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# REVIEW



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# Movements in the Foreign Exchange Value of the Dollar During the Current U.S. Expansion

DOUGLAS R. MUDD

**F**OR seven quarters following the severe U.S. economic slowdown of 1973-75, the foreign exchange value of the dollar rose substantially, increasing by about 8 percent on a trade-weighted basis.<sup>1</sup> The dollar declined slightly only against the currencies of Canada and Switzerland. The most dramatic increases in the foreign exchange value of the dollar over 1975-76 were against the British pound and the Italian lira. In terms of the British pound, the value of the dollar rose by about 30 percent, and against the Italian lira the dollar rose by about 26 percent.

In contrast, since late 1976, the trade-weighted foreign exchange value of the dollar has fallen about 13 percent. Over the past seven quarters the value of the dollar has declined furthest against the Belgian franc (16.7 percent), German mark (20 percent), Japanese yen (52.5 percent), Dutch guilder (15.8 percent), and Swiss franc (46.1 percent). Since fourth quarter 1976, the dollar has appreciated against only one of the world's nine other major industrial countries' currencies, increasing 13.3 percent against the Canadian dollar.<sup>2</sup>

Explanations of this sharp reversal in the trend of the dollar's foreign exchange value are often presented in terms of economic growth rate differentials.<sup>3</sup> Although exchange rate movements can be influenced

by differences in economic growth rates, there is no reason to expect the foreign exchange value of the dollar to be dominated by the relatively rapid rate of U.S. economic growth. Rather, the current downward trend in the value of the dollar against most major currencies can be attributed primarily to differential excess money growth rates, as indicated by differential rates of inflation.<sup>4</sup>

## EXCHANGE RATES AND ECONOMIC GROWTH DIFFERENTIALS

A major factor sometimes cited as the cause of the recent decline in the foreign exchange value of the dollar is the vigorous growth of the U.S. economy relative to economic growth abroad. It has been asserted that as the U.S. economy expanded and national income increased, U.S. imports also rose; increased amounts of imported raw and intermediate materials were required to fuel the expanding U.S. economy, and rising incomes allowed consumers to increase their purchases of imported goods. At the same time, economic growth abroad has been generally sluggish, resulting in weak foreign demand (both business and consumer) for U.S. exports. Thus, the recent U.S. trade deficits (imports of goods and services have exceeded exports since early 1976) are viewed as having resulted from international growth differentials. These trade deficits, in turn, have been viewed as the primary cause of the downward slide in the foreign exchange value of the dollar.<sup>5</sup>

<sup>1</sup>The trade-weighted value of the dollar is a weighted average of the exchange rates between the dollar and the currencies of the United States' twenty major trading partners. The weights take account of the size of the trade flows and are derived from the International Monetary Fund's 'Multilateral Exchange Rate Model'. See Jacques R. Artus and Rudolf R. Rhomberg, "A Multilateral Exchange Rate Model," *International Monetary Fund Staff Papers* (November 1973), pp. 591-611.

<sup>2</sup>The ten major industrial countries considered here are Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Switzerland, United Kingdom, and United States.

<sup>3</sup>Of course, turning points in exchange rate movements differed between currencies. However, by the end of 1976, the foreign exchange value of the dollar was, or began, falling against seven of the nine currencies considered here.

<sup>4</sup>For a critical discussion of both hypotheses, see Herbert Stein, "The Mystery of the Declining Dollar," *The AEI Economist* (American Enterprise Institute for Public Policy Research, September 1978).

