

ESSAYS IN INTERNATIONAL FINANCE

No. 170, July 1988

THE DOLLAR AND THE
POLICY-PERFORMANCE-CONFIDENCE MIX

SHAFIQL ISLAM



INTERNATIONAL FINANCE SECTION

DEPARTMENT OF ECONOMICS

PRINCETON UNIVERSITY

PRINCETON, NEW JERSEY

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International Finance Section

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THE DOLLAR AND THE POLICY-PERFORMANCE-CONFIDENCE MIX

1 Introduction

Although the dollar has descended substantially from its early 1985 peak, the debate on the causes of its spectacular rise over a four-and-a-half-year period remains unresolved. There are two key points of disagreement. One is the extent to which the dollar's appreciation can be explained by shifts in "economic fundamentals." The other is what these fundamentals are and how they affect exchange rates.

Even those who agree on the first point seem to disagree violently on the second. The difference of opinion is greatest among those who subscribe to the "fundamentalist school." The mainstream view is that the principal cause of the dollar's appreciation was the dramatic rise in the current and prospective U.S. federal budget deficit. But there are many who disagree. These critics believe that the dollar's strength reflected factors such as the rapid decline in U.S. inflation, a rise in long-term profitability in the United States due to tax cuts and deregulation, and the role of the United States as a "safe haven" at a time of rising economic disruptions and political uncertainties abroad.

This essay is an attempt to move the debate closer to resolution by reexamining the causes of the strong dollar within a broad conceptual framework. The framework is based on the premise that while changes in macroeconomic policies influence exchange rates, the relationship cannot be neatly pigeonholed within a system of rigidly specified behavioral equations. Exchange rates are determined in speculative-asset markets, where the state of market psychology and the degree of "confidence" critically influence the way market participants respond to new information on all economic and non-economic variables and developments that are deemed relevant. A principal message of this essay is that we can better understand the spectacular swings in the key exchange rates in recent years by examining them in relation to shifts in what could be called the "policy-performance-confidence (ppc) mix."

This essay is based on two drafts I wrote when I was with the Federal Reserve Bank of New York—one in December 1985 and the other in May 1986. I have made no special attempt to incorporate subsequent developments in the analysis or to update the data used. I would like to thank Jeffrey Sachs and Warwick McKibbin for the simulation results, Sally Moran for competent research assistance, and an anonymous referee for helpful suggestions.

Section 2 briefly reviews the dollar debate. Section 3 offers a broad conceptual framework within which both short-term movements and medium-term swings in exchange rates under a floating-rate system can be explained. This framework explicitly recognizes that shifts in macroeconomic policy affect exchange rates in markets where psychological factors play important roles in the determination of exchange rates. Section 4 assesses the fiscal explanation of the strong dollar with the help of some impressionistic evidence and results from model simulations. Section 5 uses the ppc-mix approach to explain the dollar's behavior from 1980 to 1985. The dollar's decline is explained in section 6. The final section summarizes the key conclusions.

2 A Brief Review of the Debate

It is widely held in both the United States and abroad, in both popular and academic circles, that the prevailing U.S. fiscal policy and its prospective path were largely responsible for the dollar's spectacular rise between 1980 and 1985. Although the lines of reasoning advanced in support of this view have not always been the same,¹ the core of the argument can be summed up as follows: Massive federal budget deficits in the United States created a huge excess demand for savings, resulting in high interest rates and the strong dollar—the two levers that worked together to bring in foreign savings by gradually widening the “safety valve” of the U.S. current-account deficit.

A leading proponent of this view, Martin Feldstein, offered the following deficits-dollar linkage:

When the government borrows on a vast scale, it creates a vacuum in the domestic capital market that sucks in capital from abroad. Massive current and projected government borrowing has driven up the real interest rate on long-term U.S. government and corporate bonds. The higher interest rate makes dollar-denominated bonds more attractive to investors both at home and abroad. The increased demand for dollar securities causes the value of the dollar to rise relative to other currencies. The strong dollar results in an enlarged trade deficit. The capital inflow is the financial consequence of that enlarged trade deficit as we borrow and sell U.S. assets to pay for that trade deficit.²

Observers who subscribe to this view tend to attach varying degrees of importance to two other factors as well: (a) nonaccommodating U.S. monetary policy (U.S. monetary-fiscal policy mix) and (b) contractionary fiscal policies in Europe and Japan (fiscal asymmetry). By contrast, they disagree widely on the importance of such other factors as the dramatic decline in

¹ For a discussion of some of these major differences, see Islam (1984).

² See “The U.S. Emerges as a Capital Importer,” *Journal of Commerce* (June 27, 1985), p. 17A.

U.S. inflation and the "safe haven" status of the United States. What is common to these experts, however, is the view that U.S. fiscal policy is the dominant explanation of the strong dollar.³

There are those who disagree. Some dispute the link between the federal budget deficit and high U.S. interest rates, others dismiss high U.S. interest rates as the main force driving the dollar up, and yet others challenge both linkages. The "fundamentals" these critics favor usually include the underlying strength of the U.S. economy, the improvement in the after-tax rate of return on U.S. investment, the decline in U.S. inflation, the U.S. economy as a "political safe haven," the poor economic performance and "structural rigidities" in Europe, and the debt crisis in the developing countries. To quote from the Congressional testimony of a prominent critic, Beryl Sprinkel, then Under Secretary for Monetary Affairs of the U.S. Treasury:

General confidence in U.S. economic performance and the Administration's firm commitment to noninflationary growth began to dominate market assessment of exchange rates. At times, "safe haven" considerations appear to be more influential than underlying financial and economic considerations. Interest rates are also a factor from time to time, but my basic conclusion is that they have not been the dominant explanatory factor in dollar strength.⁴

In the same testimony, Sprinkel elaborated his views of the linkage between high U.S. interest rates and the strong dollar:

I know that many observers believe that our deficits are causing high interest rates. . . . It is important to look first to see if interest rates and exchange rates are closely related. If they are, then we should discuss the factors determining U.S. interest rates. But I believe my testimony makes the point clearly that interest rates have not been a major determinant of exchange rate movements over the past 3-4 years. Therefore, I do not believe that the question of the relationship between budget deficits and interest rates is particularly relevant to our discussion today.⁵

One purpose of this essay is to shed some light on how two observers can look at the same set of data on exchange rates and interest rates and come to diametrically opposite conclusions. Needless to say, the disagreement is rooted not in the differential access to raw data but in the conceptual frame-

³ Some experts attach little importance to the role of all other factors, including U.S. monetary policy, in their fiscal explanation of the strong dollar. Branson (1985), for example, dismisses several popular explanations, and does not even consider the role of U.S. monetary policy. "The conclusion is clear," he says, "the shift in the budget did it!"

⁴ Testimony to House Banking Committee, Oct. 17, 1983.

⁵ The deficits-dollar view has been challenged from abroad as well: "[That] it is just this budget deficit which artificially keeps the dollar rate in the air is certainly a very one-sided and inadequate argument" (Emile van Lennep, former Secretary-General of the Organization for Economic Cooperation and Development, as quoted in the *Washington Post* (Sept. 8, 1984), p. D10.

work within which the data are processed. It is to the development of a more useful framework that I turn now.

3 A Conceptual Framework

Exchange rates are determined in speculative-asset markets, where psychological factors such as “confidence” and “herd mentality” play an important role. The broad conceptual framework developed here weaves this fact into what standard theory says about the exchange-rate effects of fiscal policy and the monetary-fiscal policy mix. This framework is designed to serve several purposes. It shows how a rising government budget deficit can lead to a rising trade deficit by driving up real (inflation-adjusted) interest and exchange rates, and how the linkages are influenced by shifts in private savings and investment. It points out that whether a rise in the budget deficit leads to a real appreciation of the home currency through higher inflation or through nominal appreciation depends crucially on the degree to which monetary policy accommodates the deficit and on the credibility of that monetary policy. Finally, it highlights the fact that exchange rates are determined in asset markets, so that the exchange-rate effects of shifts in policy depend critically on what is often described as the state of market confidence in the currency.

Savings, Investment, and the Budget Deficit

A major building block of this framework is a well-known macroeconomic accounting identity: current-account balance = general (federal, state, and local) government balance + domestic private-sector balance. The current-account balance is a broad measure of trade balance that includes international transactions in services and transfers. Private-sector balance is the difference between either gross or net private savings and gross or net private investment. Thus any government-sector deficit must be financed either by domestic funds generated through a surplus in the domestic private-sector balance or by foreign funds brought in through a deficit in the current-account balance.

Changes in the private sector's savings and investment behavior can affect the link between the government budget balance and the current-account balance. For example, even if a country achieves a balanced budget, it will run a current-account deficit if domestic private investment exceeds domestic private savings. And a country with a government budget deficit need not run a current-account deficit if the private sector is able to generate enough excess savings to meet the government's financing needs. Therefore, the effect of a fiscal expansion (a tax cut or a spending increase not matched by a tax rise) on the current-account balance depends ultimately on how pri-

vate agents and official (e.g., monetary) authorities, at home and abroad, respond to the fiscal shock. An outline of some of these responses and their interactions follows.⁶

A discretionary increase in the government budget deficit leads to an excess demand for savings and output. Under conditions of less than full employment, both output and real interest rates rise. Interest rates may rise even before future deficits do as the forward-looking asset markets respond to expectations of a future rise in interest rates. The upward pressure on long-term real interest rates is likely to be even stronger if future deficits are projected to remain high or go even higher. Furthermore, if the monetary authorities target nominal or real GNP growth, then the interest-rate effects of a fiscal expansion will be more pronounced as the output effects are reduced by a tighter monetary stance.

