The Adjustment Mechanism: Theory and Problems

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Large deficits, persistent swings in real exchange rates, and sharply increased volatility of month-to-month exchange rate movements have alerted the policy community to the need to do something. Financing of imbalances at times seems too ample, at other times too scarce. Real exchange rates seem to be dominated by the news of the day rather than the productivity of the decade. Disagreement prevails on what is expected of a well-functioning international monetary system. Should it sustain a pattern of purchasing power parity (PPP) exchange rates or of balanced current accounts? provide open-ended financing or force maximum adjustment? equalize inflation across countries or maximize independence? And if the system performs poorly, what are appropriate directions of reform?

These are the questions in today's debate on the international monetary system. Not surprisingly, no unanimity exists, but it is significant that policymakers are inclining toward a resumption of actively managed exchange rate targets while academic opinion is sharply divided between agnostics and activists. This paper reviews some of the conceptual and empirical issues involved in the debate.

Activists believe that there should be a comprehensive, actively managed system of policy coordination. Agnostics do not have much enthusiasm for exchange-rate-oriented monetary policy and do not believe that fiscal coordination is always desirable or ever practicable. Agnostics share with activists the belief that asset markets can grossly misprice exchange rates and, after encouraging a major departure from equilibrium rates, suddenly lose faith and strand the world economy in

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a major misalignment. Both the "new classical" economics and the activists have strong policy views and strictly opposed preferences; the agnostics are groping for a policy.

New classical economists dismiss the entire debate, arguing that even large fluctuations in real exchange rates are merely a reflection of the adjustment to changes in underlying fundamentals. They share a belief in more stable macroeconomic policies—more rules, fewer ad hoc, discretionary moves in policy settings—but they have little sympathy for such notions as overvaluation or a dollar overhang. The new classical economics has challenged the entire view of exchange rate and adjustment policy by questioning the effectiveness of monetary and fiscal policy.

Volatility and Imbalances

The problems of the international monetary system are typically discussed in terms of three issues: the swings of the real exchange rate; the volatility of the real exchange rate; and the large and seemingly persistent current account imbalances and deteriorating net creditor

Figure 1

U.S. Real Exchange Rate[a]
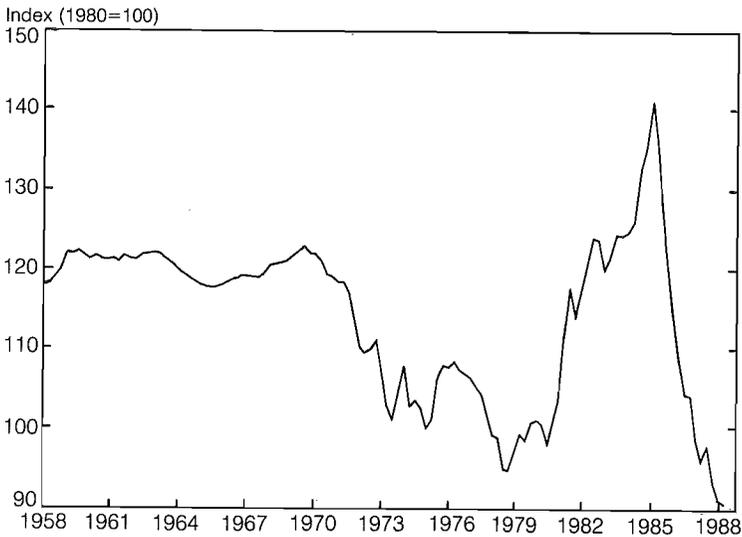
[a]U.S. CPI compared to a trade-weighted index of foreign CPIs in a common currency.
Source: Data Resources, Inc.

Figure 2

Quarterly Changes in U.S. Real Exchange Rates
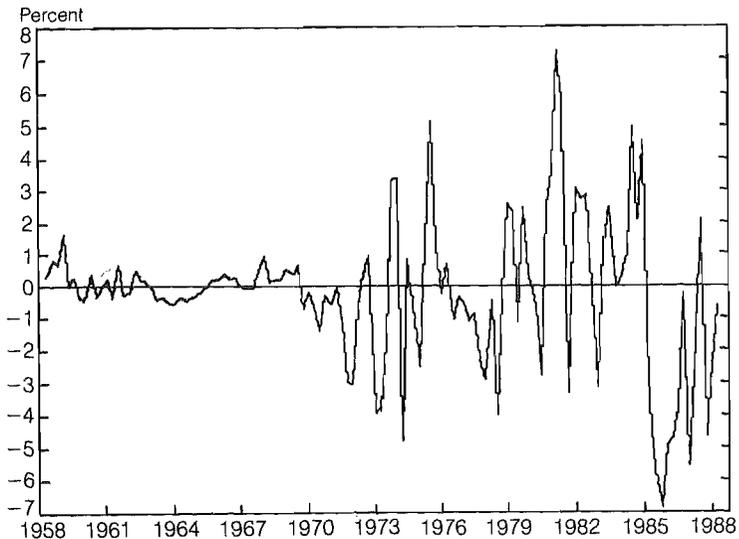
Source: Data Resources, Inc.

position of the United States, including doubts about the desirability of the net foreign direct investment position. Those who express doubt about the adjustment mechanism argue that exchange rate movements work poorly, and perhaps even perversely, and that selling out to foreigners and cutting real wages are undesirable adjustment mechanisms. By implication they prefer an alternative strategy, often protection.

Consider first the real exchange rate issue. Figure 1 shows the U.S. real exchange rate.[1] The figure highlights the propensity of the current exchange rate system to take cumulative departures from a "realistic level." Whatever "realistic" means is left open, but as in the case of the proverbial elephant, it is difficult to interpret some exchange rate movements (for example, between 1980 and 1985) as anything but an aberration.

Figure 2 shows the quarterly percentage changes of the same series. The figure emphasizes the second aspect of our exchange rate experience: real exchange rates are highly volatile, compared to the fixed exchange rate experience of 1958–70.

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[1] The series constructed by Data Resources, Inc. compares the U.S. rate to a trade-weighted index of foreign CPIs in a common currency.

Table 1
Variability of Real Exchange Rates
Coefficient of Variation

	1958–72	1973–87
United States Effective Real Rate	.04	.11
United States-Germany	.07	.21
United States-Japan	.14	.15
United States-United Kingdom	.05	.14
United States-France	.10	.19
United States-Sweden	.08	.21

Note: Variability is measured by the coefficient of variation of the real bilateral exchange rate. The real exchange rate is the ratio of consumer prices in two countries measured in a common currency.

A question remains as to whether this volatility reflects, in fact, increased volatility of underlying fundamentals, possibly including the lack of a nominal anchor, or whether a flexible rate system, because of a lack of stabilizing speculation, produces more noise. There is the additional question of whether the fact of noise, and trading on noise, can become a source of cumulative departures of the exchange rate level from fundamentals.

The third issue in the adjustment mechanism is the persistent U.S. external deficit, shown in figure 3. Is the deficit primarily the result of exchange rate movements and fiscal developments in the United States and abroad, or is it a reflection of structural trends in the world economy? Among candidates for structural trends, the most visible are the less developed country (LDC) debt crisis and the growing emergence of the newly industrializing countries (NICs) as manufacturing exporters. The question arises whether exchange rate movements can eliminate the deficit, and whether they can do so in a way that has acceptable micro and macroeconomic implications.

Finally, the financing question: if adjustment is very slow, can we be sure that the imbalances can be financed in the meantime? The capital markets' impatience could lead to a loss of confidence in the adjustment process, with one of two results. Either the monetary authorities induce financing by a high interest rate (and recession) policy, or else a hard landing occurs as the exchange rate, for lack of financing, goes into a free fall as in the Marris (1985) scenario. An increasing dollar overhang, even in the most favorable scenario, severely constrains monetary policy.