<sup>5</sup>This argument ignores the possibility that both output growth and exchange rate changes have a common cause. Thus, autonomous increases in output should result in a depreciating currency. The argument also theoretically neglects the effects of international capital flows on exchange rates. There is not necessarily a causal link between a trade deficit and a depre-

Table I

**OUTPUT GROWTH FOR SELECTED COUNTRIES\***  
Compounded Annual Rates of Change

	<u>Belgium</u>	<u>Canada</u>	<u>France</u>	<u>Germany</u>	<u>Italy</u>	<u>Japan</u>	<u>U.K.</u>	<u>U.S.</u>
1975 I	-4.8%	1.0%	-4.8%	-5.6%	-3.1%	-8.5%	2.0%	-9.0%
II	-6.8	2.0	5.4	-0.2	-3.8	9.7	-6.0	6.4
III	-2.7	4.3	-1.2	3.9	-1.4	4.5	-7.6	10.5
IV	0.4	4.1	13.1	8.1	11.1	8.2	3.7	2.6
1976 I	7.1	13.7	7.7	9.3	10.0	7.7	16.0	9.3
II	15.6	4.6	5.8	5.0	6.6	5.7	-3.3	4.0
III	8.7	-1.8	2.1	1.6	0.4	3.5	2.3	2.7
IV	2.9	2.5	0.4	3.9	9.6	3.3	5.5	2.4
1977 I	-1.8	5.5	8.6	3.2	7.0	7.6	-5.4	7.3
II	2.5	1.4	-5.2	0.4	-10.1	7.6	2.9	5.9
III	-3.9	1.2	2.0	1.0	-2.0	0.5	1.1	5.7
IV	-1.1	6.1	2.0	6.0	-0.5	6.3	-0.7	3.2
1978 I	6.2	2.9	7.4	-0.6	7.2e	10.4	3.2	-0.1
II	NA	4.5	NA	8.8	1.5e	4.4	NA	8.7
1975 I - 1976 IV	3.4	4.1	4.7	4.5	4.4	6.1	1.3	5.4
1976 IV - present	0.4	3.6	2.9	3.1	0.5e	6.1	0.2	5.1

\*Real GNP was used for Belgium, Canada, Germany, Japan, and the United States while real GDP was used for Italy, France, and the United Kingdom. Quarterly data for the Netherlands and Switzerland are not available. Quarter-to-quarter growth rates are shown for the I/1975-II/1978 time span.

NA — Data not available

e — Estimate

Sources: Bank of Canada, Bank of England, Bank of Japan, Deutsche Bundesbank, International Monetary Fund, Organization for Economic Cooperation and Development, U. S. Department of Commerce, Université Libre de Bruxelles.

Table I shows output growth rates since 1975 in the United States and seven other industrialized economies. With the exception of Japan, U.S. output growth over the 1975-76 period was stronger than output growth abroad. Yet, during that period, the trade-weighted foreign exchange value of the dollar rose.

Since late 1976, U.S. output growth has significantly accelerated relative to that of Belgium, France, Germany, Italy, and the United Kingdom. These five cases are consistent with the hypothesis that accelerating U.S. output growth relative to output growth abroad has caused the depreciation of the dollar.

Two cases presented in Table I contradict the argument that the foreign exchange value of the dollar should decrease (increase) when the U.S. economy expands more (less) rapidly than foreign econ-

omiens. Although output growth in Japan since late 1976 has been substantially higher than in the United States, the value of the dollar in terms of the yen has fallen sharply and steadily. Further, although the value of the dollar in terms of the Canadian dollar has risen steadily since fourth quarter 1976, U.S. output growth has been significantly faster than that in Canada. In the cases of both Japan and Canada (the United States' major trading partners), the view that recent movements in the foreign exchange value of the dollar have been in response to relatively more rapid economic growth in the United States than abroad is inconsistent with experience.

Two cases presented in Table I contradict the argument that the foreign exchange value of the dollar should decrease (increase) when the U.S. economy expands more (less) rapidly than foreign econ-

ciating currency. For example, suppose an autonomous increase in U.S. output results from a technological innovation raising U.S. productivity. Even if a trade deficit results from this autonomous increase in U.S. real income, capital inflows would be induced by the now higher real rate of return on investment in the United States. There is no clear indication of the direction of change in the foreign exchange value of the dollar. Therefore, higher real income growth in the United States than abroad does not, by itself, produce a depreciation of the dollar.

