Prospects for Global Trade Imbalances: A Simulation Approach

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I. Introduction

There is an unusual degree of uncertainty in early 1988 regarding the economic prospects of the major industrial economies. The puzzles in understanding the economic landscape abound. Was the worldwide stock market crash a signal "that something is seriously wrong in the world economy", as an international group of economists has recently maintained, or was it more simply a dramatic correction of speculative excesses of the previous twelve monthes?[1] After all, despite the crash, the U.S. equity markets were slightly higher at the end of 1987 than 1986, and Japanese equities were significantly higher. Also puzzling is the behavior of trade balances and exchange rates. The dollar is now back to its 1980 levels vis-à-vis a basket of competing currencies, and yet the U.S. trade deficit remains at an all-time high. Is a correction "just around the corner", or has there been a more fundamental loss of U.S. competitiveness in recent years that will require yet a further decline in the dollar?

Even the basic mechanics of the exchange markets and trade are the subject of dispute. For several years, leading economists maintained that large budget deficits caused the appreciation of the dollar, by pushing up U.S. interest rates and pulling in capital from abroad. But now, the opposite argument is heard repeatedly, that the dollar is weak and falling

[1] See "Resolving the Global Economic Crisis: After wall street, a statement by thirty-three economists from thirteen countries," Institute for International Economics, Washington D.C., December 1987.

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precisely because the deficits remain large and out of control. A common argument of recent weeks is that only a decisive package of fiscal restraint in the U.S. would be sufficient to *halt* the continuing slide of the dollar. Do large deficits strengthen or weaken the currency? Can these opposing views be reconciled, or at least be assessed for empirical validity?

This paper uses a simulation model of the world economy, as well as other empirical evidence, to assess these alternative arguments, and to prepare some alternative scenarios for the next three to five years. The simulation model is designed to highlight the way that macroeconomic policy choices affect the global economy. We are therefore in a position to evaluate the possible consequences of alternative budgetary policies in the U.S., Japan, and the rest of the OECD (ROECD), as well as alternative financial policies in the Asian NICs and alternative policies vis-à-vis the Latin American debtor countries.

Section II of this paper reviews the patterns of exchange rate and trade balance movements in the 1980s, and describes how alternative policy choices are likely to affect those variables. The basic theme is that the broad movements of the dollar can be understood by reference to the differing macroeconomic policies pursued in the industrialized economies. Section III focuses on two alternative views of the movement of the dollar that have received significant attention recently. Section IV discusses alternative macroeconomic and financial policy measures for reducing trade imbalances, particularly for reducing the trade deficits of the United States. Finally, in Section V we consider three alternative scenarios: the case in which U.S. budget deficits remain large; the case in which the budget deficits are reduced a la Gramm-Rudman; and the case of a "hard-landing" for the dollar.

II. Sources of Global Imbalances

General public opinion makes the fundamental mistake of viewing trade imbalances as a reflection of trade policies and trade distortions, rather than as a reflection of savings and investment behavior usually unrelated

to trade policies. While there may be cases in which a change in trade policies can affect the trade balance (through indirect effects on savings and investment behavior), there is little reason to believe that the growing trade imbalances since the early 1980s has had anything to do with changes in trade policies in this decade.[2] Ample research has stressed several macroeconomic phenomena, rather than trade policies, that adequately account for the large external imbalances shown in Table 1.

We enumerate the following major factors.

(1) The Japanese liberalization of the financial markets in the early 1980s, especially regarding international capital movements, which allowed for the relatively free outflow of Japanese savings to the rest of the world;

(2) The divergent fiscal policies in the OECD countries (i.e. the growth of U.S. fiscal deficits and the reduction of fiscal deficits in Germany and Japan);

(3) The cutoff in lending to the debtor developing countries, which by forcing a reduction in trade deficits in the debtor countries, resulted in a corresponding increase in trade deficits in the rest of the world;

These three factors put principal emphasis on high international capital mobility and divergent fiscal policies. In Sachs and Roubini (1987), a multi-country simulation model was used to assess, however roughly, the quantitative role of these factors in accounting for the trade imbalances in the United States and Japan. For the U.S. trade balance, the Japanese trade balance, and the Yen-Dollar real exchange rate, the effects of the three factors were quantified, with the results reproduced in Table 2. In each case, the actual change records the change of the variable in 1985

[2] A recent study that I have co-authored investigates whether a liberalization of food imports into Japan would reduce the Japanese surplus, by lowering land prices and thereby stimulating housing investment. It turns out that lower land prices could well create a short-run demand boom that reduces the Japanese surpluses. Over time, however, the fall in land prices could reduce Japanese wealth and lead to a rise of savings that eventually *increases* the Japanese external surplus (instead of savings in high-priced land, Japanese households increase their savings in foreign assets). For further details, see Sachs, J. and P. Boone, "Japanese Structural Adjustment and the Balance of Payments," to be presented at the TERC-NBER Conference on Savings, Tokyo, Japan, January 1988.

TABLE 1
CURRENT ACCOUNT IMBALANCES IN THE INDUSTRIAL ECONOMIES

$ billions	1985	1986	1987
Unites States	−116.4	−141.3	−156.0
Japan	49.2	85.8	86.0
Germany	15.1	37.1	44.0
G-7 Countries	−53.0	−19.7	−41.0
Smaller European	6.4	8.0	4.5
Total OECD	−56.6	−22.8	−46.0

Percent of GNP	1985	1986	1987
United States	−2.9	−3.3	−3.5
Japan	3.7	4.4	3.7
Germany	2.4	4.1	3.9
G-7 Countries	−0.7	−0.2	−0.4
Smaller European	0.7	0.6	0.3
Total OECD	−0.6	−0.2	−0.4

Source: *OECD Economic Outlook,* No. 42, December 1987. Note that 1987 is an estimate for the year, as of November 1987.

relative to its value on average during 1978-80. In this period, for example, the Japanese trade balance improved by 3.2 percent of GNP, compared with 2.8 percent predicted by the multi-country model. Of the predicted 2.8 percent accounted for by the model, 1.9 percent of GNP improvement resulted from the Japanese fiscal contraction, 1.4 percent from the U.S. fiscal expansion, 0.3 percent from monetary policies in the various regions, and −0.6 percent of GNP from the cutoff in lending to the LDCs.

The Japanese liberalization of capital movements comes into these estimates indirectly. Sachs and Roubini argue that in the absence of liberalization of international capital movements, the Japanese trade imbalances could not have occurred. The Japanese fiscal contraction, for example, rather than inducing a capital outflow and a trade surplus, would instead have reduced domestic interest rates in Japan, thereby reducing private savings and increasing private investment. The fall in government

TABLE 2
DECOMPOSITION OF CHANGES IN THE EXTERNAL BALANCE AND BILATERAL EXCHANGE RATE OF THE UNITES STATES AND JAPAN

Variable	Actual Change	Predicted Change	Decomposition of Predicted Change				
			Fiscal Policies			LDC Lending	Monetary Policies
			US	J	ROECD		
U.S. Trade Balance	−1.9	−1.8	−1.0	−0.2	−0.0	−0.4	−0.2
Japan Trade Balance	3.2	2.8	1.4	1.9	−0.1	−0.6	0.3
U.S.-Japan Real Exchange Rate	24.0	28.0	11.8	10.6	−0.0	−0.1	6.6

Notes: The "actual changes" measure the 1985 value of the variable compared with the average value of the variable during 1978-80. The trade balance is measured as a percentage of GNP. The real exchange rate measures the percentage change in the relative CPIs of the U.S. and Japan, corrected for changes in the nominal exchange rate. The positive value signifies a real appreciation of the U.S. of 24 percent. The predicted changes come from a simulation of the McKibbin-Sachs model based on changes in fiscal policies in the U.S., Japan (J), and the rest of the OECD (ROECD) of the historically observed magnitudes; and exogenous reduction in lending to the LDCs; and offsetting monetary policies in the industrial countries. For details, see Sachs and Roubini (1987).
Source: Sachs and Roubini (1987).

dissavings would have then been balanced by a rise in private investment net of private savings.