Side issues in the financing discussion are the problem of the declining position of the United States as net creditor in the world and misgivings about the increasing foreign direct investment in the United States, as shown in table 2. The low cost of capital in the United States and the extremely high purchasing power of foreign currencies in terms

Figure 3

Net Exports of the United States

Percent of GNP
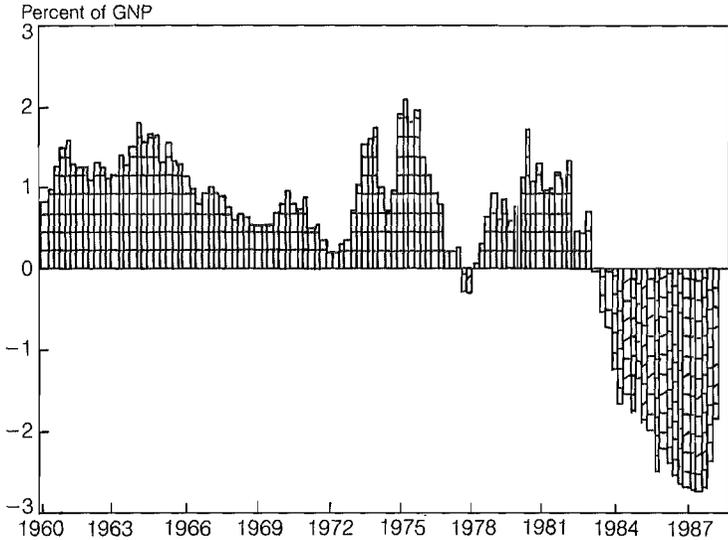
Source: Data Resources, Inc.

of U.S. assets bring about a bargain basement sell-off of U.S. assets to foreign firms. An even lower dollar may ultimately be required to balance the current account, but an even lower dollar seems to put all of U.S. real assets in easy reach of foreign investors.

The International Monetary Fund (IMF) forecasts that the net foreign asset position of the United States will have shifted to a debit of 24 percent of GNP by 1989. That is still far from the net debt positions of Latin America, but ultimately such a position would become troublesome. By contrast, by 1989, Germany and the United Kingdom are

Table 2
The Net External Creditor Position of the United States
Billions of Dollars, Year End

	1980	1985	1987
Total Net Position	106	−112	−368
Direct Investment			
U.S. Assets Abroad	215	230	309
Foreign Assets in U.S.	83	185	262

Source: *Economic Report of the President* and *Survey of Current Business*.

Table 3
External Imbalances, Selected Countries
Percent of GDP, National Income Account Basis

	1950–59	1960–69	1970–79	1980–86
Japan	.1	.2	.8	2.3
Germany	2.7	2.1	2.6	2.5
United States	.2	.2	−.5	−1.8
Korea	−8.7	−10.1	−5.9	−1.6

Source: International Monetary Fund.

expected to have net creditor positions of 20 percent of their GNP, and Japan, 15.8 percent; thus, a major redistribution of world wealth is underway.

Deficits and Adjustment

No presumption exists that current accounts should be balanced in the short run or even over extended periods of time and in fact they have not, as table 3 shows.

Figures 4a and 4b show the net external balances for Germany and Japan. Germany has a virtually uninterrupted string of surpluses in the past 25 years, and Japan exhibits a growing trend toward external surpluses, with reversals in the 1970s associated with the oil price shocks.

To discuss the adjustment mechanism and problems of adjustment, it is useful to start off with a classification of external imbalance.

Kinds of Deficits

The most helpful point of departure in classifying deficits is the national income accounts identity:

Current Account = Saving − Investment

Because this is an identity, a deficit reflects an excess of spending over income or of investment over saving. Any theory of the deficit must ultimately explain why a particular disturbance affected the balance between saving and investment. An incipient or virtual link between a disturbance and the external balance always exists, but it is often difficult to understand why (with budget constraints in mind) the disturbance should translate into actual imbalances. A tariff, for example, is likely to raise the relative price of imports. But why should that lead to lower saving or higher investment and thus to an external

Figure 4a

Net Exports of Germany
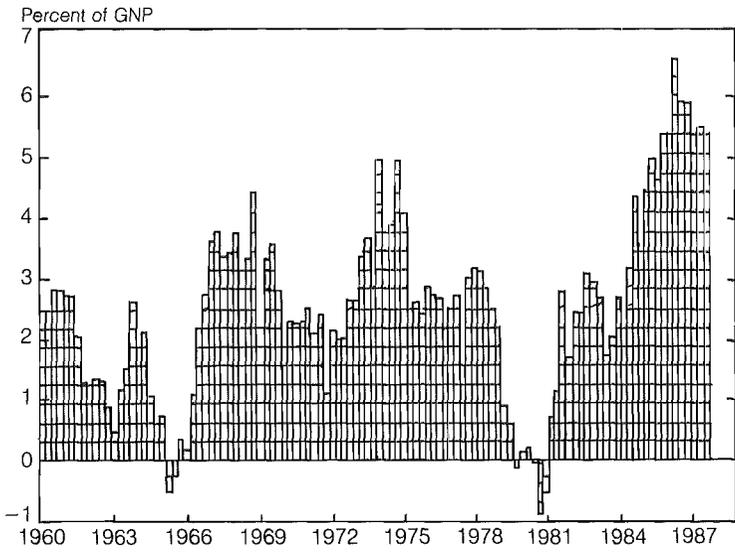
Percent of GNP

Source: Data Resources, Inc.

Figure 4b

Net Exports of Japan
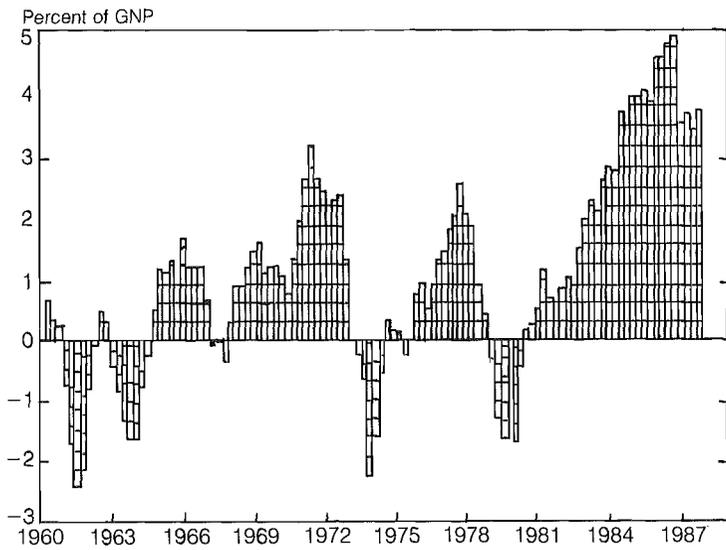
Percent of GNP

Source: Data Resources, Inc.

Table 4
U.S. Saving, Investment and the Budget
Percent of GNP

	Federal Budget Deficit	Net Domestic Saving	Net Domestic Investment	Current Account
1950–59	−.1	7.8	7.5	.3
1960–69	.3	7.8	7.1	.7
1970–79	1.7	7.2	6.9	.3
1980–86	4.0	3.3	4.6	−1.3
1987	3.4	1.9	5.3	−3.4

Source: *Economic Report of the President*

imbalance? In looking at particular "stories" of the sources of imbalances we have to bear in mind the need to establish a link between the disturbance and its effects on the saving-investment balance. Often the government's budget provides at least the missing link.

Consider now eight different sources of external imbalance.

- Development deficits. In countries with low per capita income, saving is low relative to the investment opportunities. Net foreign borrowing will supplement domestic saving in providing resources for investment. By contrast, in mature creditor countries, investment opportunities are low relative to saving. Thus high-income countries tend to be capital exporters. Table 3 illustrates both cases.

- Deficits driven by poor public finance. The prototypes of this kind of deficit are to be found in the experience in Latin America in the 1970s, in Ireland in the 1970s and early 1980s, and in the United States in the 1980s. The U.S. data are particularly striking (table 4).

- Deficits induced by adverse terms of trade shocks. Because the disturbance is transitory or adjustment is not instantaneous, a transitory imbalance arises between income and expenditure. If disturbances are transitory, consumers will smooth consumption and absorb the adverse terms of trade effect over time. If disturbances are permanent (and understood to be such), consumers may respond immediately, but there will typically be an investment response to adjust the economy to the new price structure.