Thus, the hypothesis that exchange rates adjust to offset differences in economic growth is not clearly supported by the data. One limiting factor of this hypothesis is that it overlooks the importance of the impact of price differentials on international trade. For example, a U.S. resident might buy a new car if his real income increases. However, the choice between a domestically or foreign produced car depends upon, among other things, price differentials. The alternative hypothesis which incorporates these price effects explains movements in the foreign exchange value of the dollar over the 1975-78 period better than

the one which relies solely on differential rates of growth.

### AN ALTERNATIVE VIEW OF EXCHANGE RATE MOVEMENTS

Another explanation of the primary cause of changes in the foreign exchange value of the dollar, which takes account of the association between exchange rates and inflation differentials, views exchange rate movements as essentially monetary phenomena, influenced strongly by such factors as money stock growth.<sup>6</sup> Real factors, such as output growth, also are recognized as affecting exchange rate movements, but through monetary channels.<sup>7</sup> When exchange rate movements are viewed within a monetary framework, changes in exchange rates reflect relative changes in excess money stock growth.

#### *Excess Money Stock Growth*

When the U.S. money stock, for example, is greater than the amount people desire to hold (given the prevailing levels of real income, interest rates, prices, and price expectations) an excess supply of money exists in the United States. As people attempt to reduce their holdings of money to desired levels, spending will rise. The increase in spending will be distributed among goods and services, including both real and financial assets. If the increased spending is not accompanied by a similar rise in the supply of goods and services, U.S. prices will rise. Although price increases temporarily stimulate output growth, the long-term pattern of output growth is limited by resource growth. If the U.S. money stock continues to exceed the amount of money people are willing to hold, total spending will continue rising, but only in the form of rising prices. In this framework, excess money stock growth is the primary cause of inflation, and changes in excess money stock growth are manifested by changes in the rate of inflation.

The dollar "price" of foreign currencies will also rise — that is, the foreign exchange value of the dollar will fall — if there is excess money growth in the United States, but not abroad. The rise in spending re-

sulting from an excess supply of money in the United States will result in increased purchases of both domestic and foreign goods, services, and financial assets. If there is no excess money growth abroad, foreign demand for U.S. goods, services and financial assets will not rise immediately. Similarly, if excess money stock growth exists both in the United States and abroad, but that growth in the U.S. is more rapid than abroad, then U.S. spending on foreign goods, services and financial assets will rise relative to foreign purchases in the United States. At the original exchange rate, the quantity of dollars which U.S. residents will want to spend to purchase foreign goods and services will be larger than the quantity of dollars foreigners want to buy to make purchases in the United States. As a result, the "prices" of foreign currencies in terms of the U.S. dollar will rise. In other words, the value of the dollar in foreign exchange markets will fall.

As this discussion indicates, exchange rate movements are not caused by relative changes in money stock growth rates, but by relative excesses of money growth above the amount demanded in each country. In attempting to determine if money growth has had an impact upon exchange rate movements, changes in the amount of money that people are willing to hold (that is, the demand for money) are critical. For example, the amount of money people are willing to hold will increase if real income rises, if interest rates fall, or if future inflation is expected to decline. There is no reason to expect that the amount of money that people are willing to hold will be the same in all countries or that it changes at the same rate in all countries.<sup>8</sup> Therefore, there is no reason to expect relative money stock growth rates to equal relative excess money stock growth rates.