The data in Table 3 provide further support for the view that fiscal policy and capital control regulations were crucial determinants of the external imbalances in recent years. Note that countries with capital controls (e.g. France, Italy) had much smaller improvements in their external balances than did countries with free capital mobility (e.g. the U.K., Germany). This is presumably because countries with free capital mobility were less insulated from the U.S.-induced rise in world interest rates in the early 1980s. That rise in interest rates depressed national investment and raised national savings in countries with free capital mobility, thereby shifting their external balances towards surplus. Countries with capital controls were better insulated from the international interest rate shocks

TABLE 3
A CROSS-COUNTRY COMPARISON OF CHANGES IN EXTERNAL AND BUDGET BALANCES

	Change in: External Balance	Budget Balance
Countries with Free Capital Mobility		
Countries with Shift towards Budget Surplus:		
Germany	3.5	1.4
Japan	5.3	4.1
United Kingdom	1.1	0.7
Countries with Shift towards Budget Deficit:		
Austria	3.5	−2.0
Canada	1.8	−4.9
Netherlands	6.1	−0.6
Countries with Capital Control Restrictions		
Countries with Shift towards Budget Surplus:		
Norway	8.9	10.7
Countries with Shift towards Budget Deficit:		
Australia	−5.8	−1.4
Finland	−1.1	−0.1
France	−0.9	−2.5
Italy	−3.2	−3.7
Sweden	1.1	−2.9

Source: OECD National Income Accounts. The variables are measured as a percent of GNP. The change is measured as the difference of the 1985 and 1980 values. The budget balance is defined as general government savings minus government investment. The external balance is defined as the external financial surplus in the national income accounts.

(since internal interest rates did not have rise in tandem with world rates), and therefore the shift in the savings and investment rates did not occur.

Note also that, *cet. par.,* countries with a larger shift towards fiscal surplus had a larger shift towards external surplus (i.e. the "twin deficits" theory of the U.S. is matched by a "twin surpluses" theory for countries with fiscal improvement, such as Germany and Japan). A simple cross-country regression using the data of Table 3 to relate the change in the external balance, $d(CA)$ to the change in the fiscal balance, $d(FB)$ and

to a dummy variable measuring capital controls ($CC = 0$, free capital mobility; $CC = 1$, capital controls), yields the following results:

$$d(CA) = 3.69 + 0.66\, d(FB) - 3.75\, CC$$
$$\quad (3.6) \quad (2.7) \qquad (3.7)$$

$\bar{R}^2 = .61$ (number in parantheses are t-statistics)

$n = 13$

Note that $d(CA)$ and $d(FB)$ are measured as percent of GNP, as in Table 3.

According to the regression results, countries with no capital controls and no change in fiscal balance tended to have an average improvement in the current account of 3.69 percent of GNP, comparing 1980 and 1986. Countries with capital controls tended to have *no* improvement during the period (3.69 − 3.75). Also, each one percent of GNP improvement in the fiscal balance resulted in an average improvement in the external balance of 0.66 percent of GNP. Thus, on average, *two-thirds of the change in the fiscal balance was reflected in a change in the external balance.* Both theory and simulation results confirm that this trade-off will vary by size of country. In particular, for the U.S., the tradeoff is smaller than two-thirds, on the order of 0.35, while for very small countries, the trade-off will reach 0.75 or 0.80.

The focus on divergent macroeconomic policies in the presence of high capital mobility also helps to account for exchange rate movements, at least during 1978 to early 1987 (we will return to the very recent experience in a moment). Under high capital mobility, we would expect that divergent macroeconomic policies would lead to divergent real interest rates, which in turn would induce international capital flows, and movements in the real exchange rate. In one popular, and empirically successful model of this process, the following relationship should hold (see Hooper and Mann (1987) or Sachs (1985) for further discussion). Let r be the expected real interest rate on a default-free n-year dollar denominated bond, and let r^* be the expected real interest rate on an n-year non-dollar bond. The real interest rates are expressed at annual

rates. Let x be the logarithm of the current real exchange rate, where the real exchange rate is defined as $(EP^*)/P$, where P and P^* are the U.S. and foreign price levels, and E is in units of dollars per unit of foreign currency. Note that a rise in x is then a real depreciation of the dollar. Let x_n^e be the expected value of x in n years. Then, we can derive the following relationship:

$$x_n^e - x = n\ (r - r^*) \tag{1}$$

Equation (1) says that the expected percentage real depreciation between today and year n should equal n times the current real interest rate differential.

Now, suppose that n is large enough (say five to ten years), so that by n years the real exchange rate is expected to back at its equilibrium level, and suppose further, that the expected equilibrium level is a constant, xc. For example, the real exchange rate might return in the long run to a given rate based on purchasing power parity. Then, (1) can be re-written as:

$$x = xc - n\ (r - r^*) \tag{2}$$

Now, suppose that a divergent policy mix between the U.S. and the rest of the world leads to a rise in $r - r^*$ of, say, 6 percentage points (as was the experience between 1978 and 1984), and say that n is 6 years. Then, (2) would predict that the 6 percentage point rise in the interest differential in favor of the U.S. would cause a dollar appreciation of 36 percent.

This view of exchange rates therefore stresses: (1) the importance of *long-term* real interest rate differentials; and (2) the long-term constancy of the real exchange rate. In turn, it is macroeconomic policies that drive the interest rate differential. This simple model does quite well in accounting for the overall pattern of the movement of the dollar in the last decade, as shown in studies by Sachs (1985), Hooper and Mann (1987), and many others. A striking diagramatic confirmation of the basic viewpoint is given in Figure 1, taken from Hooper and Mann. There we see the real interest rate differential of the U.S. and a weighted average of other currencies, and the movement in the real exchange rate of the

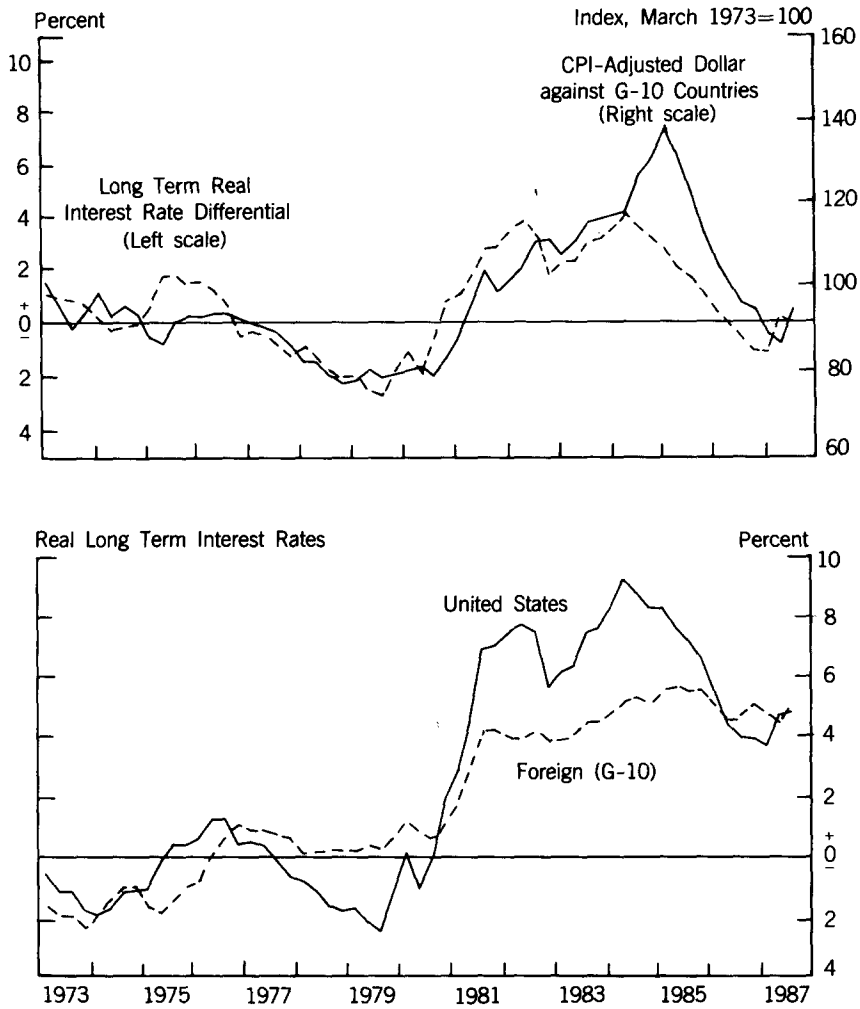

FIGURE 1

THE DOLLAR AND REAL INTEREST RATES (QUARTERLY DATA)

Source: Hooper and Mann (1987), Chart 13, p. 51a. The real exchange rate is a CPI adjusted exchange rate for the non-U.S. G10 countries plus Switzerland. Weighting is according to the share of the country in world trade during 1978-83. The long-term interest rate is a government long-term bond rate minus a 36-month, centered, inflation rate. The long-term interest rate index uses the same weights as the real exchange rate index.

dollar vis-à-vis those other currencies. The scaling is such that each 1 percentage point interest rate differential corresponds to a 6 percent real exchange rate movement ($n=6$). Clearly, the rise in the dollar corresponds with a sharp increase in the real interest differential between 1979 and 1982, while the fall of the dollar corresponds with an elimination of the interest rate differential between 1984 and 1987.