- Deficits resulting from new investment opportunities, say an oil discovery. In fact, if the opportunity brings good news for households, increased consumption (ahead of the as yet unexploited income opportunities) will add to the deficit.

- Deficits resulting from enhanced financial intermediation (domestic or international) which gives households or firms financing

Table 5
U.S. Manufacturing Trade with Developing Countries, 1981 and 1987
Billions of Dollars

	Exports	Imports	Balance
1981	67.3	39.1	28.4
1987	62.9	99.2	−36.4

Source: U.S. Department of Commerce.

opportunities (or terms) that were unavailable before. Improved financial intermediation (with lower rates or reduced credit ratbn-ing) will induce individuals looking forward to a rising income profile to anticipate future incomes. Rationed firms will increase investment spending.

There is also, of course, disintermediation. Countries that can no longer borrow in world capital markets are forced into invol-untary trade surpluses.

● Deficits resulting from structural change in the world economy. Traditionally this was called "loss of markets." In the case of the United States, this might today be called new competitors or new entrants in world manufacturing. Table 5 shows the change in U.S. trade with the NICs since 1981. Part of the $70 billion shift in trade reflects the debt crisis (loss of markets), but a major part is a reflection of the entrance of new competitors in world trade. These deficits will be persistent only to the extent that exchange rates are not allowed to adjust and the income adjustment process is slow.

● Demographic deficits during a transition period as the economy adapts to a changing age structure. Demographic factors influ-ence the external balance via the saving-investment relation.[2] A slowing down of population growth implies an increase in the average age of the population. In the beginning, the average household becomes relatively more middle-aged. In a life-cycle saving context, this implies an increase in average, hence na-tional, saving. There is no presumption of an increase in invest-ment, so the nation's current account surplus would increase.

As the demographic structure converges to the new steady state a relatively larger fraction of households are in retirement, thus in the dissaving phase of their life cycle. At this stage, their

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[2] The first formulation highlighting demographic issues is von Furstenberg (1980).

Table 6
Changing Age Structure in OECD Countries
Percentage of Population Age 65 and Over

	Japan	United States	Germany	OECD
1980	9.1	11.3	15.5	12.2
2000	15.2	12.2	17.1	13.9
2020	20.9	16.2	21.7	17.9

Source: OECD.

dissaving implies a lower national saving rate. Thus, for the entire transition period, there would be a transitory bulge of the saving rate and a long-run decline. This is the explanation often offered for the growing Japanese and German external surpluses.

Table 6 shows the changing actual and prospective age structure in the United States, Japan and Germany. The exact effect on the current account will depend on the relative decline in population growth and on national saving characteristics including, in particular, differences that stem from social security systems. These differences in country-specific saving rates potentially increase the impact of differential rates of slowdown in population growth.

• Finally, trade deficits resulting from misaligned exchange rates. Misalignments of exchange rates only imply a sustained deficit if some process (like fiscal policy) sustains a level of spending in excess of income.

With alternative hypotheses about imbalances in hand, we now turn to the new classical model to see how this approach represents adjustment. We want to underline a point made strongly in this "equilibrium" approach, namely that trade imbalances and fluctuations in real exchange rates need not require policy responses. This recognition disciplines the subsequent discussion with the burden of identifying which particular assumptions of the new classical model need to be questioned, in order for adjustment to be a problem in need of a policy response.

The Classical Model

A classical rendition of the world economy has no room for an adjustment "problem." Agents and governments optimize; they choose the welfare-optimizing path of consumption given current information about their future path of endowments. Governments optimize in

selecting a time-consistent, optimal tax and spending structure. All wages and prices are fully flexible.

Adjustment to Disturbances. In the new classical model, households select a path of consumption that depends on the term structure of interest and satisfies their budget constraint. This optimization implies a substantial separation between current income and the path of consumption. The model predicts that households smooth their consumption in the face of income fluctuations, so that volatility in endowments is reflected primarily in the trade balance rather than the level of consumption.

The response to (non-distortionary) government fiscal policies also involves consumption smoothing. An increase in government spending that is fully financed by current taxation will lead to a trade deficit. The reason is that households will borrow in the world capital market to finance most of the current tax liability. As a result, national absorption rises with government spending and the country runs a trade deficit. In future periods, after government spending has fallen back, households and the country run a trade surplus to finance the interest on the accumulated debt. In fact, it makes no difference whether the government finances itself by debt and a corresponding permanent tax or whether it uses current taxes and the households, for consumption-smoothing reasons, go to the world capital market.

The extreme implication of Ricardian equivalence can be dampened by assuming mortal individuals. Blanchard (1985) has offered such a model, and Frenkel and Razin (1987) have explored the implications in an open economy. Spending that is financed by a permanent tax now leads to a larger trade deficit than spending that is fully financed by current taxation. The reason is that deferral of tax liabilities is viewed by mortal individuals as implying lower tax incidence than a current tax. As a result, their spending falls less, and national absorption rises by more. The more mortal the individuals, the larger the trade deficits implied by current government spending with deferred taxation. Conversely, with full current taxation, the trade deficit is less since it implies a larger reduction in lifetime income.

It is immediately apparent that the story can be further enriched by allowing (sector-specific) investment to take place. Now the effects of policies or shocks on relative prices have implications for the sectors in which investment takes place. The investment, in turn, influences future output levels and the future path of equilibrium prices. For example, in the simplest world, an expected increase in government spending on a country's nontraded goods is expected to create rents for capital installed in that sector. As a result, an incentive exists to invest in the sector ahead of the increase in government spending. The increased investment spending is financed in the world capital market and leads to an increase in the deficit ahead of the increased government spending.

Consumers of the home country will save in anticipation of future taxes, and crowding out is reduced to that extent. If taxes are distant, the presumption remains that the anticipation of government spending creates a trade deficit.

The point of developing the new classical model is as follows. The model helps explain that trade imbalances are optimizing responses to shocks in technology, endowments or policies. Trade imbalances and movements in relative prices are interpreted as *equilibrium* phenomena. Nothing is wrong with large and highly persistent trade imbalances. If consumers and households optimize, using information efficiently, and there are no externalities, all is well.

Exchange Rate Implications. Stockman (1987, 1988b) has confronted the task of setting out the claims of the new classical or equilibrium approach, its empirical relevance, and the evidence that favors this view over an alternative approach that relies on price stickiness. Stockman writes (1987, p. 12):

> Economic theory predicts that real disturbances to supplies or demands for goods cause changes in relative prices, including the 'real exchange rate.' In a wide variety of circumstances, these changes in the real exchange rate are partly accomplished through changes in the nominal exchange rate. Repeated disturbances to supplies or demands thereby create a correlation between changes in real and nominal exchange rates. This correlation is consistent with equilibrium in the economy, in the sense that markets clear through price adjustments.

He further notes (1988b, p. 538):

> There is a large set of negative results, these can often be as useful as positive results for assessing alternative viewpoints for policy purposes. First, there is no known systematic relation between the current account and the real or nominal exchange rate. Nor is there any known systematic relation between government budget deficits and either the current account or the exchange rate, between nominal interest rate differentials across countries and the exchange rate or the current account, or between real interest differentials and the exchange rate or the current account. Models that produce clear and reliable relations between these variables are evidently missing some important features of the world.

Stockman further emphasizes several points, of which three deserve special emphasis:

- The correlation between nominal and real exchange rates is not exploitable by government policy.
- Statistical evidence indicates that changes in exchange rates (real and nominal) are nearly permanent. This persistence is inconsistent with the view that monetary shocks or transitory real shocks

are the source of exchange rate movements. Instead, it is consis-
tent with the view that most changes in real exchange rates are
due to real shocks with a large permanent component. Because of
the high correlation of nominal and real exchange rate changes
the evidence is consistent with the view that most changes in
nominal exchange rates are caused by largely permanent real
disturbances.

* The observation of greater variability of a price of real exchange
rates under floating does not, by itself, have any obvious impli-
cations for government policy.