With flexible exchange rates and a high degree of capital mobility (relatively few barriers to international capital movements and high substitutability between domestic and foreign financial assets), a relative rise in domestic real interest rates leads to an excess demand for home assets. But this increase in the *desired* net capital inflow cannot be realized without a matching deterioration in the current account. This is because a country can increase its net foreign borrowing only by increasing its net imports of goods and services.

If the current account is initially in balance, the *realized* net capital inflow increases to the extent that a deficit emerges in the current account as higher aggregate demand leads to higher imports. The remaining excess demand for home assets results in higher foreign prices for these assets through a real appreciation of the currency. The higher real exchange rate, as well as further increases in aggregate demand reflecting multiplier effects of the fiscal impact, then lead to additional widening of the current-account deficit, allowing the realized net capital inflow to increase over time. Thus, with high capital mobility a higher budget deficit is primarily financed by foreign funds and not by higher excess domestic savings. Put another way, a fiscal expansion does not "crowd out" the interest-rate-sensitive sectors, as would be the case in a closed economy (or an economy with open trade but low capital mobility) at or near full employment. Instead, the crowding out falls on the exchange-rate-sensitive (tradable) sectors.

Monetary Policy, Portfolio Balance, and the Current Account

The nature and the dynamics of this crowding out, however, depend on (a) the stance and credibility of monetary policy and (b) the ability and will-

⁶ This analysis is based on a generalized version of the Mundell-Fleming model, the framework most economists use to explain effects of policy shifts on exchange rates (see Mundell, 1963, and Fleming, 1962).

ingness of foreign investors to lend funds *relative* to the size and duration of the current-account deficit. Inadequate understanding of these linkages has caused unnecessary confusion in the deficits-dollar debate.

Experience suggests that excessively large budget deficits often lead to a monetary accommodation that results in a depreciating nominal exchange rate. This prompted some critics to question whether excessively large U.S. budget deficits could be responsible for the nominal appreciation of the dollar. The criticism, however, brings out the role of monetary policy and inflation in the transmission mechanism. With high capital mobility, a fiscal expansion is likely to lead to a real appreciation of the home currency. But whether this real appreciation materializes through higher inflation or a nominal appreciation depends, among other things, on the degree of monetization of the fiscal deficits and, more important, on the response of inflation and inflationary expectations to this monetary-fiscal mix. The *nominal* appreciation of the dollar may therefore have stemmed not so much from the current and anticipated U.S. fiscal policy itself as from the monetary response to it.

Also, whether a policy-induced increase in the government budget deficit is financed more by domestic savings or more by foreign savings ultimately depends on the degree to which foreign investors are willing and able to lend foreign funds (degree of capital mobility). If foreigners refuse to finance an emerging current-account deficit at the prevailing interest and exchange rates (low degree of asset substitutability), domestic interest rates rise further and the home currency depreciates. These developments, in turn, keep the current-account deficit from rising significantly, and the higher budget deficit is mostly financed by domestic funds generated through higher private savings and lower private investment. Thus, the macroeconomic outcome of a fiscal expansion resembles the outcome in a closed economy where a higher budget deficit is accommodated either by a crowding out of private investment (under conditions of full employment) or by a relative rise in private savings (if there are unemployed resources).

Finally, the willingness of foreign investors to accumulate home assets at the prevailing exchange and interest rates is also influenced by the size and duration of a country's current-account deficit. We have already seen that with high capital mobility a discretionary increase in the budget deficit leads *initially* to a real appreciation of the exchange rate and a rise in the current-account deficit, matched by higher net capital inflows. But as foreign investors continue to accumulate domestic assets, the perceived risk associated with them rises. This upward shift in risk pushes domestic interest rates up and the nominal and real exchange value of the currency down. Over time, the depreciation reduces the current-account deficit and an increasing proportion of the budget deficit is financed by domestic savings. The adjustment

can even take the extreme form of a “crisis in confidence,” where a sudden jump in perceived risk results in a collapsing currency and rising domestic interest rates, ultimately causing a slump in economic activity accompanied by higher inflation.

Confidence and Bandwagons: An Asset-Market Approach to Exchange Rates

The discussion so far has summarized some of the key insights offered by standard macroeconomic theory on the relationships among fiscal policy, exchange rates, and the current account. But shifts in macro policies are not the only source of fluctuations in exchange rates. In fact, what complicates matters is that too many other variables—economic developments as well as other developments with perceived economic implications—affect exchange rates, sometimes in ways that are not clear even to many market participants, let alone to those who spend their time developing theories of exchange-rate determination.

Under a floating-rate system, exchange rates are determined in speculative-asset markets, where currency values change as agents assess and reassess future return and risk factors in light of new information. Market expectations—correct or false—of future events, and market assessments—reasonable or nonsensical—of those events affect a currency’s exchange rate. These market assessments are often heavily influenced by the state of “confidence” in the currency, which essentially is a judgment of whether the currency is fundamentally weak or strong.

While economic fundamentals such as interest rates, inflation rates, and relative current-account positions influence exchange rates, these variables comprise a small part of the information set to which market participants react. At times, the variables on which the exchange market focuses may have no place in the standard theories of exchange rates. What matters for exchange-rate movements is not how one theorist or another thinks one fundamental or another should affect exchange rates but how market participants respond to new information at a particular point in time.

Recently, some exchange-rate experts have reacted to the strong dollar by chiding the market for “getting it wrong.” The problem, though, is not necessarily an ignorant market but a lack of consensus among experts on what the fundamentals are and exactly how they affect exchange rates. There is also little agreement on what the “right” exchange rates are at any particular time. This lack of clear guidance from the economics profession partly explains why market participants create their own “theories” as they go along and often exhibit bandwagon behavior.

This state of confusion is not peculiar to the foreign-exchange market; it represents the normal state of affairs in all speculative markets. The wide

distribution of expectations of future prices in those markets is not evidence of market inefficiency. It reflects ignorance and uncertainty—ignorance of the true model and uncertainty about the future values of the relevant variables. Nor is the failure of economists to agree on the equilibrium values of various asset prices evidence of professional incompetence. Asset prices at any point in time reflect not only the market's judgment of where prices should be on the basis of all available information but its bet on what the future holds. In other words, both current and long-run equilibrium asset prices depend on a series of variables that are not amenable to rigid specification and quantification.⁷

In this environment, it is not rational for an individual investor to bet against the market on the basis of a particular model of equilibrium exchange rates. Indeed, a rational strategy should involve a "Keynesian beauty-contest approach": try to guess what others will guess the market's guess to be.⁸ This is precisely the strategy most foreign-exchange traders and speculators follow. Those who hold out against the market for too long either learn their costly lesson and drop this tactic or get weeded out by the process of "natural selection."

Exchange-market participants fall into two broad categories: (a) traders (the market makers) and short-term speculators with time horizons measured in hours and days and (b) long-term investors and portfolio managers with time horizons measured in months and years. The market makers (usually foreign-exchange traders in large commercial and investment banks) adjust current rates according to their assessment of "news" that they consider relevant. They buy dollars (and drive the price up) when there is "good news" and they sell dollars (and drive the price down) when there is "bad news." At times, the distinction between good and bad news may have little grounding in economic reasoning or considerations of long-term sustainability of the exchange rate.

⁷ Tobin (1980) has aptly summarized the problem of estimating equilibrium exchange rates: "No one has any good basis for estimating the equilibrium dollar-mark parity for 1980 or 1985, to which current rates might be related. The parity depends on a host of incalculables—not just the future paths of the two economies and the rest of the world but the future portfolio preferences of the world's wealth owners. . . . In the absence of any consensus on fundamentals, the markets are dominated—like those for gold, rare paintings, and—yes, often equities—by traders in the game of guessing what other traders are going to think."

⁸ Keynes (1964, p. 156) described this contest of "picking six prettiest faces from a hundred photographs" this way: "Each competitor has to pick, not those faces which he himself finds the prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects average opinion to be."

Furthermore, at different times traders focus on different sets of fundamentals or assess them differently. A run of good news can create a bullish market for the dollar in which traders tend to focus on good news and ignore bad news. In other words, how the market adjusts the value of a currency in response to a new development depends critically on the state of confidence in that currency. Short-term speculators who are not market makers behave the same way, but they do not directly set exchange rates.

These traders and speculators also use "technical analysis" for guidance in deciding the direction of the next move and setting the "trading range" at any particular time. If rates move out of the current trading range (break "chart points," to use the market jargon), the rules of technical analysis help in deciding the next trading range. The key dictum of technical analysis is that "the trend is your friend until it bends." Thus the theory of exchange rates followed by foreign-exchange traders tends to encourage "bandwagon behavior." Of course, if rates move "too fast" in one direction, traders engage in short-term "profit taking" by closing their positions and slowing down the bandwagon from time to time.