The model is glaringly off track in one historical episode: the sharp rise in the dollar between mid-1984 and early 1985, and the sharp drop between early 1985 and late 1985. This is a brief period for which dollar movements do not seem to be movements in any of the key fundamentals. Thus, many analysts, such as Krugman (1985), and Frankel and Froot (1986) regard this period as a case of a speculative bubble which burst after a few months. We will return soon to the important questions of: (1) whether shifts in the monetary and fiscal mix are sufficient to explain the shifts in the interest rate differentials; and (2) whether the interest rate differential theory can still track the dollar after mid-1987.

The simulation model presented in Sachs and Roubini suggests several policy implications, some of which are discussed here, and others which are taken up in Section 4. The model, which builds fundamentally on the assumption of very high capital mobility, implicitly holds that countries can finance current account deficits for extended periods of time without a financial crisis, despite a significant build-up in debt. The model does not, therefore, predict a "hard landing" for the U.S. economy following a sudden withdrawal of foreign lending, as argued by Marris (1986), but rather a steady build-up of debt, with corrosive longer-term consequences rather than dire short-term consequences. The hard landing, a la Marris, is instead based on the notion of a sudden shift in the terms on which foreigners will lend to the U.S., presumably because foreign portfolios become overfilled with dollar-denominated assets. In the following section, we will consider further the evidence for and against the hard-landing scenario.

Another implication of the simulation model is that a complete reversal of the U.S. fiscal expansion would *not*, by itself, be sufficient to eliminate the

U.S. current account deficits. In the model, as shown in Table 4, a permanent fiscal contraction equal to a cut in spending of 1 percent of GNP results in a cut in the U.S. trade deficit of about 0.34 percent of GNP in the year of the policy change, and causes the U.S. exchange rate vis-à-vis the yen and the ECU (the currency of the "rest of the OECD", ROECD) to appreciate by about 4 percent. (To read the table, note the following conventions. All variables are reported as deviations from an initial baseline. The notation "%" signifies the percentage deviation of the variable from its own baseline value; "%GNP" signifies the deviation measured not in percent of itself, but in percent of potential GNP; *D* signifies absolute change. Since inflation and interest rates are expressed naturally in percentage point units, *D* signifies percentage point deviations from the baseline for these variables.) Thus, even a five-percent of GNP reduction in fiscal spending would reduce the trade deficit only by about 1.8 percent of GNP, or about $75 billion, compared with an overall deficit of about $150 billion.

The reason for the limited effect of radical fiscal surgery is that the U.S. budget deficit is only one of the reasons for the worsening of the U.S. trade position in the first place. We have already noted in Table 2 that the fiscal contraction in Europe and Japan, and the decline in lending to the LDCs, also contributed importantly to the U.S. external deficits. Thus, reversing the U.S. budget deficits would cure only about half of the existing U.S. trade deficits. From the perspective of Europe and especially Japan, the corollary is equally plain. A complete reversal of the U.S. fiscal expansion will not eliminate the large surpluses in those regions, which result not only from U.S. fiscal expansions but from fiscal contractions that these regions have themselves undertaken.

Later on, in Section IV, we will discuss some of the demand management issues which arise from alternative U.S. budget policies in coming years. Assuming, for example, that the U.S. ultimately achieves a Gramm-Rudman-like path of falling deficits, what will be the implications for growth in Germany and Japan? Will offsetting policies (e.g. fiscal expansion) be necessary in order to avoid a recession in the face of U.S. fiscal cuts?

TABLE 4
PERMANENT US FISCAL EXPANSION (1% GNP)

Year		1	2	3	4	5
U.S. Economy						
Output	%	0.37	0.23	0.37	0.34	0.27
Priv Consumption	% GNP	−0.22	−0.07	−0.04	−0.05	−0.10
Priv Investment	% GNP	0.00	−0.16	−0.07	−0.12	−0.15
Govt Consumption	% GNP	1.00	1.00	1.00	1.00	1.00
Exports	% GNP	−0.18	−0.16	−0.15	−0.15	−0.15
Imports	% GNP	0.16	0.13	0.14	0.13	0.12
Imports (quant.)	% GNP	0.23	0.37	0.36	0.34	0.33
Trade Balance	% GNP	−0.34	−0.29	−0.29	−0.28	−0.28
Labour Demand	%	0.52	0.32	0.57	0.54	0.48
Inflation	D	−0.04	−0.26	−0.06	0.03	0.09
Int Rate (sh)	D	0.86	0.44	0.54	0.50	0.52
Int Rate (lg)	D	0.59	0.53	0.50	0.46	0.44
Tobin's Q	%	−3.15	−2.61	−2.62	−2.68	−2.86
Real Exchange Rate						
$/ecu	%	−3.85	−3.15	−2.80	−2.54	−2.42
$/yen	%	−4.20	−3.58	−3.36	−3.27	−3.32
$/can	%	−2.66	−2.23	−2.02	−1.80	−1.67
ROECD Economies						
Output	%	0.07	−0.07	−0.20	−0.33	−0.44
Priv Consumption	% GNP	−0.16	−0.23	−0.30	−0.36	−0.42
Priv Investment	% GNP	−0.13	−0.23	−0.23	−0.26	−0.28
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	014	0.19	0.15	0.12	0.09
Imports	% GNP	−0.04	−0.06	−0.07	−0.08	−0.09
Imports (quant.)	% GNP	−0.23	−0.20	−0.19	−0.18	−0.17
Trade Balance	% GNP	0.27	0.24	0.22	0.19	0.18
Labour Demand	%	0.25	−0.04	−0.14	−0.25	−0.33
Inflation	D	0.29	0.14	0.15	0.13	0.13
Int Rate (sh)	D	0.41	0.33	0.40	0.42	0.48
Japanese Economy						
Output	%	0.03	−0.04	−0.10	−0.15	−0.20
Priv Consumption	% GNP	−0.20	−0.31	−0.38	−0.41	−0.46
Priv Investment	% GNP	−0.14	−0.27	−0.24	−0.25	−0.27
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.17	0.34	0.32	0.31	0.30
Imports	% GNP	−0.02	−0.04	−0.05	−0.05	−0.06
Imports (quant.)	% GNP	−0.20	−0.20	−0.20	−0.21	−0.22
Trade Balance	% GNP	0.39	0.38	0.37	0.36	0.36
Labour Demand	%	0.31	−0.00	−0.00	−0.00	−0.00
Inflation	D	0.28	0.18	0.12	0.07	0.08
Int Rate (sh)	D	0.51	0.41	0.51	0.53	0.58

Source: Sachs and Roubini (1987)

III. Alternative Views on the Decline of the Dollar

The basic outlook just presented takes a somewhat "relaxed" view about the ability of the U.S. to finance its external deficits in coming years, as well as a somewhat optimistic view about future declines in the dollar. It attributes the fall of the dollar since early 1985 *not* to a decline in the willingness of foreigners to finance the deficit, but rather to a declining incentive for them to do so because of a reduction of the interest rate differential in favor of the U.S. Moreover, since dollar real interest rates have declined to the level of foreign real interest rates, the theory holds that there is not likely to be much further real depreciation of the dollar (or, at least, that the market does not expect a further decline).

There are two schools of thought that take a substantially different viewpoint, and predict a further significant decline in the dollar. One school of thought, exemplified by Marris (1986) and Feldstein (1987), holds that foreigners are becoming increasingly reluctant to hold U.S.-dollar denominated claims, and are therefore reducing the private capital inflow into the U.S., with the result of a sharply falling dollar. Another school of thought holds that the U.S. has lost competitiveness in international trade in recent years, so that the long-term equilibrium value of the dollar has fallen sharply. In this view, the dollar will likely have to fall much more to allow the U.S. to return to long-term current account balance. Let us consider these arguments in turn.

A. Risk Premia and the Dollar

In the Feldstein-Marris view, sharply rising interest rates will be needed in order to encourage the requisite flows from abroad, unless the U.S. budget deficit is decisively cut. Without budget cuts, there is likely to be a "hard landing", with a stagflationary rise in interest rates and collapse of the dollar in the Unites States, which in turn induces a recession in the rest of the world.