Consider, then, what this approach has to say about government
policy.

The Role of Government. Lucas (1986) has set out the principles of
monetary and fiscal policy. The benevolent government (if any) will
follow optimal rules of public finance. Specifically, the tax structure is
set so as to minimize the excess cost of taxation. Marginal tax rates as
seen by the forward-looking economic agent are flat and do not invite
distortionary intertemporal substitution. The government will typically
rely on seigniorage as part of its revenue. Like marginal tax rates,
inflation rates will also be constant ex ante.

Two major issues with respect to the role of government arise in the
classical rendition. The first is what activities the government should
engage in. The second concerns time-consistent revenue policies. The
only plausible role for government is to fill the gap opened by market
failures. That means providing public goods, imposing corrective taxes,
and, possibly, opening missing markets, including financial intermedi-
ation via the issuance of public debt.

Interesting problems for the role of government arise on the side of
tax, debt, and inflation policy. The issue here is the time consistency of
policies. Rather than raising distortionary taxes, a government has an
incentive to first borrow and issue money and then, at some point, fall
upon the unsuspecting public by a repudiation of all its liabilities. As
Lucas notes (1986, p. 127):

> Defaulting on nominal debt, currency included, is not simply a problem with
> gangster government, though it arises there too, but with the ideally
> beneficent government of welfare economics.

But the public is not unsuspecting, and therefore the likelihood of
default is internalized and leads to suboptimal debt and money issue
unless there can be a credible precommitment of policies. From the
perspective of this theory, the absence of effective mechanisms (the gold
standard and Victorian fiscal precepts having possibly been such rules)
to establish precommitment is the major policy problem today.

In the new classical economics, the only policy issues concern the welfare-maximizing *timing* of taxation (and the efficient structure across goods, including money) and the *time consistency* of policies. It is entirely obvious that no role exists for government in relation to real exchange rates or trade imbalances. As these are optimizing, equilibrium adjustment processes to disturbances, they are presumed to be optimal.

Open-economy policy issues involve only two questions: optimal commodity and finance taxation that exploits a country's international monopoly, and the optimal exchange rate system. Whether a country should have a fixed or flexible rate system reflects to two considerations: which system provides lower-cost seigniorage, and which provides a more effective means of precommitment. Once again, the emphasis is on the choice of a policy regime or rule, not on policy reactions to current realizations of particular variables.

Evaluation. The most immediate implication of the new classical model for the question of the adjustment mechanism is that there is no "problem." The budget constraint assures that spending plans cannot (ex ante) be out of line with incomes. Government policy is optimizing in imposing an efficient timing of taxes. The entire economy behaves as if maximized by a social planner. Nothing is left for policy to do.

The new classical approach leaves policy activists speechless. A world where all is well, except overzealous government, squares poorly with perceptions that exchange rate movements are excessive, trade imbalances too large and too persistent, and complacency overabundant. It is tempting to dismiss the new classical approach simply on the grounds that it has nothing to offer about "obvious" policy problems.

But if the new classical model cannot support policy activism, it also challenges policy activists to demonstrate rather than assert the need for and the welfare-improving effects of their policy intervention. Policy activists have not brought that proof, which removes some of the persuasiveness of their case. A useful beginning might be to question particular assumptions in the new classical model and explore whether, on that basis, policy activism comes into its own.

In two areas, a new classical approach has always had broad appeal. These are the long-run issues of demographic transitions and the process of catching up with technical progress in advanced countries. These are long-run adjustment processes that affect, respectively, a country's saving rate and the equilibrium pattern of relative prices. It is important to recognize these long-run processes, because they are potentially part of the current imbalances and correcting them by offsetting macroeconomic policies would certainly be undesirable. We have already noted above the issue of demographic transitions. We note here, in addition, the effect of large productivity growth differentials on trend real exchange rates.

Table 7
Labor Productivity Growth in Manufacturing
Percent per Year

	Korea	Taiwan	United States	Japan
Pre-1973	n.a.	n.a.	3.4	10.3
1973–79	9.6	7.1	1.0	5.2
1979–85	5.8	6.1	3.6	6.3

Note: Data for Korea and Taiwan refer to 1975–79 and 1979–84.
n.a.: not available.
Source: *OECD Economic Studies*, Spring 1988.

Large differentials in productivity growth, sustained over a significant stretch of time, are a further important structural factor. If in one country, productivity grows at a rate of 6 percent and in another, at only 3 percent, the steady divergence of productivity growth will be reflected in the equilibrium trend of the real exchange rate. This point goes back to Ricardo and was formalized by Balassa and Samuelson in the 1960s. Table 7 illustrates the very large differences in productivity growth among the NICs, Japan and the United States.

The Balassa-Samuelson theory predicts that the country with a higher rate of productivity growth will experience trend real appreciation. This fact is shown in figure 5 for the case of the United States-Japan bilateral real exchange rate in the past 30 years.[3] The explanation is as follows: high productivity growth in manufacturing (a tradable goods industry) will bid up wages, which raises (in a Ricardian world) the relative cost of nontraded goods (services) where productivity growth tends to be minimal. We thus observe a country gaining in international competitiveness even with a higher rate of inflation than that of trading partners who experience a lower rate of productivity growth.

It is clear that in looking at real exchange rates over time, divergences in the growth rates of productivity should be an important factor. It helps explain why Japan experienced real appreciation in the past. As Marston (1986) has emphasized, continued real appreciation of the yen is a counterpart of the continuing Japan-United States productivity growth differential. Looking ahead, the theory predicts real appreciation of the currencies of the Asian NICs, unless labor leaving agriculture continues to depress wages relative to productivity.

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[3] The figure shows the ratio of U.S. to Japanese CPIs in a common currency.

Figure 5

The United States-Japan Real Exchange Rate[a]

Index (1980=100)
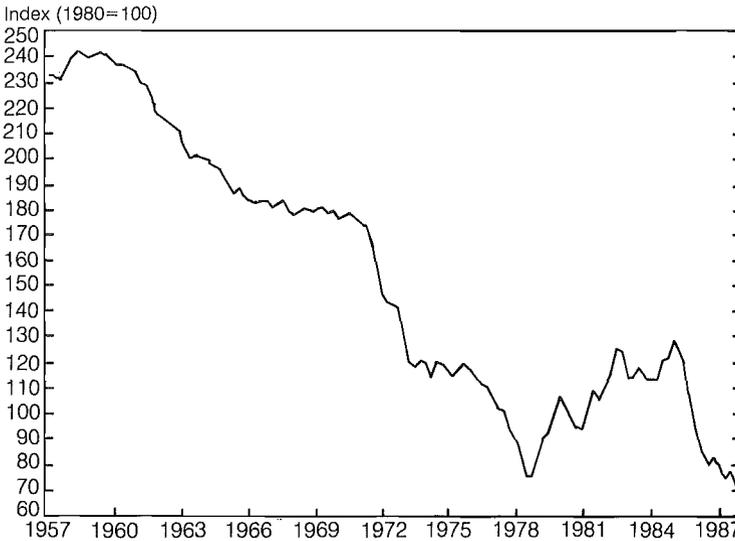
[a]Ratio of U.S. to Japanese CPIs in a common currency.
Source: Data Resources, Inc.

Issues in the Adjustment Process

In this section, we discuss three issues raised by the adjustment mechanism. The first is whether exchange rates "work" as an adjustment tool. Further questions concern the lack of long-term stabilizing speculation, the distribution of adjustment, and the monetary-fiscal mix for the world economy.

Do Exchange Rates Work?

A central question about the adjustment mechanism is whether exchange rate changes do affect trade volumes and whether the volume responses are sufficiently strong to change the nominal trade balance. The answer is yes. This is not a foregone conclusion, for the following reason. One can imagine a world where an exchange rate depreciation is fully offset by an increase in domestic wages and prices. In that case, competitiveness is unchanged, hence trade volume will be unchanged. In fact, however, the U.S. evidence supports the view that trade flows and competitiveness do respond to the exchange rate. In fact, perhaps surprisingly, nominal and real exchange rate movements are almost perfectly correlated.

