation."

2/ Dealing with the requirements for successful international coordination of fiscal policies with an eye to reducing external imbalances of the major industrial countries, Tanzi (1988) emphasized that such international fine-tuning would be hampered by many practical difficulties. His conclusion was similar to that implicit in Lawson's assessment: "the best fiscal policies that countries can pursue are those aimed at putting their houses in order."

Whether governments should target the current account or not, it is clear that many policy actions have repercussions for the external balance. In particular, most models that allow for non-neutrality of fiscal policy show a significant impact of budget deficits, even though their (positive) relation with external deficits may be rather loosely distributed over time; Persson (1985) illustrated that adjustment towards higher external debt implied by a higher public debt can involve an extended period of current account deficits following an initial government budget deficit. Furthermore, as touched upon above, microeconomic policy measures may affect the current account in many different ways (e.g., tax distortions, subsidies, tariff and non-tariff barriers to trade).

III. Empirical Evidence

The most important empirical issues brought up by the discussion in the previous section are the following. First, is it true that international differences in demographic developments, rates of time preference, government debt, and investment opportunities underly differences in long-run net foreign asset positions? Second, what forces tend to affect net foreign asset positions in the short run; are these forces stabilizing; and, in particular, are changes in government deficits normally part of the stabilization process? Empirical insight into these issues might help to place the external imbalances of the G3 countries in a historical perspective, and thus shed light on the possibility that substantial further adjustment is required and that governments have a role to play in this process.

1. Long-run net foreign asset equilibrium

Very little empirical work on the G3 imbalances has focused directly on the determinants and stability of net foreign asset equilibrium. This sub-section first discusses two strands of the empirical literature that have a more tangential bearing on the present issue (the literature on sustainability, and that on the implications of saving/investment correlations for the degree of international capital mobility), and subsequently describes the results of a study that does focus specifically on the G3's net foreign assets.

In two recent papers, Krugman (1985, 1988) examined the implications of the pattern of the U.S. dollar exchange rate and of international interest differentials for the net foreign asset position of the United States, debating whether the external value of the U.S. currency was sustainable. Asking at what level the accumulation of external debt would become infeasible, he argued that limits on debt accumulation could stem from either of two (not necessarily mutually exclusive) situations. First, holdings of U.S. debt could become too large a share of foreign investors' portfolios. Second, foreign

investors could come to regard the United States as too heavily indebted relative to its ability to repay. Isard and Stekler (1985) presented some numerical computations based on the first criterion, translating it into the requirement that the ratio of U.S. net foreign debt to foreign net worth must stabilize at a reasonable level. Preferring to focus on the second criterion, Krugman based his calculations on the requirement that the ratio of the U.S. foreign debt to U.S. GNP must stabilize at a reasonable level. However, these papers did not discuss what might constitute reasonable levels for any of these ratios. Thus no account was taken of any of the possible determinants of normal or long-run equilibrium net foreign assets discussed in the previous section. Instead, inference was based on less specific notions of levels that would be so high as to be obviously infeasible.

In a large number of recent papers it has been debated whether the relatively high correlations between national saving and investment rates in industrial countries observed until the early 1980s indicate a lack of international capital mobility. 1/ 2/ This debate has implications for the subject of this paper because the high correlations seem to imply that forces are at work to maintain a certain equilibrium in net foreign positions. As also touched upon by Tobin (1983), however, it is remarkable that this debate has concentrated entirely on relationships between flow variables without considering explicitly net foreign asset stocks or possible determinants of their long-run equilibrium. Nevertheless, some of the papers provided suggestive evidence of the historical role of fiscal policy in the dynamic adjustment process (see next section).

Horne et al. (1989) used recent developments in the econometric theory of cointegration to test whether, for each of the G3 countries, there exists a long-run relationship between the ratio of net foreign assets to GNP, demographic variables, and the ratio of public debt to GNP; given difficulties of measurement, the influences of international differences in time preference and investment opportunities were not considered explicitly. Stable long-run relationships between the variables taken into consideration were indeed found to have existed during the sample period (most of the postwar era), and to have been of a fairly similar nature across countries. Confirming some of the theoretical notions advanced in the previous sections, the relation between net foreign assets and public debt appeared to be negative, and a relatively older population appeared to correspond to higher net

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1/ These papers include Feldstein and Horioka (1980), Fieleke (1982), Feldstein (1983), Tobin (1983), Dooley, Frankel and Mathieson (1987), Roubini (1988), Tesar (1989), Feldstein and Bacchetta (1989), Frankel (1989), and Bayoumi (1989).

2/ When data for more recent years are included the correlations tend to be smaller (e.g., Frankel (1989)).

foreign assets. 1/ 2/ On the basis of these results it was possible to associate the pattern of net foreign assets up to 1986 (the last year of the sample) depicted in Charts 1-3 with these various influences, suggesting that a large part of the fall in U.S. net foreign assets during the 1980s reflected the rising public debt in the United States while a large part of the increase in the net foreign positions of the other two countries in both cases was due to international differences in demographic developments. 3/ Still, the actual net liability position of the United States in 1986 remained somewhat more sizeable than historical relationships would have suggested, and the same was true for the net asset positions of Japan and Germany.

Given that a myriad of supply-side features may affect long-run net foreign asset equilibrium, it is not obvious how to capture parsimoniously the role of international differences in investment opportunities. Nevertheless, two recent strands in the empirical literature indicate that further work on this issue could be worthwhile. First, without considering explicitly the repercussions for net foreign assets, Lipschitz et al. (1989) and Mayer (1989) presented detailed evidence showing that structural rigidities in the German economy contribute to the size and persistence of Germany's external surplus. Second, also without considering net foreign assets, Hooper (1989a,b) found a significant role in models of U.S. exports and imports for an ad hoc specification of supply influences, with the ratio of the U.S. capital stock to the aggregate capital stock of a group of foreign industrial and developing countries acting as a proxy for longer-run supply shifts resulting from changes in exchange rates.