This viewpoint can be understood in terms of the exchange rate model discussed above. Instead of assuming perfect asset substitutatibility, it is

now assumed that there is a risk premium on U.S.-denominated assets, which is necessary to induce foreigners to hold such assets. Denote the risk premium per period by d. Then, the interest rate differential equals the expected rate of depreciation *plus* the risk premium. An interest rate differential in favor of the dollar signifies the expectation of depreciation of the dollar only when $r - r^* > d$. Equation (2) becomes:

$$x = xc - n\,(r - r^* - d) \tag{3}$$

Now, a rise in the risk premium requires either a depreciation of the dollar (i.e. a rise in x) or a rise in the domestic interest rate. The Marris-Feldstein argument is that the fall of the dollar has occurred because of the rising riskiness of U.S.-denominated assets, which in turn results from the fact that dollar-denominated assets are comprising an increasing share of the portfolios of Japanese investors.

The main problem with this point of view is that the fall of the dollar since early 1985 has been accompanied by a substantial *narrowing* of the interest rate differential, not a widening. If the Marris-Feldstein view were an important explanation of the decline in the dollar *up till mid-1987*, we would not expect the correlation of interest rate differentials and the real exchange rate to be as close as in Figure 1. The dollar should have declined despite a *continuing* differential in favor of the dollar.

IMF data (from the International Financial Statistics) allow us to examine movements in the interest rate differential in favor of the dollar on a monthly basis up to July 1987. The non-U.S. interest rate is a weighted average of interest rates for nine industrial countries, with the weights determined by the share of the countries in the total trade of the group (exports plus imports) in 1980.[3] The real interest rate for each country is calculated simply as the long-term interest rate minus the inflation rate of that month over the same month the previous year. The very recent behavior of the interest rate differential was as follows (U.S. rate minus weighted-average foreign rate):

[3] The countries and weighting are as follows: Austrialia, 0.029; Austria, 0.028; Canada, 0.088; France, 0.158; Germany, 0.247; Italy, 0.119; Japan, 0.086; Netherlands, 0.095; the United Kingdom. 0.150.

1984 (year average)	3.2
1985	2.4
1986	0.2
1987: 1	−0.2
1987: 2	−0.4
1987: 3	−1.0
1987: 4	−0.8
1987: 5	−0.2
1987: 6	−0.4
1987: 7	−0.6

(Source: IFS)

At least through July 1987, there is no evidence that the interest rate differential of the U.S. was increasing, as would be expected by the hypothesis of a rising risk premium.

This is not to say that a rising risk premium on the dollar could not occur in the future. In fact, such a rise in the risk premium might have started in late 1987, though the evidence is still very weak. Japanese portfolios could indeed fill up with dollar-denominated assets, which are — or become — very imperfect substitutes for Yen-denominated assets. A future run of dollar assets along the Feldstein-Marris lines cannot be ruled out on theoretical grounds. Merely, the argument that the dollar has declined in the past two years because foreign investors are shirking the dollar, is weaker to date than its advocates would suggest.

B. The Competitiveness Hypothesis

A different point of view remains agnostic on the risk premium, but holds that the fall of the dollar reflects a reassessment of America's fundamental competitive strength. (This view is discussed in Krugman and Baldwin (1987), among other places.) In this view, the long-term real exchange rate, denoted *xc* in equation (2), is determined by the underlying productivity and thrift of the U.S. economy relative to its competitors. Technological progress in the U.S. causes the long-run real exchange rate to appreciate, as U.S. goods are able to command a price premium in international trade. On the other hand, technical progress abroad causes the long-run exchange rate to depreciate, as U.S. goods must become cheaper relative to foreign goods on a permanent basis in order

to maintain market share. This "competitiveness" theory of the dollar holds that movements in the actual real exchange rate, x, reflect reassessments of xc, rather than shifts in the interest rate differential $r - r^*$, or the risk premium d.

Examining equation (2) or (3), we see that a rise in xc (a depreciation of the long-run exchange rate) would also cause, one-for-one, a depreciation of the current real exchange rate, assuming no change in the interest rate differential. The competitiveness theory might explain why the dollar has recently moved sharply in response to monthly trade balance announcements. When an unexpectedly large trade balance deficit of the U.S. is announced, market participants might reassess their expectations about the long-term equilibrium value of the dollar, assuming that the long-run rate xc must be higher (i.e. more depreciated) than was previously assumed.

Until early 1987, at least, there was little evidence to suggest that market participants had dramatically altered their perception of the long-term value of the dollar. The movements in the dollar were broadly consistent with movements in the real interest rate differentials. Moreover, the developments of the trade balance in the U.S. were broadly consistent with predictions about the evolution of the trade balance as a function of movements of the dollar and relative incomes in the industrialized countries. In other words, given the path of the dollar, and GNPs in the U.S. and abroad, there was little surprising about development of the trade account. (see Bryant (1987), Helkie and Hooper (1987), and Baldwin and Krugman (1987) in support of this view).

The slow improvement of the dollar until early 1987 could be accounted for in terms of the expected lagged responses of trade to exchange rate change, built into traditional econometric equations of import and export demands. More recently, however, the trade equations have indeed begun to move off course, in the sense that they predict a greater improvement in the U.S. trade balance than has so far occurred (see Hooper and Mann (1987) on this point). Therefore, it is possible that some of the very recent decline in the dollar reflects a reassessment of U.S. trade prospects given the unexpected weakness of U.S. exports and

the unexpected continuing strength of U.S. exports and the unexpected continuing strength of U.S. imports. It is much too early to say, however, whether the poor response of the U.S. trade balance is a reflection of permanent structural shifts in the world economy, or simply greater than expected lags in the adjustment process.

In general, it would not be easy empirically to distinguish the risk premium versus competitiveness theories of the dollar. In both cases, the exchange rate moves even though the interest differential remains unchanged. In both cases, bad trade balance "news" might lead to a depreciation: in the risk premium view because of the news that foreign borrowing must remain larger than anticipated, while in the competitiveness view, because assessments of *xc* have changed. The striking fact remains, however, that despite the logical coherence of both alternative points of view, the movements of the dollar at least until very recently have been broadly in line with movements in long-term real interest rates (as in Figure 1), consistent with the ideas that risk premia are small and that the expectations of the long-term equilibrium real exchange rate are stable.

It remains to ask, then, why the interest rate differential narrowed so substantially after 1984. What cause the decline in U.S. real interest rates that in turn caused the sharp fall of the dollar? After all, the rise in the interest rate differential was supposedly caused by the differential fiscal policies in the U.S. and the rest of the industrial countries, *which have not yet been reversed.* How then can we explain the fall in the interest rate differentials?

Here there is indeed something of a puzzle. The best candidates for explanation include: (1) very expansionary monetary policies in the United States in the past two years; (2) a shift in expectations regarding future budget deficits, in accordance with Gramm-Rudman; (3) the decline in the actual budget deficit, by about 1.3 percent of GNP, in 1987; (4) a decline in the incentives for business investment in the U.S. because of tax law changes in 1986; and (5) an overestimate, in 1983 and 1984, of the capacity of the U.S. economy to grow rapidly at high interest rates.

Effects (4) and (5) have not been properly quantified as yet. Therefore, I shall focus some further brief remarks on the shifts in fiscal and monetary policy.

With respect to the shift in fiscal policy expectations, it should be remembered that as recently as mid-1985, the expectation for deficits in later years exceeded $200 billion. In its August 1985 forecast for Fiscal Year (FY) 1987, for example, the Congressional Budget Office projected a deficit of $229 billion. The actual deficit turned out to be $148 billion, just $4 billion above the original Gramm-Rudman target for FY 1987. Thus, between August 1985 and September 1987 (the end of FY 1987), expectations of the budget deficit in 1987 fell by $81 billion, or about 2 percent of GNP!

This shift in fiscal policy expectations is well known. What is less appreciated is that at the same time as the fiscal shift, the Fed began a period of sustained monetary expansion, in support of the policy of driving down the dollar. Consider the following year-over-year rates of growth of base money and M1 in the United States, on a quarterly basis since 1984:

	Base Money	M1
1984: 1	4.0	8.4
1984: 2	6.7	7.5
1984: 3	6.0	6.2
1984: 4	6.3	5.9
1985: 1	8.5	6.7
1985: 2	8.4	8.3
1985: 3	8.9	11.3
1985: 4	9.9	12.4
1986: 1	9.6	11.8
1986: 2	9.5	13.1
1986: 3	10.5	13.4
1986: 4	14.9	16.5
1987: 1	11.6	15.5
1987: 2	8.7	11.8

(Source: IFS)

There is a clear shift towards easier monetary policy at the beginning of 1985, at the same time that the interest rate differential started to narrow. The high money growth continued until early 1987, when it began to slow.