Table 8
Growth in U.S. Exports and Imports
National Income Account Basis, Constant 1982 Prices, Percent

	Exports	Imports
1980–85 Cumulative	−7.0	37.4
1986	3.1	9.4
1987	13.1	7.9
1988	17.9	6.5
Source: Data Resources, Inc.		

A range of evidence exists on the effect of trade flows on trade volume and value. Table 8 shows the response of trade volume in the 1980s. Of course, these volume changes reflect domestic and foreign spending growth, but it is clear that the pattern of changes reflects the change in competitiveness. In particular, the strong export volume growth of 1987 and 1988 is a reflection of the gain in competitiveness.

Considerable difficulty is involved with measuring competitiveness. Measures such as relative CPIs in a common currency primarily reflect changes in exchange rates and give relatively little weight to offsetting changes in the transactions prices of traded goods. Table 9 shows actual transactions prices for particular traded goods. Note that import prices rose significantly more than export prices, as would be expected if suppliers in each country based pricing primarily on their domestic cost, with only partial pricing to market.

Another comparison, using GNP deflators, is shown in table 10. In the consumer goods group, we see the expected effects of a depreciation: a moderate rise in export prices, a sharp increase in import prices, and strong growth of export volume relative to import volume. This is, however, not the case for capital goods, where import growth continues at a very high rate despite some price adjustment. The reason for this can be seen in figure 6, which shows prices of imported and domesti-

Table 9
Export and Import Prices, 1988
Index of Prices in U.S. Dollars, 1985:I=100

	Export Price 1988: II	Import Price 1988: II
Nonelectric Machinery	101.3	142.9
Electric Machinery	103.4	116.1
Scientific Instruments	111.6	141.8
Transportation Equipment	111.1	136.3
Source: U.S. Bureau of Labor Statistics.		

Table 10
U.S. Exports and Imports, Price and Volume Changes: 1985–88:I
Cumulative Percentage Change

| | Exports | | Imports | |
	Price	Volume	Price	Volume
Consumer Goods	8.7	50.0	20.7	16.8
Capital Goods	3.1	58.3	18.2	57.4
Autos	4.9	16.2	21.3	11.0

Source: *Survey of Current Business.*

cally produced capital goods. The striking fact is that import prices in
dollars and the relative prices of imports are even today below the 1980
level.

Figure 7 shows a comparison of transactions prices of exports (using
trading partner weights) for Japan and for Germany relative to the
United States. The pattern of these relative export prices (which, with
some qualification, are an indication of competitiveness in third mar-
kets) reflects that of the dollar exchange rate. Since the first quarter of
1985, the 1980–85 loss in competitiveness has been broadly regained, but

Figure 6

Prices of Capital Goods in the United States
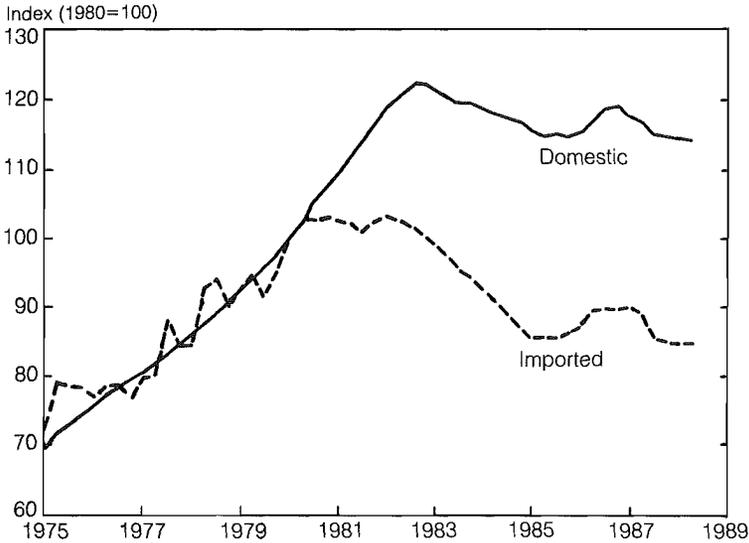
Source: Data Resources, Inc.

Figure 7

Relative Export Price Comparisons

Index (1980:I=100)
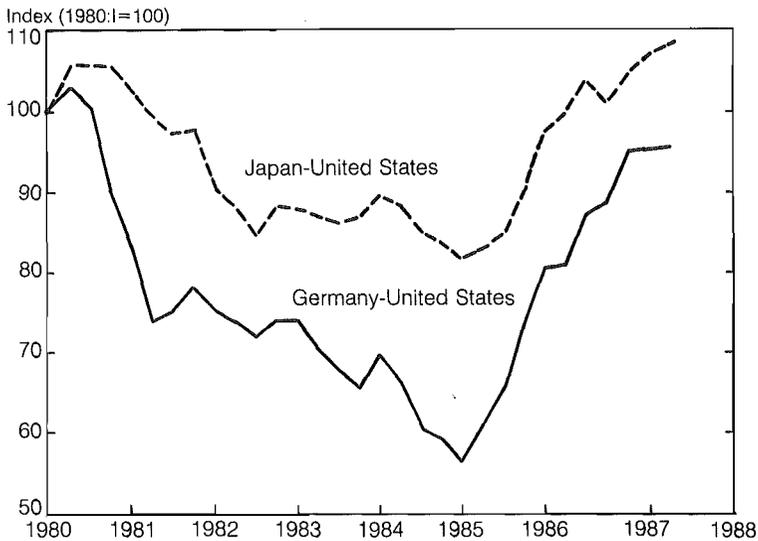
Source: Data Resources, Inc.

no more. The dollar depreciation of the past three years has only put the United States back to the level of competitiveness of 1980.

In summary, nominal exchange rate changes do affect relative prices, and changes in relative prices do affect trade flows. But as more detailed transactions prices for international trade become available, it is also clear that the price response differs widely across products and industries and differs between the home market, exports, and imports. Some recent work on price responses to exchange rates (Dornbusch 1987, Krugman 1985) addresses this question in the context of industrial organization pricing theory. The point of that literature is that exchange rate movements (given unit labor costs in national currencies) will change the industrial organization landscape. This is particularly true, as Krugman has argued, if fixed costs of entry or exit are brought into play by a major misalignment.

Asset Market Problems

A central question about the adjustment process concerns the functioning of speculation in exchange markets. Does the foreign exchange market set the exchange rate on a path that minimizes excess

Table 11
The Effect of U.S. Monetary and Fiscal Shocks
Percent Deviation from Baseline

	1988	1989	1990	1991
Fiscal Expansion[a]				
Short-Term Interest	.1	.3	.4	.5
Nominal Effective Exchange Rate	2.3	2.2	2.1	2.1
Current Account	−.2	−.3	−.3	−.4
Monetary Expansion[b]				
Short-Term Interest	−.4	−.4	−.3	−.2
Nominal Effective Exchange Rate	−5.4	−5.0	−4.8	−4.7
Current Account	.1	.2	.2	.2

[a] Increase in U.S. government spending of 1 percent of GNP.
[b] Increase of 5 percent in the U.S. money supply target. Effective exchange rate: +=appreciation; Current account: percent of baseline GNP.
Source: International Monetary Fund (1988).

volatility and misallocation of resources over time? Or are asset markets shortsighted, extrapolating current trends without much concern about cumulative misalignments? The same questions have been asked about financial markets in general. The work of Shiller (1986) and Summers (1988) on these issues does not inspire confidence that asset markets are farsighted. In fact, the very operation of the foreign exchange market is discouraging in this respect. The majority of trading is "day trading," and, to the extent that participating institutions do take a long view, "long" tends to be a few weeks. In Dornbusch and Frankel (1987), we argue that markets that trade on noise may well cause cumulative departures from a path supported by fundamentals.

This conclusion may be supported in one of three ways. The first is an appeal to the poor performance of model-based estimates of the determinants of exchange rates. A random walk model tends to outperform most macroeconomic models. A second perspective is given by the predictions of econometric models about the effects of monetary and fiscal shocks. We show here in table 11 the predictions of the IMF Multimod.