Portfolio managers and long-term investors usually play the role of stabilizing speculators. They are the ones who are supposed to have a long-run view of exchange rates. Indeed, no bandwagon started by the market makers can survive for long if challenged by the longer-term investors. However, if a situation develops in which there is no agreement in official and professional circles or in the market on how high a rate is too high or how low a rate is too low, then even long-term investors begin to ride the bandwagon. If a bandwagon is not checked by official interventions, this behavior can be intensified and prolonged. For example, even if long-term investors believe that the dollar will fall sometime in the future, they may nevertheless buy dollars over the short run if the short-run trend is upward and there is no indication that the long-run constraints are beginning to bite. Each investor assumes that once the dollar turns around he or she will be able to jump off the bandwagon before the rest of the crowd. Of course, when "the trend bends" and panic sets in, a few smart or lucky ones get off, but the rest are trapped on board as the value of their investments plunges.⁹

To sum up, exchange rates under a floating-rate system are determined in speculative-asset markets where there is often a great deal of uncertainty and confusion about what the rates should be and where they are heading. In an

⁹ Keynes (1964, pp. 155-156) compares this phenomenon with "a game of Snap, of Old Maid, of Musical chairs—a pastime in which he is victor who says *Snap* neither too soon nor too late, who passes the Old Maid to his neighbor before the game is over, who secures a chair for himself when the music stops. These games can be played with zest and enjoyment, though all the players know that it is the Old Maid which is circulating, or that when the music stops some of the players will find themselves unseated."

environment with no clear-cut guideline pointing the way, the normal human instinct is to go with the crowd. In the presence of a "herd mentality," it is in fact rational for individual investors to blow with the wind unless they have information about future events that they believe will reverse the direction of the wind within the next few hours or days. It is in this environment of fear and greed that shifts in policy and economic performance affect exchange rates. When it comes to understanding exchange-rate movements, whether short-term volatility or medium-term swings, exclusive reliance on regression analysis and other econometric techniques and disregard for nonquantifiable information may be more appealing, but it is not more revealing.¹⁰

4 Deficits and the Dollar: Simple Facts and Model Simulations

Some economists find the dollar's appreciation after mid-1984 difficult to understand but believe the earlier upswing can be explained in terms of shifts in fiscal policy or in the macroeconomic policy mix (Frankel and Froot, 1986). Once again, the argument is that the dollar strengthened because U.S. interest rates rose, and interest rates rose because the federal budget deficit widened. A closer inspection of facts, however, reveals that this fiscal story of the strong dollar with its deficit/interest-rate/exchange-rate linkage fails to explain the dollar's initial appreciation during 1981-82 and only partially accounts for its prolonged strength thereafter.

Impressionistic Evidence

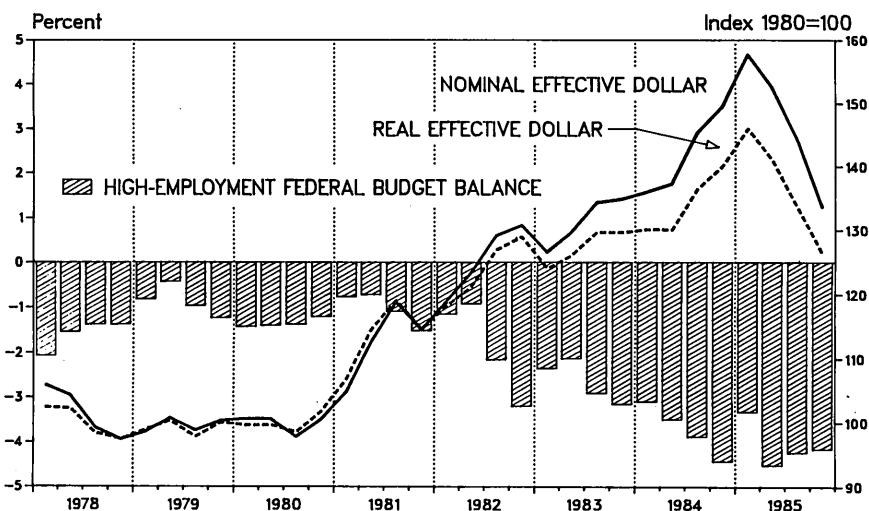
Cyclically adjusted measures of federal and general government budget deficits suggest that U.S. fiscal policy was contractionary in 1981, the year that marked the beginning of the dollar's prolonged appreciation (Figure 1 and Table 1). Before we return to the question of whether anticipation of higher future federal deficits caused the dollar to rise, some basic facts on the deficits-dollar linkage could be instructive (Table 2).

Between the first half of 1979 and the first quarter of 1982, U.S. interest rates, both short and long, rose sharply in nominal and real terms. At the same time, the trade-weighted value of the dollar rose almost 20 percent both in nominal and real terms.¹¹ However, the high-employment (struc-

¹⁰ This conclusion is strongly supported by the Meese and Rogoff (1983) finding that the leading structural models of exchange rates cannot explain variations in key exchange rates. The result that a random-walk model of exchange rates outperforms the structural models is also consistent with the characterization of the exchange-rate behavior offered here. For a discussion of other econometric troubles with standard exchange-rate models, see Frankel (1983).

¹¹ Throughout this essay, I use an index based on IMF's MERM weights, normalized for four-teen industrial countries. The real (inflation-adjusted) dollar index is derived by adjusting the nominal index for relative movements in wholesale prices.

FIGURE 1
U. S. FEDERAL DEFICIT AND THE DOLLAR, 1978-85



NOTES:

Nominal effective dollar is constructed using IMF's MERM weights, normalized for fourteen industrial countries.

Real effective dollar is nominal effective dollar adjusted for relative movements in wholesale prices.

High-employment federal budget balance is scaled by potential nominal GNP.

SOURCE: Federal Reserve Bank of New York.

tural) U.S. federal budget deficit increased only modestly during this period—around one-half of 1 percent of potential GNP. Thus, while the initial appreciation of the dollar was associated with a dramatic rise in interest rates, these higher interest rates could not be attributed to massive increases in federal budget deficits.

During the next three quarters (from 1982:Q1 to 1982:Q4), the high-employment federal deficit, as a percentage of potential GNP, rose by 2 percentage points, providing significant stimulus to the U.S. economy. Interest rates, however, fell sharply during this period, and the dollar appreciated further—by another 10 percent or so. Also, the U.S. economy experienced a deep recession in late 1981 and during most of 1982. According to our conceptual framework, a fiscal expansion increases output and leads to an appreciation of the home currency by driving up interest rates. What happened during 1982 was quite different: output and interest rates fell sharply, and the dollar appreciated further from levels that were already considered

TABLE 1
 U.S. FISCAL STIMULUS: CHANGES IN CYCLICALLY ADJUSTED GENERAL GOVERNMENT BUDGET BALANCES, 1980-85
 (in percent of potential nominal GNP; - = contractionary)

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | Cumulative Changes | |
|-------------------------------------------------------------|------|------|------|------|------|------|--------------------|---------|
| | | | | | | | 1982-85 | 1980-85 |
| OECD estimates: | | | | | | | | |
| Change in structural budget balance | 0.5 | -0.9 | 0.9 | 0.7 | 0.7 | 0.2 | 2.5 | 2.1 |
| Change in inflation-adjusted structural budget balance | 0.3 | -0.4 | 1.5 | 1.0 | 0.7 | 0.1 | 3.3 | 3.2 |
| IMF estimates: | | | | | | | | |
| Change in cyclically neutral budget balance | 0.6 | -0.3 | 1.0 | 0.7 | 0.9 | 0.2 | 2.8 | 3.1 |
| Average estimate | 0.5 | -0.5 | 1.1 | 0.8 | 0.8 | 0.2 | 2.9 | 2.9 |
| Memorandum item: | | | | | | | | |
| Change in high-employment federal-government budget balance | 0.5 | -0.3 | 0.8 | 0.8 | 1.0 | 0.3 | 2.9 | 3.1 |

SOURCES: *Economic Outlook*, OECD, December 1985; *World Economic Outlook*, IMF, September 1985; U.S. Department of Commerce.

TABLE 2
U. S. FEDERAL DEFICITS, U. S. INTEREST RATES, AND THE DOLLAR
(in percent)

| | 1979:H1 | 1982:Q1 | 1982:Q4 | 1979:H1- 1982:Q1 | 1982:Q1- 1982:Q4 |
|--------------------------------------------------|---------|---------|---------|---------------------|---------------------|
| Effective dollar (1980 = 100): | | | | Percentage Change | |
| Nominal value ^a | 99.7 | 119.0 | 130.8 | 19.4% | 9.9% |
| Real value ^b | 99.7 | 118.3 | 129.0 | 18.7% | 9.0% |
| Short-term interest rate: | | | | Change | |
| Nominal rate ^c | 10.2 | 14.2 | 9.0 | 4.0 | -5.2 |
| <i>Ex post</i> real rate ^d | 1.3 | 7.0 | 3.8 | 5.7 | -3.2 |
| Long-term interest rate: | | | | | |
| Nominal rate ^e | 9.1 | 14.3 | 10.7 | 5.2 | -3.6 |
| <i>Ex post</i> real rate ^f | 0.3 | 7.1 | 5.4 | 6.8 | -1.7 |
| High-employment federal deficit/potential GNP | 0.6 | 1.2 | 3.2 | 0.6 | 2.0 |

^a Constructed by using the IMF's MERM weights, normalized for fourteen industrial countries.

^b Nominal effective dollar adjusted for relative movements in wholesale prices.