The surprising feature of this strong money expansion, and the accompanying decline in real interest rates and fall of the dollar, is the modest real expansionary effect that resulted. It is true that the economy expanded faster than the underlying steady-state growth during the period, as evidenced by the fact that the unemployment rate continued to fall between 1985 and now. Nonetheless, the actual rate of GNP growth has been modest, more modest than might have been expected in view of the financial market developments.

IV. Policy Actions to Reduce the Imbalances

Let us now suppose that the simulations model can adequately account for the general movements in trade balances, exchange rates, and interest rates, as a function of underlying paths of monetary and fiscal policies in the industrialized countries. What does the model suggest about the efficacy of alternative ways of reducing the trade imbalances in the world economy.

To best understand the model in this regard, it is useful to examine the multipliers for fiscal and monetary policies in the U.S. and Japan. The case of a U.S. fiscal expansion is considered was already considered earlier in Table 4. The Japanese fiscal expansion is examined in Table 5. The effects of U.S. monetary policy are considered in Table 6.

The main lessons about U.S. fiscal policy are twofold. First, a U.S. fiscal expansion of 1 percent of GNP causes a worsening of the U.S. trade balance by about 0.34 percent of GNP. A fiscal contraction would improve the trade balance by about the same amount. With with magnitude of effect, it is clear that a U.S. fiscal contraction alone would not eliminate the U.S. trade deficit, even if fiscal contraction eliminated the full $150 billion budget deficit (the trade improvement would be on the order $55 billion).

TABLE 5
PERMANENT JAPANESE FISCAL EXPANSION (1% GNP)

Year		1	2	3	4	5
U.S. Economy						
Output	%	0.01	−0.02	−0.13	−0.22	−0.29
Priv Consumption	% GNP	−0.02	−0.09	−0.16	−0.22	−0.27
Priv Investment	% GNP	−0.06	−0.08	−0.12	−0.14	−0.15
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.04	0.03	0.02	0.02	0.01
Imports	% GNP	−0.03	−0.03	−0.04	−0.05	−0.05
Imports (quant.)	% GNP	−0.05	−0.12	−0.13	−0.13	−0.13
Trade Balance	% GNP	0.07	0.06	0.06	0.06	0.06
Labour Demand	%	0.01	−0.01	−0.14	−0.22	−0.28
Inflation	D	0.05	0.15	0.12	0.11	0.09
Int Rate (sh)	D	0.01	0.11	0.13	0.19	0.23
Int Rate (lg)	D	0.21	0.21	0.21	0.20	0.19
Tobin's Q	%	−0.76	−1.03	−1.22	−1.39	−1.53
Real Exchange Rate						
$/ecu	%	0.08	0.03	0.02	−0.02	−0.04
$/yen	%	3.93	3.56	3.43	3.22	3.03
$/can	%	0.07	0.06	0.07	0.05	0.03
ROECD Economies						
Output	%	0.04	−0.06	−0.13	−0.19	−0.26
Priv Consumption	% GNP	−0.07	−0.12	−0.17	−0.22	−0.26
Priv Investment	% GNP	−0.06	−0.10	−0.11	−0.13	−0.14
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.05	0.04	0.03	0.03	0.02
Imports	% GNP	−0.02	−0.03	−0.04	−0.04	−0.05
Imports (quant.)	% GNP	−0.12	−0.12	−0.12	−0.13	−0.13
Trade Blance	% GNP	0.07	0.07	0.07	0.07	0.07
Labour Demand	%	0.05	−0.06	−0.12	−0.18	−0.23
Inflation	D	0.13	0.09	0.09	0.09	0.08
Int Rate (sh)	D	0.08	0.09	0.15	0.19	0.23
Japanese Economy						
Output	%	0.38	0.02	−0.00	−0.02	−0.05
Priv Consumption	% GNP	0.08	0.03	−0.04	−0.08	−0.13
Priv Investment	% GNP	0.06	−0.11	−0.09	−0.09	−0.10
Govt Consumption	% GNP	1.00	1.00	1.00	1.00	1.00
Exports	% GNP	−0.35	−0.53	−0.52	−0.51	−0.49
Imports	% GNP	0.09	0.07	0.07	0.06	0.06
Imports (quant.)	% GNP	0.42	0.37	0.36	0.34	0.32
Trade Balance	% GNP	−0.63	−0.60	−0.59	−0.57	−0.55
Labour Demand	%	0.24	0.00	0.00	0.00	0.00
Inflation	D	−0.33	0.09	0.09	0.06	0.05
Int Rate (sh)	D	0.38	0.20	0.28	0.32	0.35

Source: Sachs and Roubini (1987)

TABLE 6
PERMANENT US MONETARY EXPANSION (1%)

Year		1	2	3	4	5
U.S. Economy						
Output	%	0.73	0.45	0.34	0.24	0.17
Priv Consumption	% GNP	0.41	0.33	0.23	0.17	0.12
Priv Investment	% GNP	0.31	0.03	0.04	0.02	0.01
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.06	0.05	0.04	0.03	0.02
Imports	% GNP	0.06	0.03	0.02	0.02	0.01
Imports (quant.)	% GNP	0.05	−0.05	−0.03	−0.02	−0.01
Trade Balance	% GNP	−0.00	0.02	0.01	0.01	0.01
Labour Demand	%	1.00	0.52	0.36	0.22	0.12
Inflation	D	0.28	0.20	0.15	0.10	0.08
Int Rate (sh)	D	−0.00	−0.25	−0.15	−0.12	−0.08
Int Rate (lg)	D	−0.04	−0.04	−0.03	−0.02	−0.01
Tobin's Q	%	0.95	0.78	0.47	0.28	0.15
Real Exchange Rate						
$/ecu	%	1.01	0.89	0.57	0.37	0.24
$/yen	%	1.06	0.94	0.64	0.45	0.31
$/can	%	1.00	0.83	0.55	0.35	0.21
ROECD Economies						
Output	%	0.00	−0.00	0.03	0.04	0.03
Priv Consumption	% GNP	0.02	0.04	0.04	0.04	0.02
Priv Investment	% GNP	0.01	0.02	0.02	0.01	0.01
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.02	−0.03	−0.01	0.00	0.01
Imports	% GNP	0.00	0.01	0.01	0.01	0.00
Imports (quant.)	% GNP	0.04	0.04	0.03	0.02	0.01
Trade Balance	% GNP	−0.01	−0.03	−0.01	−0.00	0.01
Labour Demand	%	−0.04	−0.01	0.03	0.03	0.02
Inflation	D	−0.05	−0.04	0.00	0.01	0.02
Int Rate (sh)	D	−0.06	−0.10	−0.07	−0.05	−0.04
Japanese Economy						
Output	%	0.03	0.00	0.01	0.01	0.01
Priv Consumption	% GNP	0.02	0.05	0.04	0.03	0.03
Priv Investment	% GNP	0.01	0.02	0.01	0.01	0.00
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.04	−0.04	−0.02	−0.01	−0.00
Imports	% GNP	0.00	0.01	0.00	0.00	0.00
Imports (quant.)	% GNP	0.03	0.04	0.02	0.02	0.01
Trade Balance	% GNP	−0.02	−0.05	−0.03	−0.02	−0.01
Labour Demand	%	−0.04	0.00	0.00	0.00	0.00
Inflation	D	−0.04	−0.05	0.02	0.02	0.01
Int Rate (sh)	D	−0.07	−0.09	−0.07	−0.05	−0.03

Source: Sachs and Roubini (1987)

Second, and perhaps somewhat unexpected, the fiscal contraction would not have a sharply depressing effect on real incomes in the ROECD or Japan, which is perhaps surprising in view of the conventional view that a U.S. fiscal contraction will be sharply contractionary for the rest of the world. The key point in this regard is as follows. The U.S. fiscal contraction reduces exports abroad, but it also lowers world interest rates. Thus, foreign exports tend to go down, but foreign interest-sensitive demand (e.g. investment demand) tends to go up. As explained in Sachs and Roubini, it is theoretically ambiguous whether the contractionary or expansionary force dominates, with the outcome depending on the nature of wage setting, the elasticities of substitution in trade, and several other parameters. In the simulation model, the net effect of a U.S. fiscal policy contraction are slightly depressing on foreign output in the first year, but are expansionary thereafter.

Note also that a U.S. fiscal expansion of 1 percent of U.S. GNP cause the Japanese trade balance to improve by 0.39 percent of Japanese GNP. A U.S. fiscal contraction would have the same size effect in reducing the Japanese surplus. It is evident quantitatively that a reduction of the U.S. budget deficit even as large as 4 percent of GNP would not eliminate more than a third of the Japanese trade surplus.