The table supports the Mundell-Fleming model of flexible exchange rates, which predicts that fiscal expansion leads to appreciation and a worsening of the current account (that is, current account crowding out). The table also shows that monetary expansion brings about depreciation and an improvement in the current account. The point we want to emphasize is that the predicted deviations from base line are very small compared to the actual U.S. experience in the 1980–88 period. Nominal exchange rate movements of 50 percent are out of line with the

Figure 8

Forecast Errors Implied in Three-Month Forward Exchange Rates[a]
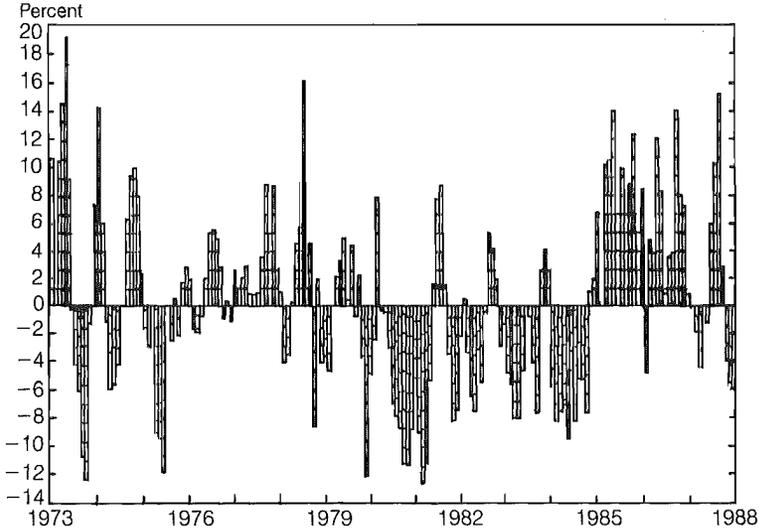
[a]Forward rates as a percent of spot rates at maturity.
Source: Data Resources, Inc.

predictions of this model and, indeed, any macroeconometric model. This suggests either that other (unknown) fundamentals accounted for the sharp rise and fall of the dollar or that asset markets put the dollar out of line with fundamentals.

The third perspective on the functioning of asset markets comes from forecast errors. One cannot infer that these large real exchange rate movements represent misalignments simply because they are sizable and ultimately are reversed. It is even less appropriate to assume that they reflect equilibrium relative prices, although one cannot offer an explanation for the size and pattern of changes over time.

Poor forecasting performance of forward rates is a central feature of the exchange rate experience in the past 15 years. Figure 8 shows the percentage forecast error (forward rates as a percent of spot rates at maturity) implied in three-month forward exchange rates. Forecast errors are always large, although their sign varies sufficiently to give the impression of randomness.

In fact, however, forecast errors are not even random. A regression of forecast errors on *past* changes in the actual exchange rate yields significant explanatory power:

$$\text{Error} = 1.61 + 1.02 \text{ Depreciation,}$$
$$(0.64) \quad (6.24)$$
$$R^2 = 0.61 \quad DW = 2.04 \quad Rho = 0.88 \tag{1}$$

where the terms in parentheses denote t-statistics.[4] The equation implies that when the DM/$ exchange rate is depreciating, as in 1980–85, the forward price of marks underestimates the actual price at maturity. This is a reflection of the fact that the forward rate (with small interest differentials) is basically equal to the current spot rate. Therefore, when the spot rate is depreciating, the forward rate is below the future spot rate. The fact that past depreciation predicts future forecast errors is a consequence of the lasting one-directional trips in the exchange rate.

Frankel and Froot (1986a) have shown extensive evidence of large discrepancies among forecasts gathered from market surveys, forward premia, and realized depreciation. In Froot and Frankel (1988) the question is asked whether the bias of forward rates in predicting depreciation arises from a risk premium or from a lack of rational expectations. The latter is firmly sustained as the source of the bias. In the same direction, Ito (1988) concludes that in Japanese survey data the rational expectations hypothesis can be firmly rejected. He notes (pp. 22–23):

> Among different groups, unbiasedness of expectation was rejected in a few instances for shorter horizons and unanimously rejected in the six-month horizons. The orthogonality [of forecast errors] was soundly rejected. We may conclude that we have a strong evidence against rational expectation formation in the Tokyo foreign exchange market.

The growing body of evidence supporting the lack of rational expectations in foreign exchange markets has dramatic implications for policy. If asset markets do not work efficiently, then there is definitely the potential (and the need) for policy intervention to improve the allocation of resources.

Financing versus Adjustment

Aside from the working of asset markets, another major question is whether adjustment and financing of external imbalances can be expected to continue smoothly. Will the cumulative dollar depreciation

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[4] Let $_t f_{t+3}$ denote the three-month forward rate prevailing at time t and e_t the spot rate. The left-hand side is defined as: $\text{Error} = 100^* \ ((_t f_{t+3} - e_{t+3})/e_{t+3} - 1)$ and depreciation $= 100^* ((e_t - e_{t-3})/e_t - 1)$. In the regression, the depreciation variable is entered as a four-quarter distributed lag.

Table 12
Forecasts for the United States Current Account
Billions of U.S. Dollars

	1987	1988	1989	1990
OECD[a]	−160.7	−150.0	−132.0	n.a.
IMF[b]	−154.0	−138.8	−134.7	n.a.
DRI	−154.0	−136.9	−124.9	−100.4

[a] *OECD Economic Outlook*, July 1988.
[b] IMF *World Economic Outlook*, August 1988.

since 1985 be sufficient to eliminate the external deficit, and is there assurance that financing will be available smoothly while the adjustment is underway?

Table 12 shows three different forecasts for the next few years. The forecasts all predict external deficits for the United States that will not fall far below $100 billion by 1990. That raises the question of whether further adjustment is required and whether this adjustment will come about spontaneously or require policy intervention.

An answer to this question starts from the assertion that the U.S. deficit is not primarily a result of the U.S. fiscal position. It is true that the United States has had a massive fiscal deterioration relative to other countries. But there are other factors at work, too, including the drop in the private saving rate and the large invasion of the U.S. market by the NICs. This invasion reflects, in part, the debt crisis which forces developing debtor countries into premature resource transfers abroad. But it reflects even more the sharply increasing export competitiveness of the Southeast Asian NICs. Whereas the United States was exporting capital goods to these countries in the 1970s, today the capital goods are exported to the United States, directly or via Japan.

Against the view that further exchange rate adjustment is required, one can hold the alternative of an adjustment by differential growth rates of real spending. If Europe and Japan and some NICs had demand growth on a sufficient scale, and the United States had a fiscal retrenchment, then by absorption changes alone, external balance would come about in time. Table 13 shows that this process has, in fact, been underway since 1985. It is doubtful, however, if it can go on long enough and provide enough of an effect on the external balance to be the main remedy.

The Policy Mix. In addition to an international differential demand growth pattern, or as a substitute for it, further dollar depreciation of course remains a possibility. Dollar depreciation is an effective tool for external balance adjustment, but it raises the question of the impact on the regions that suffer a loss in competitiveness and demand. U.S.

Table 13
Adjustment of World Imbalances, 1985–88
Cumulative Percentage Increase

	United States	Europe	Japan
Export Volume	51.9	15.9	8.8
Import Volume	34.1	29.3	36.9
Domestic Demand	12.3	13.8	19.3
GNP	11.8	10.8	16.2

Source: OECD.

adjustment in the external balance simply cannot come about except with the support of *worldwide* changes in the monetary and fiscal mix.

In the United States, there is a recognized need for fiscal correction. The reason is not so much an imminent fiscal crisis but rather the fact of full employment. An improving external balance is becoming a source of crowding out and would do so even more strongly if the external deficit were to vanish. Abroad, in Europe and in Japan, budget deficits continue to be large and a source of concern. For the seven major industrialized countries (excluding the United States), the central government budget deficit averaged 3.7 percent of GNP in 1986–88, and it would therefore be difficult to argue that these countries should embark on a *sustained* fiscal expansion to stimulate demand.