^c Quarterly average of daily rates on three-month CDs.

^d Nominal rate adjusted by quarterly average of twelve-month change in consumer prices.

^e Quarterly average of daily yields on ten-year government bonds.

^f Nominal rate adjusted by quarterly average of twelve-month change in consumer prices.

SOURCES: U.S. Department of Commerce and Federal Reserve Bank of New York.

unsustainably high by many observers. Therefore it is difficult to see how shifts in U.S. fiscal policy could have been responsible for the dollar's appreciation in 1981-82.

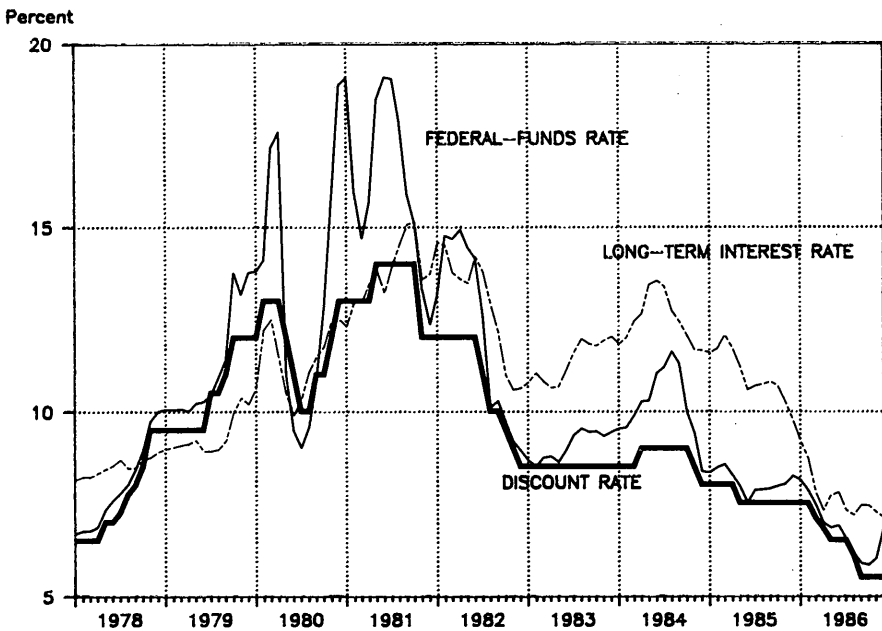
Some observers (see Branson et al., 1985) have argued that *anticipation* of higher future federal deficits, stemming from the Economic Recovery Tax Act of 1981, were responsible for the unusual jump in real-long-term interest rates in 1981 and the recession that followed. The evidence suggests, however, that monetary policy was primarily responsible for the high and volatile interest rates and the two recessions of the 1980-82 period.

Under normal conditions, long-term interest rates stay above short-term rates, reflecting some premium for liquidity and risks such as future inflation. In times of monetary restraint, though, short-term rates rise above long-term rates as monetary authorities curtail the availability of reserves and credit. Thus an analysis of the gap between short and long rates (the yield curve) can provide important information on the forces underlying movements in-

terest rates. For example, if anticipated fiscal deficits lead to a rise in interest rates, a widening of the differential between long and short rates (an increase in the slope of the yield curve) would be expected.

Figure 2 shows that in early 1978 the ten-year government bond rate in the United States was above the discount rate and the federal-funds rate—the two short-term rates over which the Federal Reserve has considerable control. By midyear, the Federal Reserve started raising its discount rate in small steps and allowed the federal-funds rate to rise. By late in the year, both the discount and federal-funds rates exceeded the long-term rate. With the October 1979 change in monetary-control procedures, the short-term rates rose to exceptionally high levels and became unusually volatile. To a large degree, the movements in the long rates were determined by those in

FIGURE 2
U.S. MONETARY POLICY, 1978-86



NOTES:

Federal-funds rate is monthly average of daily rates.

Long-term interest rate is monthly average of daily yields on ten-year government bonds.

Discount rate is end-of-period value.

SOURCES: Data Resources, Inc., Lexington, Mass.; *International Financial Statistics* (IMF) data base.

the short rates rather than determining them. Until mid-1982, the short rates remained above the long rates except during brief periods when restraint on reserves was eased.

During the second half of 1982, when monetary policy eased considerably, interest rates dropped sharply and the yield curve returned to its normal shape. Long rates fell much less sharply than short rates, and a large differential developed in favor of long rates by late 1982. This suggests that by then the current and anticipated stance of fiscal policy may have begun to put upward pressure on long rates. Nevertheless, the anticipation of future fiscal deficits cannot explain why short rates were so much higher than long rates in the earlier period, why long rates were so volatile, or, in particular, why long rates fell so precipitously during the second half of 1982 as high-employment federal deficits soared. These developments are better explained by the direction of monetary policy than by current or anticipated fiscal policy.¹²

Model Simulations

If monetary policy was responsible for the dollar's initial appreciation, can fiscal policy account for its subsequent strength? In January 1982, the dollar was already 25 percent above its 1980 average level in nominal and real terms. By March 1985, the dollar had risen another 25 percent in nominal terms and 20 percent in real terms. Can domestic fiscal expansion and foreign fiscal contraction explain why the dollar went on appreciating so much for so long? More specifically, can domestic fiscal stimulus of less than 3 percent of GNP, distributed over a period of five years from 1980 through 1984, and foreign fiscal contraction of even smaller magnitudes explain a 40 percent nominal appreciation of the dollar over the same period? It is instructive to see how existing multi-country and macroeconomic models of the U.S. economy answer this question.

Table 3 reports estimates of the effects on the dollar and the current account of a sustained increase in U.S. government spending of 1 percent of GNP. The estimates are from three well-known large-scale models and a small global simulation model recently developed by Jeffrey Sachs and Warwick McKibbin.¹³ The large-scale models generate negligible effects on the dollar and the U.S. current account even by the third year. According to these models, then, shifts in U.S. fiscal policy cannot explain movements in

¹² For some econometric evidence in support of this view, see Huizinga and Mishkin (1985).

¹³ See Sachs and McKibbin (1985). The authors do not estimate parameter values of the Sachs-McKibbin model. Instead, they use averages of the various estimates available in the empirical literature. Some parameter values, in particular those reflecting the degree of asset substitutability, are not readily available, and hence they are chosen on the basis of available information. This model, after some revisions and extensions, has become known as the McKibbin Sachs Global (MSG) simulation model.

TABLE 3
EFFECTS OF A SUSTAINED INCREASE IN GOVERNMENT SPENDING OF 1 PERCENT OF GNP:
ESTIMATES FROM MODELS

| | Large-Scale Models | | | MSG |
|----------------------------------------|--------------------|------|------|------|
| | MCM | EPA | DRI | |
| Nominal effective dollar: ^a | | | | |
| First year | 0.3 | 0.6 | 0.8 | 3.4 |
| Second year | 0.9 | 0.7 | 2.0 | 3.5 |
| Third year | 0.4 | 0.3 | 3.5 | 3.5 |
| U. S. current account: ^b | | | | |
| First year | -0.3 | -0.1 | -0.0 | -0.4 |
| Second year | -0.3 | -0.2 | -0.0 | -0.5 |
| Third year | -0.2 | -0.2 | -0.0 | -0.5 |

^a Percentage change from baseline.

^b Change from baseline as percent of GNP.

Abbreviations

MCM: Multicountry model of Board of Governors of the Federal Reserve System, Washington.

EPA: Economic Planning Agency, Tokyo.

DRI: Data Resources, Inc., Lexington, Mass.

MSG: Global stimulation model developed by Jeffrey Sachs and Warwick McKibbin.

SOURCE: Sachs and McKibbin (1985).

the value of the dollar. By contrast, the MSG model records a nominal dollar appreciation of 3.4 percent and a deterioration of the current account of half a percent of GNP in the first year—effects that are sustained through the third year.

Since the exchange rate and the current account are much more sensitive to fiscal shocks in the MSG model, I use this model to simulate the effects of an expansionary fiscal policy in the United States and a contractionary fiscal policy in other OECD countries of the magnitudes that actually occurred from 1981 to 1984. I assume that the policy changes took the form of changes in government spending and that the fiscal shocks were fully known and believed by market participants from the beginning. These assumptions allow anticipated future deficits to affect current exchange rates. No change in monetary growth is assumed, in order to incorporate a nonaccommodating monetary policy.

The results are presented in Table 4. The ECU value of the dollar appreciates less than 8 percent in 1981 and less than 14 percent by 1984. The U.S. current-account balance suffers a steady deterioration, reaching

TABLE 4
FISCAL POLICY, THE DOLLAR, AND THE U.S. CURRENT ACCOUNT:
RESULTS FROM THE MSG MODEL

| | 1980 | 1981 | 1982 | 1983 | 1984 |
|--------------------------------------------|------|------|------|------|------|
| Assumed budget-deficit shock: ^a | | | | | |
| United States ^b | -0.5 | 0.0 | 0.1 | 1.8 | 2.6 |
| Non-U.S. OECD ^b | -0.6 | -1.0 | -1.6 | -1.9 | -2.1 |
| ECU value of the dollar: ^c | | | | | |
| Simulated change | 6.3 | 7.7 | 10.4 | 12.3 | 13.6 |
| Actual change ^d | -1.5 | 18.2 | 28.5 | 35.0 | 42.3 |
| U.S. current account: ^a | | | | | |
| Simulated change | -0.6 | -0.6 | -1.0 | -1.3 | -1.7 |
| Actual change ^d | 0.1 | 0.2 | -0.3 | -1.2 | -2.8 |
| Other simulated effects: ^e | | | | | |
| CPI inflation | -0.4 | -0.8 | -1.4 | -1.1 | -0.5 |
| Long-term real interest rate | 2.3 | 2.4 | 2.6 | 2.8 | 3.0 |

^a Change from baseline as percent of GNP.