The case of a Japanese fiscal expansion are considered in Table 5. Here again there are two strong lessons. First, a Japanese fiscal expansion would powerfully reduce the Japanese external surplus (by 0.7 percent of GNP for each 1 percent rise in fiscal expenditure), but it would take a fiscal expansion of several percent of GNP in order to eliminate most of the Japanese trade surplus. As in the U.S. example, the Japanese fiscal expansion is estimated to cause a Yen appreciation, in this case of about 3.9 percent on impact. The second point is that the Japanese fiscal expansion, unless extremely large, would do very little to change U.S. GNP or the U.S. external deficit. A Japanese fiscal expansion would actually *lower* U.S. output after the first year, according to the model. Moreover, each 1 percent of GNP expansion in Japanese fiscal expenditure would result in a U.S. trade balance improvement of only 0.07 percent of U.S. GNP, or about $3 billion. Obviously, *the solution to*

the U.S. trade imbalance will not be found mainly in a Japanese fiscal expansion.

The U.S. monetary expansion, shown in Table 6, is similarly surprising in its international implications. Here, the received theory is that a U.S. monetary expansion would cause a dollar depreciation, and thereby weaken foreign output. But this standard view, from the Mundell-Fleming model, gives insufficient weight to the fact that the U.S. monetary expansion also reduces world interest rates, which helps to stimulate foreign demand. Thus, on a theoretical level, a U.S. monetary expansion has ambiguous effects on foreign income. According to the simulation model, a U.S. monetary expansion has almost no effect on foreign output in the ROECD or Japan.

Even more surprising perhaps is the result shown in Table 6 that a U.S. monetary expansion has almost no effect on the U.S. trade balance, despite the effect of causing a real depreciation of the dollar. On the one hand, the dollar depreciation tends to improve the trade balance. On the other hand, the monetary expansion, by lowering domestic interest rates, also tends to raise domestic demand, and therefore imports. Since both domestic spending and export demand rise after a monetary expansion, the net effect on the trade balance is ambiguous. And in the simulation exercises, the effect of monetary policy on the trade balance is negligible.

The inability of a monetary expansion to improve the trade balance has an important implication for policy. An attempt to use easy monetary policy in the U.S. in order to drive down the dollar and "thereby" improve the U.S. trade account, is futile. A monetary expansion aimed at driving down the dollar will so much increase domestic demand as to leave the U.S. trade balance virtually unchanged. Only fiscal policy is effective in altering the trade balance.

When these implications of monetary and fiscal policy are combined, we can examine the effects of a Gramm-Rudman type policy in the U.S. on global growth and trade imbalances. Suppose that the U.S. sticks with the timetable for deficit reduction, and that the Fed eases U.S. monetary policy sufficiently to keep output growth at its potential growth rate during the adjustment process. The simulation results for such a policy path are

shown in Table 7, taken from Sachs and Roubini.[4] In the simulation exercise, the U.S. cuts the budget deficit by about one-half percent of GNP in each year between 1986 and 1992. There are two important conclusions. First, even a strict adherence to Gramm-Rudman would leave much of the U.S. trade imbalances intact after the completion of the deficit reduction. Second, the policy of tight fiscal policy and monetary ease would be mildly *stimulative* abroad, not contractionary as is often feared.[5]

A. Other Policy Actions to Reduce Global Imbalances

We have noted that a fiscal expansion in Japan would reduce Japan's external deficit by about 0.7 times the size of the fiscal expansion. However, even a fairly large change in Japanese fiscal expenditures would have modest effects on the U.S. trade deficit. Are there policy measures abroad that could have a singificant effect? In this subsection, we consider two alternatives to a Japanese fiscal expansion. First, we study a Japanese policy proposal in which Japanese savings are channeled to the Latin American debtor countries. Second, we examine the implications of a spending increase by the Asian newly industrialized countries (especially Hong Kong, Korea, Singapore, and Taiwan) that are currently run significant current account surpluses.

In the past year, the idea has been advanced (e.g. by WIDER (1987)) to channel a portion of the Japanese financial surplus to the Latin American debtor countries, who are desperately in need of additional foreign finance. The Japanese government has committed to undertake such a policy, but the details of the Japanese government actions, as well as the scope of the program, remain vague. In Table 8, we provide a quantitative assessment of such a program, where we assume that Japanese govern-

[4] This particular simulation also allows for some effect (rather small) of the fall in oil prices after 1986.

[5] Marris argues, for example, that Japan and Europe should undertake a fiscal expansion to offset the fiscal contraction of the United States: "Europe and Japan have not yet taken expansionary fiscal policy action on the scale needed to offset the inevitable negative drag on their growth as the U.S. trade deficit is eliminated." in Marris, S. "Deficits and the Dollar Revisited" Institute for International Economics, August 1987, p. 39.

TABLE 7

1986-1990 SCENARIO; GRAMM-RUDMAN AND OIL PRICE FALL WITH MONEY STABILIZING EMPLOYMENT

Year		1986	1987	1988	1989	1990
U.S. Economy						
Output	%	−0.71	−0.62	−0.49	−0.33	−0.12
Priv Consumption	% GNP	−1.27	−1.56	−1.52	−1.47	−1.31
Priv Investment	% GNP	0.36	0.50	0.74	0.95	1.13
Govt Consumption	% GNP	0.00	−0.65	−1.35	−1.80	−2.25
Exports	% GNP	0.50	0.67	0.87	1.02	1.15
Imports	% GNP	0.15	0.07	−0.03	−0.08	−0.12
Imports (quant.)	% GNP	0.30	−0.42	−0.76	−0.98	−1.16
Trade Balance	% GNP	0.35	0.60	0.90	1.10	1.27
Labour Demand	%	−0.05	−0.05	−0.05	−0.05	−0.05
Inflation	D	−0.37	0.43	0.70	0.77	0.74
Int Rate (sh)	D	3.47	2.95	1.25	0.35	−1.03
Int Rate (lg)	D	−2.06	−2.31	−2.52	−2.60	−2.62
Tobin's Q	%	3.71	7.65	11.56	14.36	16.84
Real Exchange Rate						
$/ecu	%	9.05	11.76	14.87	16.92	18.62
$/yen	%	8.47	11.12	14.34	16.51	18.38
$/can	%	4.58	6.38	8.54	9.95	11.20
ROECD Economies						
Output	%	−0.11	−0.00	0.26	0.53	0.81
Priv Consumption	% GNP	0.38	1.11	1.53	1.85	2.13
Priv Investment	% GNP	1.21	1.15	1.27	1.36	1.44
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.11	−0.24	−0.33	−0.33	−0.32
Imports	% GNP	0.59	0.67	0.73	0.78	0.83
Imports (quant.)	% GNP	1.81	2.01	2.21	2.34	2.45
Trade Balance	% GNP	−0.69	−0.91	−1.06	−1.12	−1.15
Labour Demand	%	0.02	0.02	0.02	0.02	0.02
Inflation	D	−1.74	−2.64	−3.48	−4.20	−4.89
Int Rate (sh)	D	−1.66	−4.08	−5.60	−6.83	−8.00
Japanese Economy						
Output	%	0.43	0.29	0.56	0.84	1.12
Priv Consumption	% GNP	0.90	1.65	2.11	2.48	2.84
Priv Investment	% GNP	1.32	1.18	1.32	1.42	1.51
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.05	−0.56	−0.74	−0.83	−0.89
Imports	% GNP	0.40	0.44	0.49	0.53	0.57
Imports (quant.)	% GNP	1.85	1.98	2.13	2.25	2.34
Trade Balance	% GNP	−0.73	−1.01	−1.23	−1.36	−1.46
Labour Demand	%	0.11	0.00	0.00	0.00	0.00
Inflation	D	−1.76	−0.02	−0.04	−0.05	−0.06
Int Rate (sh)	D	0.97	−0.78	−1.58	−2.19	−2.81

Source: Sachs and Roubini (1987)