There is obviously an adding-up problem at the world level—some regions will have to spend more to compensate for the effect of reduced U.S. demand. With fiscal expansion an inappropriate solution, one can look in two directions. Some argue that the Southeast Asian NICs should have a spending boom and import liberalization, but the quantitative impact would not go far. Others argue that the debtor countries should be given relief. That makes sense, but, on welfare grounds, why not make these transfers to Africa or poor countries in Asia?

Piecemeal demand policy will not go very far and is difficult to justify. But there is another possibility, namely radically lower world interest rates. In the 1980s, fiscal policy was expansive (on average), but at the same time, monetary policy showed a sustained tightness reflected in extremely high *realized* real short-term interest rates (table 14).

How might the adding-up work out? The fiscal tightening in the United States will, by itself, slow down the growth in demand, which will spill over to the rest of the world by reduced U.S. net imports. The fiscal correction, if sufficiently vigorous, risks creating a U.S. recession. An offset in the form of crowding in is needed: the crowding in has to come from investment and from increased net exports. Higher investment requires lower interest rates. To some extent, these may come

Table 14
Real Short-Term Interest Rates

	1960–67	1968–73	1974–79	1980–86	1987	1988
United States	1.4	.4	−1.0	4.1	2.8	2.7
Germany	1.1	1.6	.6	3.9	1.9	2.2
Japan	.6	−1.5	−2.6	3.1	3.7	2.1
Source: OECD						

about as a result of the expectations effects generated by fiscal correction, but, presumably, monetary policy must help. The external balance improvement clearly requires further depreciation, especially if investment responds strongly and has significant import content.

The decline in worldwide interest rates would help make things add up without recession abroad. Significantly lower real interest rates offset the deflationary shock of the U.S. trade improvement by increased domestic investment abroad. They also significantly reduce public debt service and, to that extent, allow resources to be used for sustainable, supply-side-oriented tax cuts. Lower interest rates also help all those countries that are currently constrained by their debt situation. The worldwide effects of reduced real interest rates thus operate in the right direction: in the full employment deficit country, demand growth slows down because of fiscal correction; in the rest of the world, lower interest rates (and some fiscal expansion financed out of the interest saving) speed up the growth of demand.

In this scenario, there is no need to see whether the U.S. accounts come literally to balance. As sustained deficits shrink radically and the dollar declines, thus eliminating the perception that there could be yet a further large drop ahead, financing of any residual imbalance is not an issue.

It is also interesting to ask what happens if there is no fiscal correction in the United States in 1989–90. One possibility is particularly disturbing: a relatively strong U.S. economy moves ahead with 2.5 to 3 percent growth in output, partly as a result of an improving external balance. The increasing use of capacity and overemployment lead to rising inflation, and ultimately, the Fed steps in with monetary tightening. There is little doubt that increased U.S. interest rates would very quickly attract a capital inflow and cause a dollar appreciation. Trade improvement would thus be jeopardized by another round of crowding out.

The example makes another point: financing the U.S. external deficit is not a problem in the short run. If interest rates are high enough and there are no immediate prospects of depreciation, all the world's money will come. Financing only becomes a problem when speculators

are paid little interest and see the risk of exchange losses. That is the situation at the tail end of a dollar overhang, when speculators have driven the dollar too high and the high dollar and high interest rates start slowing down the economy. To have low interest rates without an external crisis, foreign interest rates must be low and/or the dollar must be low. Neither is the case today.

Policymakers face the immediate problem of designing a policy mix that will assure continued growth without creating unsustainable disequilibria. They also face the question of whether there is a better system of running international interdependence and adjustment. We conclude with a comment on that question.

System Reform

Critics of the present exchange rate system emphasize excessive volatility and persistent, large swings in real exchange rates unrelated to fundamentals. Proponents of thoroughgoing monetary reform have argued a return to fixed exchange rates. The proposal that has received most attention focuses on target zones for exchange rates, supported by strongly coordinated monetary and fiscal policies.[5] An entirely different approach goes back to a proposal of Tobin (1982), a tax on financial transactions. The rationale for this approach, preferably extended to a tax on all financial transactions and not only those involving foreign exchange, is the belief that there is excess capital mobility.

A Financial Transactions Tax

Advocates of a financial transactions tax start from the premise that the problems of the exchange rate system stem from excessive capital mobility. Controls, they argue, are an impractical way of dealing with this problem. They claim that a much better way to cope with excess capital mobility is a worldwide financial transactions tax. A moderate, worldwide tax on *all* financial transactions would force asset markets to take a long-run view of the assets they price. As a result, there would be more stabilizing speculation.

Advocates of a financial transactions tax argue that financial markets exhibit, among others, the following problems:

- The disappearance of transactions and information costs, as a result of technological developments, has reduced the horizon of traders to a few hours. Participants in financial markets believe

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[5] See Williamson and Miller (1987).

that they are liquid. The technology of transactions and informa-
tion encourages this view even if, in the aggregate, it is a fallacy.
Long-term markets dry up because they are thought to be too
risky. Asset management focuses almost exclusively on short-
term capital gains.

- The high volatility in asset prices and the resulting scope for
capital gains have made asset market participants more trigger-
happy than ever.
- Financial fragility is pervasive. Excessive accumulation of debt
has made many sectors vulnerable to shocks in relative prices and
interest rates. This is a consequence of a poor regulatory frame-
work that has failed to discourage excessive debt accumulation
and has allowed itself to err on the side of concessions because
"financial deregulation" was accepted as an irreversible trend,
made necessary by international competition.
- Monetary policy is increasingly becoming a hostage of financial
fragility. That recognition itself encourages financial markets to
incur ever larger exposure. Monetary policy risks becoming
entangled in its own effects. The Fed plays strategic games with
the market, the market speculates on what the Fed (and other
central banks) speculates on and, in the end, short-term noise and
imagination, not long-term fundamentals, come to determine asset
prices and monetary policy. The more the Fed looks at noisy
indicators, the more the market is drawn to concentrate on these
indicators. Month-to-month trade numbers and employment fig-
ures, both of which are exceptionally noisy, are now the principal
determinants of the 30-year bond yield and the value of the dollar!

Given these premises, the proponents of a financial transactions tax
claim that it is impracticable to attempt to roll back technological gains
and integration of financial markets. But they believe it is equally
essential to recognize that there is a need for what James Tobin has
called "putting some sand in the wheels." An effective way to achieve
this result, in their opinion, is the introduction of a moderate financial
transactions tax that would apply to all transactions. The purpose of the
tax is to lengthen the horizon of the market and thus throw weight to
speculation in fundamentals and away from noise trading.

A financial transactions tax would be expected to increase the
expected holding period of assets and hence would filter out much of
the noise, and cumulative trading on noise, in asset markets. The
attraction of such a tax resides in the fact that when levied at a very
moderate rate, it taxes short-term (round-trip) transactions, while leav-
ing the profitability of long-term investment virtually unaffected.

There are two major objections to such a tax. One is the resource
cost of implementing yet another tax. That cost would have to be held

against the costs of high asset price volatility and misalignment and the resulting resource cost. On that basis, it presumably comes out small. The second is the argument that with the tax implemented in only one or a few countries, business would merely shift to offshore centers. It is an open question whether coordinated application of the tax would do away with much of this problem.

Appendix

Consider a simple version of an open (barter) economy where agents can borrow and lend in world capital markets at a given interest rate and can buy or sell goods at a given price.[6] In addition to traded goods for which world prices are given, there are also nontraded goods. The endowments of traded and of nontraded goods may vary over time, and this is one of the disturbances we consider here.

Optimization by households (subject to their intertemporal budget constraints) yields demand functions for present goods, both traded and nontraded, and for the amount of lending or borrowing in the world market. If the interest rate households face is equal to the world interest rate, the optimal consumption profile will be flat. But if the interest rate exceeds the rate of time preference, the path of consumption is rising over time. Conversely, it is declining when the current interest rate falls short of the rate of time preference. Let $\lambda_t = c_{t+1}/c_t$ be the growth rate of consumption. The theory predicts the following relation:

$$\lambda_t = \lambda(r^* - \delta - (1 - \alpha)\sigma_t); \quad \lambda' > 0, \quad \lambda(0) = 1, \qquad (A.1)$$

where σ denotes the rate of inflation between t and t+1 of nontraded goods in terms of traded goods, and $1 - \alpha$ is the expenditure share of nontraded goods.