^b Approximates averages of available estimates of fiscal shocks.

^c Percentage change from baseline.

^d Since 1979.

^e Percentage points change from baseline.

NOTE: The simulation assumes that the fiscal shocks are fully known and believed by market participants from the beginning and that monetary growth does not deviate from the baseline (monetary nonaccommodation of changes in deficits).

1.7 percent of GNP by 1984. These simulated effects fall far short of the actual changes that took place from 1981 to 1984. The ECU value of the dollar rose 18 percent in 1981, and the appreciation exceeded 40 percent by 1984. During that period, the U.S. current account deteriorated by 2.8 percent of GNP.

Sachs (1985, pp. 174-175) claims that the MSG model can "reproduce the essential quantitative aspects of the U.S. disinflation and strong dollar of the past four years," and he presents results from a simulation that he believes "illustrates that movements in the value of the dollar of the magnitude observed since 1980 can be captured in simulation exercises with plausible shifts in policy." What his simulation results reproduce, however, are difficult to interpret as "the essential quantitative aspects" of the strong dollar from 1980 to 1984. Instead, his results appear to demonstrate that the MSG model is capable of reproducing massive shifts in the value of the dollar if

implausible shifts in policy are assumed. Among his assumptions are (a) a sustained fiscal expansion in the United States of 4 percent of GNP within a single year, 1981; (b) a sustained fiscal expansion in the rest of the OECD of 2 percent of GNP, also in 1981; and (c) an extraordinary decline in monetary growth in the United States during the entire 1981-84 period. The MSG outcome of these imaginary policy shifts is a 39.4 percent jump in the real exchange value of the dollar in terms of the ECU in 1981 and a steady *depreciation* from 1982 to 1984.

While Sachs does not claim to track "the precise timing of the exchange rate movements," the claim that a 39.4 percent jump in the real value of the dollar in the single year 1981 captures "the essential quantitative aspects" of the recent behavior of the dollar is perhaps not warranted either. In addition, the assumed shifts in American policy can hardly be called "plausible." This leaves unsubstantiated Sachs's strong claims and his subsequent conclusion from the same set of results in another context (Sachs, 1986) that "simulation models have shown that the divergence in fiscal policies since 1980 can plausibly account for the movement in long-term interest rate differentials and therefore for the movement in the dollar."¹⁴ As Table 3 shows, existing *large-scale* macroeconomic models cannot explain the recent behavior of the dollar in terms of shifts in monetary-fiscal policies. And even the MSG model, which was developed in response to this failure, can account for only one-third of the dollar's appreciation with plausible assumptions about shifts in macroeconomic policy.

5 The Policy-Performance-Confidence Mix, 1980-85

The empirical evidence presented so far should make it clear that U.S. fiscal expansion and foreign fiscal contraction cannot explain most of the dollar's appreciation from 1981 to 1985. The evidence also suggests that U.S. monetary policy—not U.S. federal budget deficits—played a critical role in the initial phase (1981-82) of the dollar's rise. What follows is an

¹⁴ Feldstein (1986) claims that he has finally come up with the econometric evidence to support the Feldstein doctrine that anticipated federal budget deficits largely explain the dollar's rise from 1981 to 1985. He estimates that "each one percentage point increase in the ratio of future budget deficits to GNP increases the exchange rate by about 30 percentage points" (p. 43). His regression coefficients, however, are based on eleven annual observations with 6 or 7 degrees of freedom. An economics undergraduate would be unlikely to receive a good grade on an econometrics term paper if he dared to use such a small sample to test the null hypothesis. Feldstein does not even attempt to forecast the behavior of the dollar from 1981 to 1984 with his "anticipated deficits" by using a relationship estimated over the earlier period (with quarterly data, one would hope, to increase the degrees of freedom). He also finds that *movements in long-term real-interest-rate differentials explain only a small part of the dollar's appreciation*. Thus he pulls the empirical rug from under his own theoretical reasoning that U.S. budget deficits strengthened the dollar by pushing up long-term real interest rates.

attempt to understand the dollar's behavior from 1980 to 1985 within a broad conceptual framework that takes into account the role of such exchange-market phenomena as confidence and bandwagon behavior.

Monetary Policy, Confidence, and Leaning with the Wind, 1980-82

The United States had begun its fight against inflation by mid-1978, but it achieved little immediate success. The failure to contain inflation and the persistence of large external deficits led to an erosion of market confidence in the U.S. economy and the dollar. On balance, private investors pulled out funds from the United States. In effect, America had to borrow from foreign monetary authorities not only to finance its current-account deficit but to compensate for these capital outflows.

The dollar rescue package of November 1, 1978, was able to halt the run on the dollar by counteracting the loss of confidence with further increases in U.S. interest rates, among other measures. But the dollar remained vulnerable throughout 1979. Even the Federal Reserve's October 1979 switch to reserve targeting in order to assure better control of money and credit growth did not change the negative market assessment of prospects for the U.S. economy. Political developments such as the Iranian hostage crisis only added to market pessimism concerning the U.S. economy and the dollar.

In 1980, U.S. inflation peaked. The dollar moved up and down in response to much greater swings in U.S. interest rates as a result of the Federal Reserve's pursuit of monetary targeting and the imposition and relaxation of credit controls. As the economy unexpectedly bounced back from the short but steep recession of the first half of 1980, monetary policy was tightened again, and by early August interest rates began to climb. Monetary restraint intensified in September in response to a modest rise in inflationary expectations and rapid growth in money and credit aggregates. Both nominal and real U.S. interest rates climbed sharply, and interest-rate differentials began to move against most major currencies. By the middle of October, the dollar began to rise against European currencies. The deutsche mark, especially, came under selling pressure as Germany's current-account deficit failed to shrink.

Interest-rate differentials and declining U.S. inflation were not the only macroeconomic variables that influenced exchange rates in this early phase of the dollar's rise. Interestingly enough, relative current accounts played an important role (Federal Reserve Bank of New York [FRBNY], 1981a). While the U.S. current account swung from a deficit in the first half of 1980 to a surplus during the second half, several European countries, including Germany, continued to run large current-account deficits. Another currency that benefited from an improving current account at that time was the Japanese yen. In fact, the dollar depreciated against the yen until mid-January 1981.

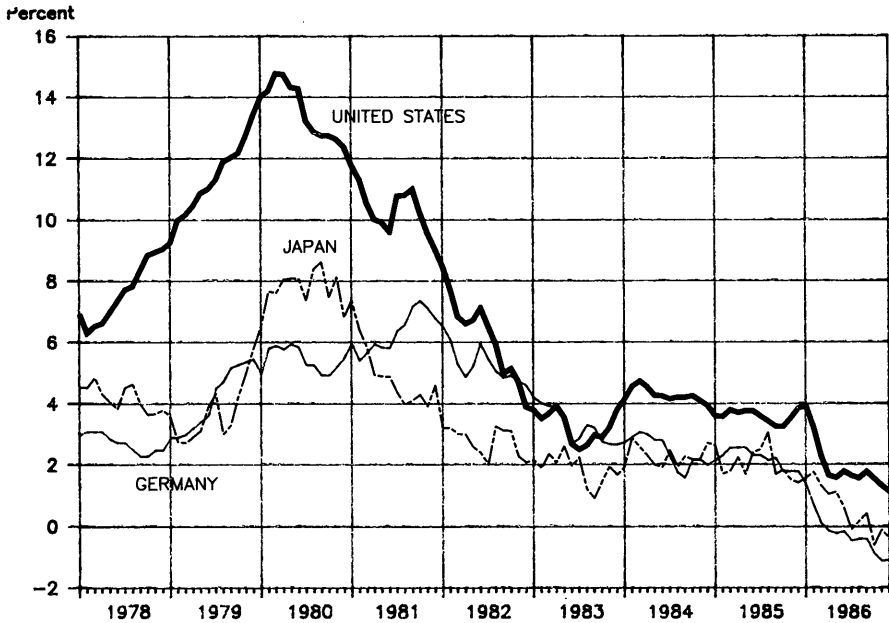
By February 1981, as U.S. inflation continued to decline and long-term

real-interest-rate differentials against the United States rapidly narrowed (Figures 3 and 4), the dollar was appreciating against all major currencies. This may have been the point at which market psychology turned decisively in favor of the dollar and began to influence market assessment of "news" on fundamentals. According to the Treasury and Federal Reserve Foreign Exchange Operations report:

By late January, market sentiment became extremely bullish toward the dollar. At the same time, market participants were inclined to interpret developments affecting other major currencies in a pessimistic light. In this atmosphere, markets became increasingly one way, with the dollar rising virtually every day (FRBNY, 1981a, p. 55).