1/ In the paper, the results for Germany seem to differ significantly from those for the United States and Japan (opposite signs for the demographic variables, and a trend variable that turns out to explain most of the rise in Germany's net foreign assets). But subsequent work indicates that, without the trend, the influence of the demographic variables for Germany becomes very similar to that for the other two countries, even though the role of the public debt variable becomes insignificant.

2/ The specification of the demographic variables is sufficiently general to allow for slow-moving changes in population structure, and the resulting pattern of coefficient estimates reflects some of the features of the theoretical analysis of Van Imhoff and Ritzen (1988). Specifically, a demographic transition consisting of a population growth slowdown due to a fall in the birth rate would entail initially a rise in the national saving rate and subsequently a fall.

3/ Theory would indicate that the public debt and the demographic variables needed to be computed relative to their foreign equivalents; however, for reasons of data availability this was done only for the demographic variables.

2. Dynamic adjustment

For each of the G3 countries, Horne et al. (1989) presented two types of dynamic equations containing feedback mechanisms sustaining the long-run net foreign asset equilibria described above: an equation for the change in the ratio of net foreign assets to GNP (similar to a conventional equation for the current account) and an equation for domestic absorption. Some significant dynamic feedback mechanisms turned out to be the following. First, in accordance with theory, in each of the three countries domestic absorption reacted to past disequilibrium in net foreign assets. Given that the "current account" equation included a large influence of domestic relative to foreign absorption, this constitutes one channel of feedback. Second, feedback from net foreign asset disequilibrium entered the "current account" equation directly and in addition to the real effective exchange rate, suggesting that other influences, such as government measures directly affecting international trade, 1/ may be important as well. Third, the presence of the real exchange rate in the "current account" equation may represent another feedback mechanism, but Horne et al. did not model the exchange rate itself.

All of these dynamic equations passed various tests for the stability of their parameters over time, except that for absorption in the United States. Although the latter passed the parameter stability tests prior to 1982, the equation subsequently dramatically under-predicted U.S. absorption which failed to decline despite, among other things, low (and falling) net foreign assets. Given that the absorption variable included both private and public absorption, it is impossible to tell from these results whether in any of these countries fiscal policy has historically been sensitive to deviations of net foreign assets from equilibrium, or whether the breakdown of the U.S. absorption equation was due to a change in fiscal policy. The breakdown of the historical pattern of overall U.S. absorption after 1982 is however consistent with the finding of Kremers (1989) that at the same point in time there was a significant break in the regular pattern of U.S. Federal deficits, which became exceptionally large compared with the predictions by a model that had explained those deficits well during the entire inter- and post-war period. Some papers from the literature on saving/investment correlations have adduced evidence suggesting that governments have indeed targeted current account developments (in particular, Bayoumi (1989)), but, given the non-structural non-dynamic approach that has hitherto characterized that literature, more research is required before firm conclusions can be drawn.

1/ Not through public absorption, which was already included in the absorption variable, unless the former affected the current account differently.

There is however a large and growing collection of papers on the influence of fiscal deficits on the G3's external imbalances. Some of this literature, namely those papers relying on relatively large-scale multi-country models, was reviewed by Helliwell (1989); analyses based on these models have generally concluded that a large part of the rise in the U.S. current account deficit can be accounted for by fiscal policy differences between the United States and other major industrial countries. 1/ But this does not imply that fiscal policy differences alone are at the root of the pattern of G3 imbalances. For instance, Lipschitz et al. (1989) showed that structural rigidities in the German economy are important factors behind Germany's surplus. 2/ It must be added, as Helliwell did in his review of multi-country models, that these studies do not deal with the question of the sustainability or desirability of net foreign asset positions, "since these depend on the unknown preferences of investors and governments [!]."

IV. Conclusions

This paper reviewed recent developments in research on the role of the stock-flow dynamics of public and foreign deficits and debt accumulation in the context of the interplay between fiscal policies and external imbalances in the United States, Japan, and Germany. It was discussed how an assessment of net foreign asset positions and their determinants can influence the evaluation of current account imbalances, and what empirical issues need to be resolved before this can lead to reliable policy advice.

Some evidence was reviewed indicating that, in equilibrium, net foreign assets depend on international differences in public debt and demographic factors. After a further development and corroboration of these relationships, they will help to interpret the external imbalances in the G3 countries and gauge how much further international adjustment is still required.

As to the form such adjustment might take, and, in particular, the part that might be played by fiscal policies, the conclusion is twofold. First, many studies have found that fiscal policies in the major industrial countries were important factors behind the emergence of the current imbalances. To the extent that these policies themselves are out of equilibrium, a redressment of fiscal imbalances is likely to elicit a reduction of external imbalances. However, at a more general

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1/ For similar conclusions obtained with partial current account models, see e.g. Helkie and Hooper (1988); see also Leibfritz (1988) and Ueda (1988) for similar inferences, the former using a non-econometric approach and the latter employing an empirical two-country saving-investment model for Japan and the United States.

2/ Broader investigations can also be found in Balassa and Noland (1988) and Cline (1989). See furthermore the OECD Economic Outlook and the IMF World Economic Outlook.

level, there is little empirical evidence to date that fiscal
authorities in the past have set their budgets specifically with an eye
to achieving a target path for net foreign assets; more research on this
issue is called for.

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