In equation (A.1), the growth rate of consumption, λ_t, is a function of the consumption-based real interest rate, which is the world nominal interest rate less the weighted average inflation of traded and home goods. In what follows, we assume a given world inflation and equality of the world real interest rate, $r^* = \delta$, and the discount rate. In that case, the optimal consumption profile is flat, provided the real price of home goods is constant over time. In figure A-1, we show the $\lambda\lambda$ schedule, drawn for a given world real interest rate.

We can derive the rate of inflation of nontraded goods (in terms of traded goods) in the home goods market as a function of the relative size of endowments (y_{t+1}/y_t) and the growth rate of consumption. For given

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[6] See Dornbusch (1985) and Frenkel and Razin (1987).
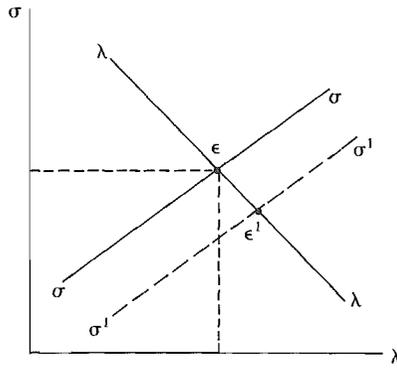
Figure A-1

endowments, the equilibrium price will be rising if consumption is rising over time. This is shown as the schedule $\sigma\sigma$.[7]

$$\sigma_t = \sigma(\lambda_t; y_{t+1}/y_t) \quad \sigma_1 > 0, \ \sigma_2 < 0 \tag{A.2}$$

When the endowment profile is flat, the equilibrium of this economy, the path of consumption is also flat and the real exchange rate between home and traded goods remains constant. This is the equilibrium shown at point E in figure A-1. This equilibrium may or may not involve a trade imbalance. If the country, for some historical reason, is a net debtor, then there will be trade surplus just sufficient to pay the interest on the outstanding debt. If the country is a creditor, consumption is permanently above the value of the income endowment, the difference being financed by the interest income.

This model can be used to look at three kinds of disturbances: current endowment changes, future endowment changes, and transitory changes in world interest rates. To illustrate the working of the model consider a future (permanent) change in the endowment of home goods. In figure A-1, this is shown as a downward shift of the $\sigma\sigma$ schedule. Consumers respond immediately to the higher level of permanent income, but the endowment of home goods has not yet changed. The current price of home goods is therefore bid up relative to future levels ($\sigma < 1$ in figure A-1), which means that the consumption-based real interest rate rises.

The equilibrium profile of consumption will be upward tilted ($\lambda > 1$). What does this imply for the trade balance? The answer depends on the

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[7] Let P_t be the price of home goods and c_t the level of consumption. Then $\sigma_t = P_{t+1}/P_t$ and $\lambda_t = c_{t+1}/c_t$.

degree of intertemporal substitution. If there is little substitution, we must expect a trade deficit as consumers spend income they have not yet received. But if the response to real interest rates is strong ($\lambda\lambda$ in figure A-1 is nearly flat), then there is a possibility that higher *future* income leads to a present trade surplus. Exactly the same result applies if there is a transitory decline in the current endowment of home goods: spending is almost unchanged, because permanent income is virtually unchanged. The decline in home goods' endowment leads to a higher current price and hence the expectation of a declining price as output returns to normal in the future. The declining price of home goods (deflation) raises real interest rates, which tends to reduce the extent of consumption smoothing. A trade surplus in response to a fall in output is possible if the interest response of the consumption profile is very high.

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Discussion

W. Max Corden*

Professor Dornbusch has given us a stimulating and wide-ranging paper that deals with many issues. Here I shall take up just one topic, namely the question of whether current account deficits matter or whether there is an "adjustment problem." As he points out, the "new classical" model does not have a place for an adjustment problem.

Let me begin by considering one of the central themes of this conference, namely the massive current account imbalances of the United States, Germany, and Japan. It is conventionally argued that these imbalances should be reduced and that Japanese or German fiscal expansion would contribute—as supplements to U.S. fiscal contraction—in dealing with the problem. Given that the United States is now close to its full employment or full capacity output level, the mechanism by which Japanese (or German) fiscal expansion would reduce the U.S. current account deficit would be as follows: Japanese fiscal expansion would raise world interest rates, and that would reduce U.S. investment. U.S. private savings and the budget deficit need not be affected. The question then is whether it is really desirable that the U.S. current account be reduced by cutting U.S. investment. Is not the real problem that the budget deficit is too high or the personal savings rate too low?

The moral is that it is not the current account itself that is significant but rather the major components that make it up, that is, the fiscal

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balance, private investment, and private savings. One should focus on the optimality or non-optimality of these.

One approach is to argue that the private sector can look after itself, so that the levels of private savings and private investment are not a matter of public policy concern at all. Only the budget deficit and its components (expenditure and revenue) are. The current account, as such, does not matter.[1] A country may be in fiscal balance, and its savings may be high by any objective standards, while an investment boom based on reasonable expectations of the profitability of investment may produce a current account deficit. That should be no problem. After all, in the nineteenth century the United States was a deficit country, and Canada and Australia have consistently run current account "imbalances," essentially reflecting their favorable investment opportunities.

Of course savings or investment may not be optimal because of various public-policy-imposed distortions, expecially distortionary taxes, but then the policy recommendation is to adjust these. If it is thought that private savings are too low for some reason—for example, private misjudgments or myopia—and no direct measures are possible to rectify this, extra public savings should substitute. But can we be sure that governments or those who advise them know better what the savings rate should be?

One might also ask whether it matters that Germany lends its excess savings to other European countries, or to countries outside Europe, rather than using them at home, provided the uses of the funds are sound. It matters no more than when funds flow from one part of Germany to another. One must look at the underlying savings and investment behavior, private and public, to assess the desirability of these flows, and hence whether current account imbalances within Europe are a problem. This bears on issues raised in Professor Branson's paper.

The "new classical" (debt neutrality) approach assumes that private behavior is optimal but adds the implication that such behavior takes into account the fiscal situation—that is, future tax obligations incurred. In its extreme form, it argues that private savings behavior fully compensates for budget deficits, so that fiscal policy (referring to public deficits, not the level of government expenditure) should not matter at all.

One can thus contrast three approaches. First, the traditional approach, which is still popular: policymakers have a view about the optimal level of national savings and hence (with private and public

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[1] I developed this argument, with qualifications and elaborations, in Corden 1986, pp. 43–51 and 171–173.

investment given) about the optimal current account, while private savings behavior is *not* assumed to be socially optimal. Fiscal policy is then recommended to compensate for departures of private savings from optimality: if private savings fall below the optimum and this leads to a current account deficit, a policy of fiscal contraction designed to improve the current account will be proposed.

Second, the new classical approach in its early (extreme) version, which implies that fiscal policy may well be non-optimal—or determined in some arbitrary or political way—but private savings behavior (which is optimal) compensates fully for fiscal policy effects, so that optimal national savings result. In that case, not only does the current account not matter, as Dornbusch notes, but the budget deficit does not either. As Dornbusch has observed, this extreme result has to be qualified once allowance is made for individual mortality (and possibly for other realistic considerations discussed in the debt-neutrality literature).

Third, the point of view I advanced at the beginning of these comments, which is between these two extreme positions and coincides, I think, with where Dornbusch comes out. Because the private sector does not fully offset the possible non-optimal savings (or dissavings) behavior of the public sector, the budget deficit *does* matter, even though the current account as such does not.

Reference

Corden, Warner Max. 1986. *Inflation, Exchange Rates and the World Economy*, Chicago: The University of Chicago Press, 3rd ed.