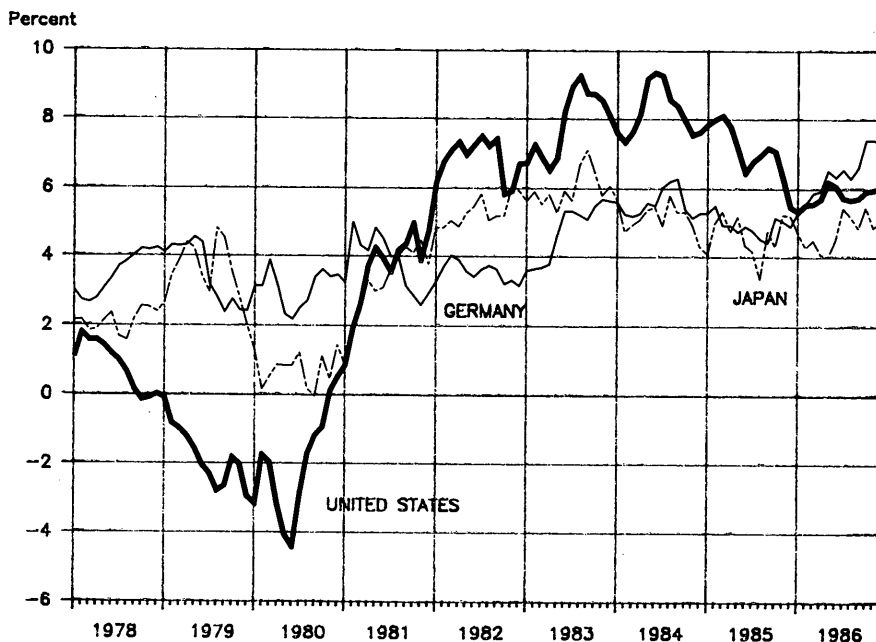
The dollar continued its advance through early August. Market participants responded positively to clear and sustained signs of declining U.S. inflation and progress by the Reagan administration in putting together

FIGURE 3
CPI INFLATION RATES, 1978-86



SOURCES: Data Resources, Inc., Lexington, Mass.; *International Financial Statistics* (IMF) data base.

FIGURE 4
LONG-TERM REAL INTEREST RATES, 1978-86



NOTE: Real interest rates are nominal rates adjusted by twelve-month changes in the CPI. (Nominal interest rates are yields on ten-year government bonds for the United States, public-authority bonds for Germany, and ten-year government bonds for Japan.)

SOURCES: Data Resources, Inc., Lexington, Mass.; *International Financial Statistics* (IMF) data base.

its “supply side” policy package and getting it approved by Congress. Various political and economic problems facing Western Europe also bolstered the dollar. International investors were increasingly eager to place their funds in U.S. assets. On balance, however, foreigners could not lend to America because the U.S. current account was in surplus, and so the rising net foreign demand for dollar-denominated U.S. assets could result only in an appreciation of the dollar.

Market bullishness on the dollar received an additional boost in mid-April when the U.S. Treasury announced that the U.S. authorities “had adopted a minimal-intervention approach and would now intervene only when necessary to counter conditions of disorder in the exchange market.” The foreign-exchange market interpreted this move toward a pure float “as re-

moving a constraint on the dollar's rise" (FRBNY, 1981b, p. 77). But, more important, for the first time in the history of the international monetary system, the government of the country with the key reserve currency gave its official blessing to market bandwagons by asserting its ignorance of the proper range for the reserve currency's exchange rate. It thus removed any credible anchor that would discourage market expectations from taking random walks. The behavior of the dollar in the subsequent period cannot be adequately understood without taking into account the shifts in the U.S. official position toward the exchange market and the Reagan administration's role in influencing market psychology.

The dollar fell from early August to early December 1981 as the economy weakened and interest rates declined. Interestingly, high-employment (structural) federal deficits actually rose during this period in response to the first round of tax cuts and strong increases in federal spending. In fact, the dollar *depreciated* partly as a result of *upward* revisions in the "market assessment" of future federal deficits because of "growing concern over the potential for conflict between fiscal and monetary policy, leading market participants to question whether the Federal Reserve might back away from its anti-inflation stance" (FRBNY, Spring 1982, p. 54).

During the first half of 1982, the Federal Reserve limited the availability of bank reserves in order to return M-1 growth to the official target range, U.S. interest rates rose again, and the dollar resumed its appreciation. In addition, U.S. inflation declined rapidly, and the current account remained in surplus, defying most forecasts.

These developments—a sharp improvement in real-interest-rate differentials in favor of the dollar, rising confidence in the American economy, and a laissez-faire approach to exchange rates by the Reagan administration—were taking place in an environment of increasingly liberalized and deregulated international capital flows (increasing capital mobility). International investors were presented with incentives and opportunities for accumulating dollar-denominated assets on a scale never seen before. In particular, Japanese pension funds, life insurance companies, and trust banks began to take advantage of newly liberalized capital controls by investing heavily in U.S. securities, a process that continues today.

During the second half of 1982, a significant relaxation of monetary restraint led to sharp declines in interest rates in the United States. Nominal yields on ten-year government bonds *fell* almost 400 basis points at a time when high-employment federal deficits *rose* sharply. In spite of the declining interest-rate advantage, the dollar nevertheless appreciated during most of the period.

Why did traders bid up the dollar in the face of the declining interest-rate advantage? Market commentaries suggest that the erosion of the rate-of-

return advantage of dollar-denominated American assets was more than offset by upward revisions of expectations of future dollar rates because of rising relative confidence in the American economy. The “market fundamentals” that apparently boosted the dollar during this period are summarized in the Treasury and Federal Reserve Foreign Exchange operations report:

Favorable prospects for the U.S. economy relative to other industrial countries, apprehension about the international banking system, and concern about economic and political conditions abroad resulted in an increased global preference for dollar-denominated assets which pushed dollar exchange rates sharply higher. . . . Concern over international credit exposures and developing financial strains in various markets around the world were sustaining factors behind the dollar's rise throughout the period. . . . Individual institutions sought to augment their liquidity positions, especially in dollars, against potential funding and cash-flow problems and in advance of important statement dates (FRBNY, Winter 1982-83, p. 52).

This report also offered some clues as to why the perceived risk associated with the other major currencies rose during this period:

Certain currencies that had previously offered clear alternatives to investment in dollar-denominated assets also came under sometimes unfavorable exchange market scrutiny, as participants focused on unresolved political divisions over economic, social and foreign policies in a number of countries. In Germany, Chancellor Schmidt's coalition government collapsed over disputes about economic policy. . . . Also, in Japan, Prime Minister Suzuki unexpectedly announced that he would not seek reelection, and uncertainty over his successor clouded the outlook for the course of Japanese economic policy (p. 53).

This episode clearly illustrates that it is simplistic to attribute the dollar's prolonged appreciation from 1981 to 1985 to interest-rate differentials alone. As stressed in the conceptual framework, the set of “market fundamentals” is much larger than the set of fundamentals admitted by existing exchange-rate theories. The market's responses to changes in these fundamentals vary widely over time and are therefore not amenable to precise specification. In other words, no elegant falsifiable theory of exchange rates can explain the dollar's appreciation during periods when shifts in market psychology are dominant.

Even the notion that the dollar behaved like a “speculative bubble”—rational or not—(Frankel, 1985, and Frankel and Froot, 1986) is based on a questionable premise. Here the key assumption is that we know what the dollar's equilibrium exchange rate is and how the dollar is supposed to react to changes in a narrow set of quantifiable fundamentals. But if there is wide disagreement among experts on those issues, how can one decide which part of the dollar's rise is based on fundamentals and which part is a bubble? Put another way, one economist's bubble is another economist's fundamentals-

driven appreciation. The point is that identification of a dollar bubble requires knowledge we do not have.

Economists tend to dismiss the view that the "safe haven" status of the United States contributed to the dollar's appreciation. They say they do not see why the United States should be considered any safer than Europe or Japan, or that there are no data supporting the safe-haven explanation (Frankel and Froot, 1986). But this argument ignores two important points: (a) Although exchange rates—like other speculative asset prices—are influenced by many variables that are not quantifiable, this does not mean those influences do not exist. (b) What experts believe to be reasonable should not be confused with what influences market assessments of future risk and return. If most market participants considered the United States to be a safe haven, on both economic and political grounds, and were willing to buy more dollar-denominated U.S. assets even as the dollar reached new highs, it seems fair to conclude that the safe-haven status of the United States did, in fact, provide an additional push to the strong dollar.

Deficits and the Dollar, 1983-85

Between January 1983 and March 1985, an already strong dollar appreciated almost 30 percent, before depreciating 30 percent by the time of this writing (August 1987). The evidence for this period indicates that U.S. fiscal policy, by contributing to high real interest rates in the United States, did indeed help to sustain the strength of the dollar. But neither economic reasoning nor empirical evidence suggests that shifts in fiscal policy, or even in the monetary-fiscal policy mix, can be the primary explanation. The U.S. policy mix may explain why the dollar did not depreciate in 1983-84, but it does not explain why the dollar appreciated so much for so long and then suffered so spectacular a drop.