As shown in Table II, money stock growth abroad has been generally faster than that in the United States since late 1976. For example, between fourth quarter 1976 and mid-1978, the money stock has grown at a 12.1 percent annual rate in Germany and a 9.3 percent rate in Switzerland. Over the same period, the U.S. money stock increased at an 8.1 percent rate. Yet between fourth quarter 1976 and second quarter 1978, the value of the dollar in terms of the German mark and Swiss franc declined 16 and 27.5 percent, respectively. While changes in the demand for money are difficult to measure, the monetary in-

<sup>6</sup>See Harry G. Johnson, "The Monetary Approach to Balance-of-Payments Theory," *Further Essays in Monetary Economics* (Cambridge: Harvard University Press, 1973), pp. 229-49, and Jacob A. Frenkel, "A Monetary Approach to the Exchange Rate: Doctrinal Aspects and Empirical Evidence," *Scandinavian Journal of Economics*, no. 2 (1976), pp. 200-24.

<sup>7</sup>See Michael Mussa, "The Exchange Rate, the Balance of Payments and Monetary and Fiscal Policy Under a Regime of Controlled Floating," *Scandinavian Journal of Economics*, no. 2 (1976) pp. 237-38.

<sup>8</sup>See, for example, Michael J. Hamburger, "The Demand for Money in an Open Economy: Germany and the United Kingdom," *Journal of Monetary Economics* (January 1977), pp. 25-40.

Table II

**MONEY STOCK (M1) GROWTH**  
Two-Quarter Compounded Annual Rates of Change

	Belgium	Canada	France	Germany	Italy	Japan	Netherlands	Switzerland	U.K.	U.S.
1976 IV	6.0%	6.6%	6.9%	4.1%	16.6%	11.4%	4.6%	7.4%	8.2%	5.7%
1977 I	8.3	6.6	5.4	7.3	20.7	7.0	19.7	7.4	5.6	7.4
II	5.4	9.4	7.6	9.2	22.0	0.6	20.5	4.7	14.6	7.9
III	10.3	10.7	10.8	9.3	21.2	6.5	21.7	1.4	22.5	8.4
IV	13.6	12.1	10.9	11.5	18.9	11.9	8.5	-0.7	29.5	8.0
1978 I	8.6	9.3	9.4	17.6	NA	8.4	0.4	14.9	23.6	7.0
II	3.7	6.4	9.7	15.5	NA	11.4	3.0	25.7	11.6	8.3
III	NA	11.6	NA	NA	NA	15.2	NA	NA	NA	9.1

NA — Data not available

Sources: Bank of Canada, Bank of England, Bank of Japan, Board of Governors of the Federal Reserve System, Deutsche Bundesbank, International Monetary Fund, Organization for Economic Cooperation and Development.

terpretation of price determination implies that the rate of inflation in each country can be used to indicate the rate of excess money growth.<sup>9</sup>

### *Exchange Rates and Inflation Differentials*

As shown in Chart I, exchange rate movements since the beginning of 1975 generally have been in the appropriate direction to offset changes in relative inflation rates.<sup>10</sup> Over the 1975-76 period, U.S. inflation, in general, *decelerated* relative to inflation abroad and the foreign exchange value of the dollar generally increased over this period. In the two cases where U.S. inflation accelerated relative to that abroad, the foreign exchange value of the dollar behaved in the ex-

<sup>9</sup>For a discussion of the monetary interpretation of inflation, see Denis S. Karnosky, "The Link Between Money and Prices — 1971-76," this *Review* (June 1976), pp. 17-23.

Changes in the demand for money explain why money growth abroad can exceed U.S. money growth without producing an appreciation of the dollar. Expectations can significantly influence exchange rates in the short run. Suppose inflation is expected to accelerate in the United States but not in Germany and Switzerland. This could cause a decline in the demand for dollars and a corresponding increase in the demand for marks and francs. If the supply of dollars on foreign exchange markets is not sufficiently reduced, the dollar will depreciate against the mark and franc.

<sup>10</sup>For another discussion of this point and a critical look at the monetary approach see Stein, "The Mystery of the Declining Dollar," pp. 3-5.