TABLE 8

PERMANENT $10 BILLION INCREASE IN JAPANESE CAPITAL FLOWS TO LATIN AMERICA

Year		1986	1987	1988	1989	1990
U.S. Economy						
Output(Nat. Acc.)	%	0.03	−0.00	−0.05	−0.10	−0.15
Priv Consumption	% GNP	−0.01	−0.04	−0.07	−0.11	−0.14
Priv Investment	% GNP	−0.04	−0.06	−0.08	−0.09	−0.10
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.06	0.05	0.05	0.04	0.04
Imports	% GNP	−0.02	−0.02	−0.02	−0.03	−0.03
Imports (quant.)	% GNP	−0.03	−0.05	−0.05	−0.05	−0.05
Trade Balance	% GNP	0.07	0.07	0.07	0.07	0.07
Labour Demand	%	0.03	−0.01	−0.06	−0.10	−0.13
Inflation	D	0.04	0.07	0.06	0.06	0.06
Int Rate (sh)	D	0.05	0.08	0.10	0.13	0.16
Int Rate (lg)	D	0.16	0.16	0.15	0.14	0.14
Tobin's Q	%	−0.60	−0.72	−0.83	−0.93	−1.02
Real Exchange Rate						
$/ecu	%	0.48	0.44	0.43	0.42	0.41
$/yen	%	0.30	0.23	0.20	0.16	0.12
$/can	%	0.13	0.09	0.09	0.07	0.06
ROECD Economies						
Output(Nat. Acc.)	%	0.06	0.01	−0.01	−0.05	−0.10
Priv Consumption	% GNP	−0.03	−0.03	−0.05	−0.08	−0.10
Priv Investment	% GNP	−0.03	−0.05	−0.06	−0.08	−0.09
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.12	0.10	0.09	0.09	0.08
Imports	% GNP	−0.01	−0.01	−0.01	−0.02	−0.02
Imports (quant.)	% GNP	0.00	−0.00	−0.01	−0.01	−0.01
Trade Balance	% GNP	0.11	0.11	0.11	0.11	0.10
Labour Demand	%	0.06	0.03	0.01	−0.03	−0.07
Inflation	D	0.01	0.03	0.05	0.05	0.06
Int Rate (sh)	D	0.09	0.08	0.11	0.14	0.17
Japanese Economy						
Output(Nat. Acc.)	%	0.10	0.03	0.01	0.00	−0.01
Priv Consumption	% GNP	−0.03	−0.05	−0.07	−0.08	−0.10
Priv Investment	% GNP	−0.03	−0.07	−0.07	−0.07	−0.08
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.13	0.11	0.11	0.12	0.12
Imports	% GNP	−0.00	−0.01	−0.01	−0.01	−0.02
Imports (quant.)	% GNP	−0.03	−0.03	−0.04	−0.04	−0.05
Trade Balance	% GNP	0.12	0.12	0.13	0.13	0.13
Labour Demand	%	0.08	−0.00	−0.00	−0.00	−0.00
Inflation	D	0.02	0.05	0.04	0.03	0.03
Int Rate (sh)	D	0.13	0.10	0.14	0.17	0.20

ment guarantees are put in place in order to encourage an additional $10 billion of Japanese finance to go to the Latin debtor countries during each of three years.

In an economic sense, an additional $10 billion of lending to Latin America by Japan has approximately the same effect on the U.S. trade deficit as would an additional $10 billion of Japanese government spending. In other words, the lending to Latin America would finance a fiscal expansion (albeit by Latin American governments) in the same way as a direct bond-financed increase in Japanese government expenditure. Indeed, the improvement in the U.S. trade imbalance might even be greater with an increase in lending to Latin America than with a Japanese fiscal expansion, since the marginal propensity of Latin America to import from the U.S. is almost surely higher than the corresponding marginal propensity to import U.S. goods of the Japanese government. In the case of lending to Latin America, the U.S. trade balance improvement comes at the expense of the Latin American economies, which run a larger trade deficit; in the case of a Japanese fiscal expansion, the U.S. trade improvement comes at the expense of a reduction of the Japanese trade surplus.

A second way to improve the U.S. trade balance that has received considerable recent attention would be through a demand expansion in the East Asian NICs. U.S. policymakers have begun to complain publicly and insistently about the trade surpluses of the Asian NICs, which now total about $30 billion per year. Without going into detail on the merits of the U.S. complaints, it is worth asking about the macroeconomic consequences of a demand expansion in East Asia.[6] The results of a $10

[6] I have grave doubts about the wisdom of U.S. pressure on the East Asian economies to undertake a demand expansion for the sake of reducing global imbalances. The East Asian economies are too small, too poor, and politically too unstable to be called upon to alter their policies for the sake of the rest of the world. This is especially the case since: (1) South Korea remains a major debtor country, with all of the attendant risks; (2) Hong Kong and Singapore are not running large current account surpluses at this time; (3) the trade surpluses of South Korea and Taiwan reflect enormously high savings rates, not low domestic investment rates; and (4) these economies have been tremendously successful with their current strategies, which should therefore not be lightly abandoned in order to satisfy the short-term needs of a U.S. Administration that is mismanaging its own fiscal policies.

billion dollar reduction of the the East Asian surpluses are shown in Table 9. We see that the U.S. current account is estimated to improve by a mere $3.6 billion. Thus, even if the East Asian economies completely eliminated their surpluses — requiring a dramatic change in policy — the effect on the U.S. current account deficit would be on the order of $11 billion, a rather modest sum in view of the current U.S. deficit of about $150 billion.

V. Three Scenarios for the Coming Years

We conclude with a discussion of three alternative scenarios for developments in the next few years. The first assumes little continuing improvement in the U.S. fiscal position, but smooth financing of the continuing U.S. external deficits. The second scenario assumes a further reduction in U.S. budget deficits, again with smooth financing of the external deficits. The third scenarios discusses the implications of a hard landing, in which there is a marked rise in the risk premium demanded on U.S. securities.

A. Continuing U.S. Fiscal Deficits

What are the implications of several years of continued U.S. fiscal deficits in the range of 3-4 percent of U.S. GNP? Rather than attempting a formal quantitative assessment, let us consider some of the qualitative ramifications of continued deficits, in light of our earlier discussion.

The big risk, in my view, is not the problem of a hard landing, but rather the problem of a resurgence of inflation. We have seen that much of the decline of the dollar since early 1985 has resulted from monetary ease combined with the expectation of continuing improvement in the fiscal situation. The result has been a sharp decline in real interest rates and in the real exchange rate, but so far with no sharp improvement in net exports. Indeed, standard export and import demand equations are predicting significantly greater responses in exports and imports than have so far occurred.

Suppose that export response starts to pick up, to catch up with the

TABLE 9
PERMANENT $10 BILLION DECREASE IN THE CURRENT ACCOUNT SURPLUS OF ASIAN DEVELOPING COUNTRIES

Year		1986	1987	1988	1989	1990
U.S. Economy						
Output(Nat. Acc.)	%	0.05	−0.00	−0.04	−0.09	−0.14
Priv Consumption	% GNP	−0.03	−0.06	−0.09	−0.12	−0.15
Priv Investment	% GNP	−0.04	−0.06	−0.07	−0.09	−0.10
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.09	0.08	0.08	0.07	0.07
Imports	% GNP	−0.01	−0.02	−0.02	−0.03	−0.03
Imports (quant.)	% GNP	−0.02	−0.03	−0.04	−0.04	−0.04
Trade Balance	% GNP	0.10	0.10	0.10	0.10	0.10
Labour Demand	%	0.07	0.01	−0.03	−0.07	−0.11
Inflation	D	0.04	0.05	0.06	0.06	0.06
Int Rate (sh)	D	0.11	0.10	0.13	0.15	0.17
Int Rate (lg)	D	0.17	0.17	0.16	0.15	0.14
Tobin's Q	%	−0.72	−0.79	−0.88	−0.96	−1.05
Exchange Rate						
$/ecu	%	0.21	0.22	0.24	0.26	0.27
$/yen	%	0.07	0.03	0.03	0.01	−0.02
$/can	%	0.02	0.05	0.08	0.11	0.13
ROECD Economies						
Output(Nat. Acc.)	%	0.04	0.00	−0.03	−0.06	−0.10
Priv Consumption	% GNP	−0.03	−0.04	−0.06	−0.07	−0.10
Priv Investment	% GNP	−0.04	−0.06	−0.06	−0.07	−0.08
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.10	0.09	0.08	0.07	0.06
Imports	% GNP	−0.01	−0.01	−0.01	−0.02	−0.02
Imports (quant.)	% GNP	−0.01	−0.01	−0.01	−0.02	−0.02
Trade Balance	% GNP	0.10	0.10	0.09	0.09	0.08
Labour Demand	%	0.06	0.02	−0.00	−0.03	−0.06
Inflation	D	0.03	0.03	0.04	0.05	0.05
Int Rate (sh)	D	0.09	0.09	0.11	0.14	0.16
Japanese Economy						
Output(Nat. Acc.)	%	0.10	0.02	0.01	−0.00	−0.01
Priv Consumption	% GNP	−0.03	−0.06	−0.08	−0.09	−0.10
Priv Investment	% GNP	−0.03	−0.07	−0.07	−0.07	−0.08
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.13	0.12	0.11	0.11	0.11
Imports	% GNP	−0.00	−0.01	−0.01	−0.01	−0.01
Imports (quant.)	% GNP	−0.03	−0.03	−0.04	−0.04	−0.05
Trade Balance	% GNP	0.13	0.13	0.13	0.13	0.13
Labour Demand	%	0.09	−0.00	−0.00	−0.00	−0.00
Inflation	D	0.02	0.05	0.04	0.03	0.03
Int Rate (sh)	D	0.14	0.11	0.15	0.17	0.19

estimates of the trade equations. In conditions of high unemployment, the result would be a salutary increase in output and employment, at the same time that the U.S. trade balance improves. The U.S. economy is already operating near full employment and full capacity, however. In present circumstances, a rise in export demand will begin to generate increases in prices, rather than a sustained rise in output, unless fiscal policy tightens further. It could well turn out that the Fed has to reverse some of the monetary ease of the past two years in order to restrain inflation if an export surge in fact develops, unless further progress is made in deficit reduction.