Table 5 presents U.S. data on the current account, general government budget balance, and private savings and investment within the framework of the national-income accounting identity introduced in section 3. The data—all scaled by U.S. nominal GNP—reaffirm that the high interest rates and strong dollar of 1981-82 cannot be attributed to a domestic savings shortage resulting from an increase in the U.S. budget deficit. In 1981, the general government budget deficit *decreased* as a percentage of nominal GNP. The 1982 rise in the budget deficit did not create a significant savings shortage because it was virtually offset by a sharp rise in the private-sector surplus as private investment slumped. This type of sharp decline in private investment, partly offset by a cyclical increase in the government budget deficit, is normal for a recession year.

Data for 1983-85, however, support the view that higher government deficits created an excess demand for savings that had to be met by bringing in foreign savings through a rising current-account deficit. While the general

TABLE 5
 SAVING, INVESTMENT, AND DEFICITS IN THE UNITED STATES, 1980-85
 (in percent of nominal GNP)

| | Reference Period: 1973-81 Average | Recent Period | | | | | | Change | |
|-----------------------------------|--------------------------------------------|---------------|------|------|------|------|------|---------|---------|
| | | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1980-85 | 1982-85 |
| Current account balance | 0.3 | 0.1 | 0.2 | -0.3 | -1.2 | -2.8 | -3.0 | -3.1 | -2.7 |
| General government budget balance | -0.9 | -1.3 | -1.0 | -3.5 | -3.9 | -2.9 | -3.5 | -2.2 | 0.0 |
| Domestic private-sector balance | 1.3 | 1.5 | 1.1 | 3.5 | 3.0 | 0.5 | 0.6 | -0.9 | -2.9 |
| Gross domestic private saving | 18.0 | 17.5 | 18.0 | 17.6 | 17.7 | 18.4 | 17.4 | -0.1 | -0.2 |
| Gross domestic private investment | 16.7 | 16.0 | 16.9 | 14.1 | 14.7 | 17.9 | 16.8 | 0.8 | 2.7 |

NOTE: Domestic private-sector balance is saving *minus* investment for domestic private sector. Domestic private-sector balance and general government budget balance do not exactly sum to current-account balance owing to statistical discrepancy.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

government budget deficit remained on average below 1 percent of GNP from 1973 to 1981, it averaged almost 3.5 percent of GNP from 1983 to 1985. As the U.S. economy, and particularly private investment, recovered strongly, reducing the excess savings of the private sector, the structural (cyclically adjusted) component of the government deficit also rose. These increasingly competing demands for domestic savings (which remained below the 1973-81 average level except in 1984) were met by importing foreign savings through a widening current-account deficit.

Finally, while Table 5 supports the view that America's twin deficits are linked, it says little about how much of the rise in the current-account deficit can be attributed to the rise in the budget deficit. (We have already seen that econometric models show a very weak linkage.) What is striking is that while the budget deficit did *not* change in relation to GNP between 1982 and 1985 (although the structural component did increase significantly), the rise in the current-account deficit was exactly matched by the rise in private investment. This observation should not be interpreted as evidence that an investment boom was primarily responsible for the erosion of the U.S. external position, as some would have it. But it does underscore the point that the current-account deficit would have been significantly smaller if private investment had not recovered so strongly during 1983-84.

Thus the current and anticipated course of U.S. fiscal policy could have led to a very different outcome. Crowding out of private investment, a much smaller current-account deficit, a significantly lower real dollar exchange rate, and even a nominal dollar *depreciation*, accompanied by higher inflation rates, would have been consistent with the same fiscal-policy course. Indeed, those were the outcomes predicted by most economists in early 1983. But events turned out quite differently. The dollar appreciated significantly rather than depreciating as most experts expected, and the economy, particularly investment, grew at a more rapid pace than expected.

From time to time during this period, the dollar appreciated in response to forces other than high U.S. real interest rates arising from the current and anticipated stance of fiscal policy. To begin with, not all the increase in real interest rates during this period can be attributed to higher current and projected budget deficits. The evidence suggests that neither fiscal policy alone nor even the monetary-fiscal policy mix can fully explain the high real interest rates.¹⁵ On top of that, not all the dollar appreciation during this

¹⁵ According to two prominent academic experts (Blanchard and Summers, 1984, p. 316), "High real rates are not due to fiscal policy alone. They are probably partly due to a fiscal/monetary policy mix, and smaller U.S. deficits would, other things equal, bring down interest rates. Interest rates would, therefore, decline . . . if the U.S. recovery slowed down so that U.S. monetary policy was not anticipated to tighten further." Another recent study on the subject (Tanzi, 1985, pp. 551-576) concludes that "a large part of the increase in real interest rates in the 1981-84 period was not associated with the fiscal deficit but other factors."

period can be attributed to the increase in real interest rates, whatever their cause. For example, while nominal and real interest rates in the United States fell sharply from 1984:Q2 to 1985:Q1, narrowing the interest-rate differentials in favor of the dollar, the trade-weighted value of the dollar appreciated almost 15 percent.

The additional appreciation of the dollar during 1983-85 had much more to do with the factors mentioned earlier than with U.S. federal budget deficits *per se*. Real interest rates were higher than can be explained by fiscal policy. Confidence in the U.S. economy was boosted by its unexpected strength, by continued low inflation, and by the Reagan administration's repeated affirmation of a policy of nonintervention in the exchange markets. The fact that the dollar soared even as the U.S. current-account deficit reached massive proportions reflected not only the increasing willingness of international investors to accumulate dollar-denominated U.S. assets but also the increasing opportunity to do so in an environment of liberalization and deregulation of international capital flows. Without the help of this combination of factors, it is highly unlikely that the dollar would have risen so much and remained so strong for so long.

Although the dollar appears to have responded to forces that had little to do with interest-rate differentials resulting from international divergences in fiscal policy, these policy divergences may have influenced the behavior of the dollar by contributing to the policy-performance-confidence (ppc) mix in the United States and abroad. For example, U.S. fiscal expansion may have sustained a strong dollar not only through higher interest rates but also through greater confidence, by improving growth and employment. The very persistence of the dollar's strength may have contributed to added strength by keeping inflation down and generating expectations of an even higher dollar.

Similarly, restrictive fiscal policies in Western Europe may have added to the dollar's strength by depressing output and employment there and thus adversely affecting market confidence in the European currencies. The repeated statements by the Reagan administration that the strong dollar reflected the strength of the U.S. economy may also have encouraged market participants to push the dollar even higher. And there is ample suggestive evidence that bandwagon psychology influenced the dollar's behavior throughout the 1980-85 period, not just during the second half of 1984 and early 1985, as some exchange-rate experts believe.

6 The Dollar in Decline

The dollar's depreciation since its high point in late February 1985 was neither initiated nor sustained by a reversal in U.S. fiscal policy. In fact, the cyclically adjusted U.S. general government budget deficit rose during

1985-86 as the dollar declined. Thus, once again, shifts in U.S. fiscal policy had little to do with the dollar's decline.

Two watershed events played a critical role in breaking the "bullish psychology" concerning the dollar, without creating a crisis of confidence. The first event was the coordination of massive interventions by key foreign central banks and the Federal Reserve following the largely unnoticed meeting in late January of the Group of 5 countries (Britain, France, Japan, the United States, and West Germany). Between January 21 and March 1, the Group of 10 countries (G-5 plus Belgium, Canada, Italy, the Netherlands, Sweden, and Switzerland) frequently intervened jointly in the exchange markets, purchasing nondollar currencies to the tune of \$10 billion. Without publicly admitting it, the United States increasingly reneged on its 1981 vow not to interfere with market forces in the foreign exchanges and sold \$659 million of marks, sterling, and yen in that period (FRBNY, 1985, p. 52). The widespread perception that the dollar, on its own, suddenly reversed course in late February 1985 is simply wrong.

However, quiet interventions without any solid public commitment to bring the dollar down, especially on the part of the United States, were not enough to put the dollar firmly on a downward trend. The commitment came on September 22, 1985, in the wake of what seemed at the time the beginning of a new round of dollar *appreciation*. The finance ministers and central-bank governors of the Group of 5 countries announced in the Plaza Hotel in New York that "exchange rates should better reflect fundamental economic conditions than has been the case." They agreed to cooperate toward the achievement of that goal—that is, they agreed to push the dollar down.

The reversal of the Reagan administration's position that the strong dollar reflected economic fundamentals had a profound impact on the foreign-exchange markets and was the second watershed event. The dollar's sharp drop immediately following the Group of 5 accord appears to have been largely the effect of this *announcement* rather than of the interventions in the foreign-exchange markets *per se*. The administration's publicly expressed desire to see a lower dollar created an environment for the dollar's decline. Authorities and foreign-exchange markets alike increasingly recognized the strength of the protectionist forces in the United States in response to the rapidly deteriorating trade balance, and the dollar's sharp reversal reflected the influence of these political forces.

Once the drive to bring the dollar down had the blessing of the authorities, the market (and some economists) had no problem identifying policy and performance fundamentals that pointed to a lower dollar.

First, the U.S. economy weakened considerably, allowing monetary conditions to ease and interest rates to fall. Although foreign interest rates also came down, differentials in real interest rates favoring the dollar narrowed considerably.

Second, oil prices collapsed. The markets considered lower oil prices to be more beneficial to Japan and the countries of Western Europe than to the United States and hence to be a negative fundamental for the dollar.