The relationship between inflation differentials and exchange rates is not exact, especially in the short run. For example, the existence of nontradable goods and services, transportation and brokerage costs, barriers to trade and capital flows, expectations, and government intervention in foreign exchange markets prevent changes in rates of relative inflation from being perfectly reflected in changes in exchange rates. Further, turning points in exchange rate movements and changes in relative rates of inflation can be expected to differ somewhat; excess money growth affects inflation over time, while exchange rates respond more quickly to monetary disturbances. See Jacob A. Frenkel, "Purchasing Power Parity: Doctrinal Perspective and Evidence from the 1920s," *Journal of International Economics* (May 1978), pp. 181-88.

pected manner. U.S. inflation was accelerating relative to Swiss inflation over the 1975-76 period and the value of the dollar in terms of the Swiss franc declined. U.S. inflation also accelerated relative to Canadian inflation between mid-1975 and mid-1976 and the U.S. dollar depreciated in terms of the Canadian dollar during this period.

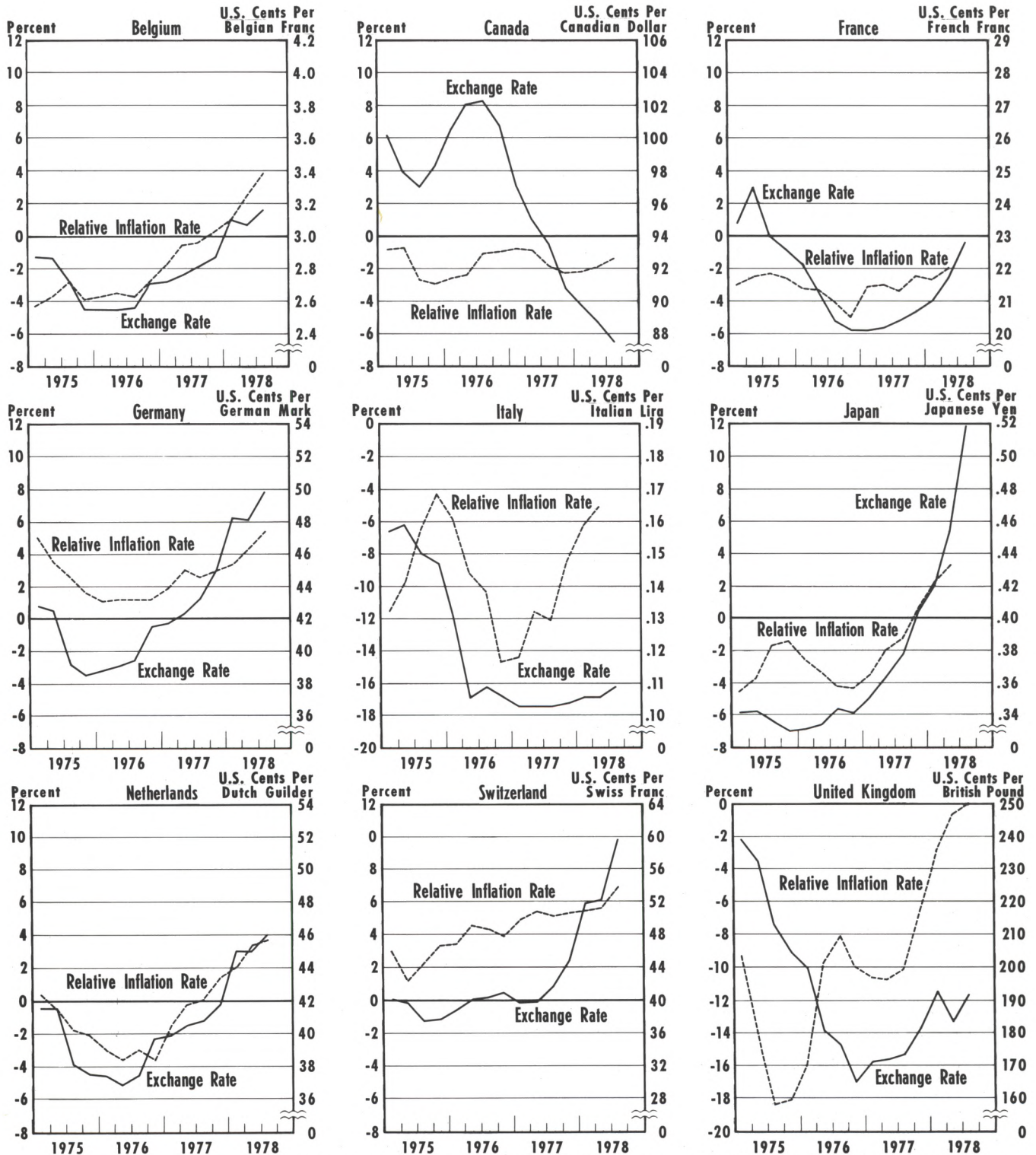
There is a case, however, in which changes in the foreign exchange value of the dollar and the rate of U.S. inflation relative to inflation abroad do not appear to be in offsetting directions. Over the 1975-76 period, U.S. inflation accelerated relative to inflation in the United Kingdom; however, the value of the dollar in terms of the British pound did not decline. In this case, the actions of national governments appear to have had a significant impact upon exchange rate movements over the 1975-76 period. During this period, there were substantial sales of British pounds by national governments, thereby contributing to significant downward pressure on the foreign exchange value of the British pound.<sup>11</sup>