In this regard, the recent *stock market decline* might prove to be of substantial benefit to the adjustment process in the United States. If private consumption spending falls in response to the decline in equity values, resources would be freed for the necessary expansion of net exports. In other words, the stock market decline could play the role that should also be coming from fiscal contraction: the decline in spending, induced by the fall in the stock market, would leave room for a significant rise in exports.

Unless private savings rises quite sharply (an unlikely event, even with the fall in the stock market), continuing large budget deficits would almost surely mean continuing large external deficits. I have argued earlier that the evidence suggests that these deficits can continue to be financed from abroad without a sharp rise in interest costs. The costs of the continued heavy borrowing, in this view, is not a hard landing (though the risks are certainly present), but the corrosive long-term effects of a large stock of debt to the rest of the world.

Thus, the main results of the do-nothing scenario are: (1) risks of higher inflation, as the drop in the dollar of the past two years passes through to export demand; (2) a continuing rapid buildup of foreign debt, as foreigners continue to finance the large external deficits of the U.S. The best hope for the economy *in the case of little fiscal improvement* would be for a moderate drop in private consumption, perhaps due to the stock market crash, in order to free up domestic resources for an increase in net exports.

B. A Continuation of Gramm-Rudman Type Budget Cuts

We have already noted the essential points of budget cuts on the scale of Gramm-Rudman. According to Table 7, we noted that Gramm-Rudman budget cuts, with offsetting monetary ease, would eliminate about one half of the U.S. trade imbalances. Importantly, the policy mix of tight fiscal policy and easy monetary policy would not appear to be highly deflationary for the rest of the world, as is often feared. Indeed, in the present simulation model, the decline in world interest rates would be sufficient to counterbalance in foreign regions the direct contractionary aggregate demand effects usually associated with cuts in government expenditures.

C. The Hard-Landing Scenario

Final case to examine is that of a "hard landing", defined to be a situation in which the risk premium on U.S.-denominated assets rises sharply. It is likely that such a shift in portoflio preferences would be felt as a stagflationary shock in the U.S. How large would such a shock be, and what would be the likely implications for countries other than the United States?

To examine this question, we shock the simulation model by introducing a permanent risk premium on U.S.-denominated assets of three percentage points per year, with the results shown in Table 10. The simulation assumes that the central banks in the U.S., Japan, and the ROECD react by pursuing monetary policy to stabilize employment in each of the regions.

The result of the policy is not a cataclysm for the world economy, but a shift of investment from the U.S. to the other industrialized countries. In the U.S., interest rates rise, and the dollar depreciates by about 10 percent in real terms. The fall of the dollar induces a rise in inflation of a bit more than 1 percentage point per year. The stock market (measured by Tobin's q, the ratio of equity prices to the replacement cost of capital) falls by about 6 percent. Investment falls and savings increase, with the increase in savings resulting from the decline in financial wealth of house-

TABLE 10

1986-1990 SCENARIO: PERMANENT RISE IN THE RISK PREMIUM ON DOLLAR ASSETS (OF 1%) AND MONEY STABILIZING EMPLOYMENT

Year		1986	1987	1988	1989	1990
U.S. Economy						
Output(Nat. Acc.)	%	−0.01	−0.14	−0.26	−0.36	−0.46
Priv Consumption	% GNP	−0.41	−0.91	−0.94	−0.97	−0.99
Priv Investment	% GNP	−0.54	−0.52	−0.53	−0.53	−0.53
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	0.47	0.40	0.37	0.35	0.32
Imports	% GNP	−0.30	−0.28	−0.27	−0.27	−0.26
Imports (quant.)	% GNP	−0.47	−0.89	−0.84	−0.78	−0.73
Trade Balance	% GNP	0.77	0.67	0.65	0.62	0.59
Labour Demand	%	−0.01	−0.01	−0.01	−0.00	−0.00
Inflation	D	0.42	1.12	1.20	1.26	1.32
Int Rate (sh)	D	1.12	2.40	2.51	2.62	2.71
Int Rate (lg)	D	2.06	1.98	1.81	1.65	1.50
Tobin's Q	%	−6.11	−7.07	−6.95	−6.84	−6.72
Real Exchange Rate						
$/ecu	%	9.96	8.41	7.73	7.07	6.44
$/yen	%	9.70	8.16	7.53	6.91	6.32
$/can	%	6.70	5.23	4.64	4.08	3.56
ROECD Economies						
Output(Nat. Acc.)	%	0.27	0.14	0.23	0.31	0.39
Priv Consumption	% GNP	0.70	0.74	0.74	0.74	0.74
Priv Investment	% GNP	0.49	0.43	0.43	0.42	0.41
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	−0.27	−0.47	−0.41	−0.35	−0.30
Imports	% GNP	0.16	0.15	0.15	0.15	0.15
Imports (quant.)	% GNP	0.65	0.57	0.53	0.50	0.46
Trade Balance	% GNP	−0.67	−0.62	−0.55	−0.50	−0.45
Labour Demand	%	0.00	0.00	0.00	−0.00	−0.00
Inflation	D	−0.59	−0.66	−0.77	−0.87	−0.95
Int Rate (sh)	D	−1.70	−1.95	−2.02	−2.08	−2.14
Japanese Economy						
Output(Nat. Acc.)	%	0.49	0.11	0.21	0.29	0.37
Priv Consumption	% GNP	0.71	0.77	0.78	0.79	0.81
Priv Investment	% GNP	0.47	0.42	0.42	0.41	0.41
Govt Consumption	% GNP	0.00	0.00	0.00	0.00	0.00
Exports	% GNP	−0.23	−0.69	−0.62	−0.56	−0.51
Imports	% GNP	0.08	0.09	0.09	0.09	0.10
Imports (quant.)	% GNP	0.45	0.39	0.37	0.35	0.33
Trade Balance	% GNP	−0.80	−0.77	−0.71	−0.65	−0.60
Labour Demand	%	0.02	0.00	0.00	0.00	0.00
Inflation	D	−0.39	−0.02	−0.02	−0.02	−0.02
Int Rate (sh)	D	−1.05	−1.23	−1.19	−1.17	−1.16

Source: Sachs and Roubini (1987)

holds. The result is an improvement of the current account of about 0.8 percent of GNP. Abroad, interest rates fall and the equity markets boom, with a result that consumption and investment both increase. The trade balance surplus goes down in the ROECD and Japan by about 0.6 and 0.8 percent of GNP respectively. The appreciation of the currencies in the other countries causes inflation to fall.[7]

A very important point is that a so-called hard landing for the dollar is not necessarily contractionary for the entire world, since the shift out of dollars actually lowers interest rates in the ROECD and Europe. Thus, the basic idea that such a shock would depress the U.S. economy, sending ripples of recession to other parts of the world, seems dubious to me, and needs further justification.

Of course, the consequences of such a shock could be worse for the U.S. if the magnitude of the shock is much larger. Suppose, for example, that the risk perceptions worsened so much that investors drove up risk premia sufficiently to *eliminate* the U.S. trade deficit (this is an extreme case, like the run on Mexico or Brazil). In that case, the trade balance would have to improve by about 3.5 percent of GNP, or by about 5 times the amount shown in the table. Then, for the Fed to stabilize output would require a fall of the dollar of close to 50 percent, and a rise in inflation of about 5 percentage points a year. Rather than suffer such an inflationary shock, it is likely that the Fed would allow the economy to sink into recession. Abroad, however, there would be a sharp drop of interest rates, and a domestic demand expansion almost surely large enough to offset the contractionary effects of a decline in U.S. GNP.

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