Finally, although U.S. fiscal policy remained expansionary in 1985-86, prospects for reducing future federal deficits improved and apparently contributed to the decline in long-term real interest rates. In August 1985, Congress approved a budget resolution intended to reduce the deficit over the medium term. In December, the Gramm-Rudman deficit-reduction plan was enacted, mandating a balanced federal budget by 1991. These fiscal developments led to a downward revision of future federal budget deficits. Monetary easing and anticipated fiscal tightening shifted the current and prospective course of the American monetary-fiscal policy mix.

Some economists have argued that the Plaza agreement in September 1985 had little effect on the dollar's decline because the dollar had been on a declining trend since March, in response to shifts in economic fundamentals. This argument suffers from two serious shortcomings.

First, it ignores the fact that the dollar's sharp rise from December 1984 to February 1985 and its equally sharp drop from March to July 1985 cannot be explained by economic fundamentals. The fundamentals that are usually credited with the dollar's depreciation during 1985-86—the weakening U.S. economy and declining interest rates—were already in place during the second half of 1984, when the dollar did not decline but actually rose sharply. The only “fundamentals” that seem to have broken the dollar's upward momentum in late February 1985 were the heavy coordinated interventions by the key central banks and the growing indications that official U.S. approval of the strong dollar was coming to an end under heavy protectionist pressure from Congress.

Second, with the benefit of hindsight we know now that the dollar peaked in February 1985, but neither the market nor the economists seemed to be sure of that until the September Plaza agreement. Even the week before, no one predicted that the dollar was going to fall so sharply over the next few months. In fact, throughout the summer of 1985 experts were hotly debating the sustainability of the strong dollar, and some were even suggesting that reductions in U.S. budget deficits would only strengthen the dollar by boosting confidence in the U.S. economy.

Furthermore, immediately after the Plaza agreement it was widely held that this official accord could not produce a significant decline in the dollar because there had been no major shift in economic fundamentals. Now that the dollar has fallen substantially, one hears the argument that the Plaza agreement had nothing to do with the dollar's depreciation, which was brought about by shifts in economic fundamentals. If economic fundamentals were already at work in March 1985, why did most experts not even recognize until after the Plaza agreement that the dollar had been on a downward

trend for some time? The answer is that the “fundamentalist” explanation of the dollar’s decline is an *ex post* rationalization of an event that, ironically, was triggered by the Plaza agreement itself. The key “fundamental” that put the dollar on a firm downward path was not a shift in the macroeconomic policy mix but the Plaza accord.

7 Conclusions

This essay has explicitly taken into account various asset-price characteristics of exchange rates in an attempt to understand the dollar’s spectacular appreciation from 1981 to 1985. An important conclusion is that U.S. fiscal policy was not responsible for the dollar’s initial appreciation during 1981-82 and cannot be identified as the primary force behind its further appreciation from 1983 to 1985. However, U.S. fiscal deficits do appear to have sustained the dollar’s strength during the latter period by adding upward pressure on interest rates and by their role in the ppc mix.

Perhaps the U.S. policy that played the most decisive role in shaping the nature of this ppc mix was monetary policy—how it was conducted and, possibly more important, the credibility it gained in the financial markets. The administration’s “free enterprise” posture and “supply side” policy package were regarded as an important positive fundamental by the foreign-exchange market. The effects of the policy mix were further reinforced by protracted fiscal contraction in Europe and Japan. Finally, the Administration’s *laissez-faire* approach to exchange rates and its oft-repeated position that the dollar’s strength reflected the underlying strength of the U.S. economy encouraged market participants to push the high dollar even higher.

The elements of economic performance that promoted the dynamics of the strong dollar were the rapid decline in U.S. inflation, the strong noninflationary recovery of the U.S. economy, and stagnation and unemployment in Europe. These policy and performance developments interacted to give rise to a high level of relative confidence in the U.S. economy *and* high relative rates of return on dollar-denominated U.S. assets. The fact that the value of the dollar soared even as the U.S. current-account deficit reached massive proportions reflected not only the increasing willingness of international investors to accumulate dollar-denominated U.S. assets but also the increasing opportunity to do so in an environment of liberalization and deregulation of international capital flows.

Without these developments, it is highly unlikely that U.S. fiscal policy alone would have led to such a dramatic nominal and real appreciation of the dollar. The massive rise in the structural budget deficit could have resulted in domestic crowding out of private investment, as well as a modest increase in the current-account deficit brought about by expanded domestic demand

and some real appreciation of the dollar. The fact that the rise in the dollar's *real* exchange rate materialized through *nominal* appreciation of the currency rather than through higher inflation had more to do with U.S. monetary policy. And the fact that the dollar's strength was much more spectacular than could be explained by interest-rate differentials had more to do with a rise in confidence in the dollar, with occasional elements of bandwagon behavior. Thus U.S. fiscal expansion—and, to some extent, fiscal contraction in Japan and some major European countries—contributed to the *real* appreciation of the dollar and to the growing current-account imbalances, but other elements in the ppc mix were largely responsible for the magnitude and duration of the appreciation, and for the fact that it took the form of a *nominal* rise in the value of the dollar.

The rapid depreciation of the dollar after February 1985 can also be explained in terms of a shift in the ppc mix. The most important “fundamental” in this turnaround was not a change in U.S. fiscal policy but quiet, coordinated interventions followed by a dramatic shift in the U.S. position in favor of greater management of exchange rates and a lower dollar. With the authorities jointly and firmly pushing the dollar down, other contributing factors were a weaker U.S. economy, an easier monetary policy, some improvement in the prospects for reducing the federal deficit, a sharp decline in U.S. interest rates, and lower oil prices.

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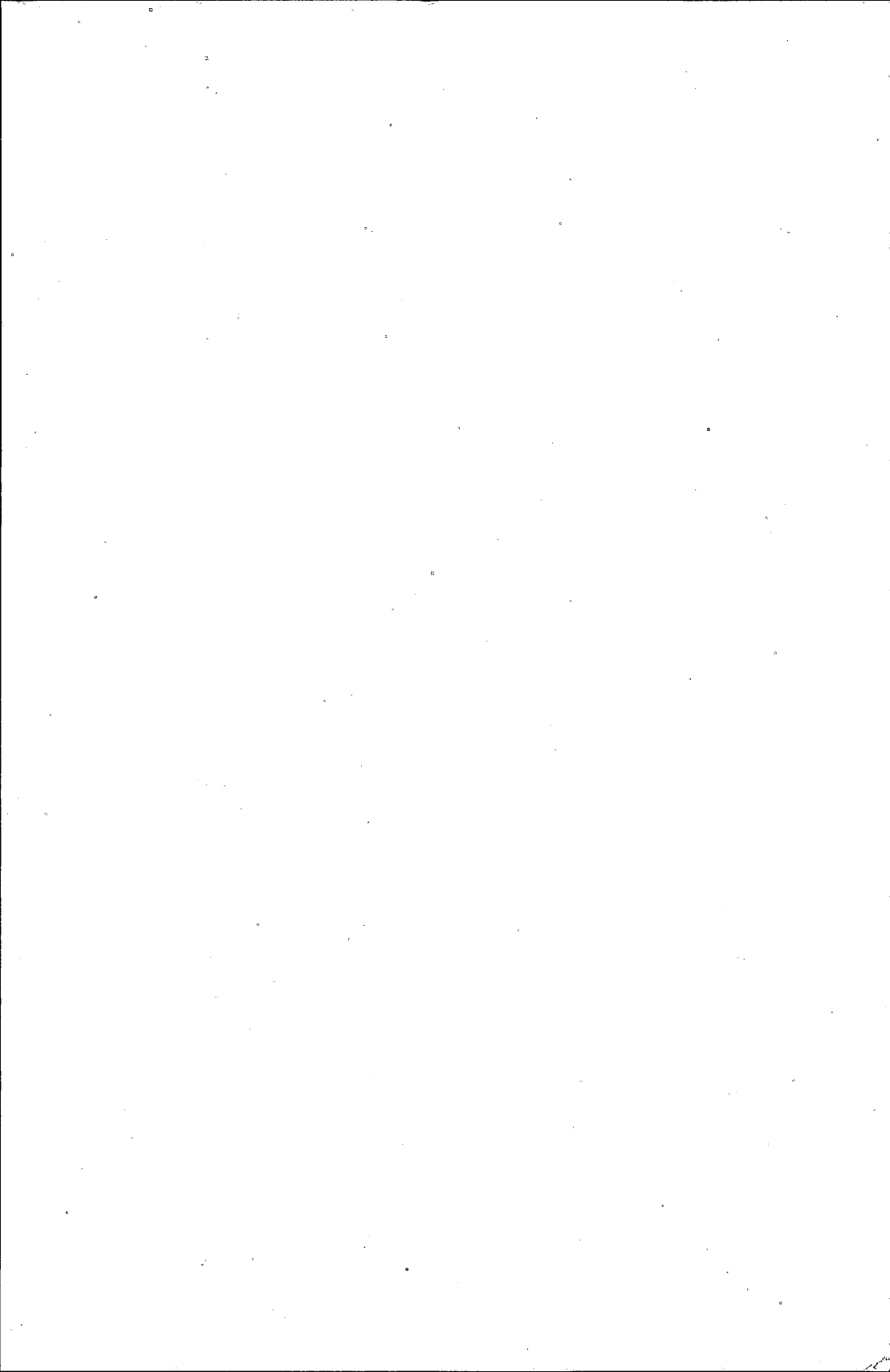
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