Since late 1976, however, U.S. inflation has in general accelerated relative to inflation abroad and the foreign exchange value of the dollar has, on balance, declined since then. In the one case where U.S. inflation has decelerated relative to inflation abroad, Canada, the foreign exchange value of the U.S. dollar has steadily risen.

The pattern of relative rates of inflation, in most cases, showed a reversal around late 1976. The most obvious cases are those involving the European countries. For example, consumer prices in the United

<sup>11</sup>Official sterling claims on the United Kingdom declined about 60 percent from 1974 to 1976. See International Monetary Fund, *Annual Report 1978*, p. 53.

Chart I  
Relative Rates of Inflation\* and Movements in Exchange Rates



Sources: International Monetary Fund, U.S. Department of Commerce, and Board of Governors of the Federal Reserve System

\*Comparison of rates of change in consumer price index over corresponding four-quarter periods. Example: the U.S.-Belgium relative inflation rate for 1/77 is computed by subtracting the percentage change in the Belgian CPI over the 1/76-1/77 period from the percentage change in the U.S. CPI over the same four-quarter period. CPI data are seasonally adjusted.

Latest data plotted: Exchange rate for all countries-3rd quarter; relative inflation rate for France, Italy, and Japan-2nd quarter; other countries-3rd quarter.

States increased at a 5.9 percent rate between first quarter 1975 and fourth quarter 1976. The corresponding rates of inflation for six European countries were: Belgium (9.1 percent), France (9.6 percent), Germany (4.7 percent), Italy (15.7 percent), Netherlands (8.9 percent), Switzerland (2.1 percent), and the United Kingdom (19.3 percent). Since fourth quarter 1976, however, U.S. inflation has accelerated to a 7.6 percent rate. In contrast, inflation in the European countries has decelerated: Belgium (5.3 percent), France (9.2 percent), Germany (3.2 percent), Italy (13.8 percent), Netherlands (5.0 percent), Switzerland (1.5 percent), and the United Kingdom (10.9 percent). In short, the monetary view of exchange rate changes is consistent with the experience shown in Chart I.

### SUMMARY

When exchange rate movements are viewed as basically monetary phenomena, the declining foreign exchange value of the dollar can be attributed to an excessive growth of the money stock in the United States relative to the monetary actions of other countries. Relative rates of economic growth, operating through the demand for money, do have an impact on the foreign exchange market. As real income grows, the quantity of money demanded increases. If the

quantity of money demanded in the United States exceeds the amount supplied, all other factors constant, the foreign exchange value of the dollar would rise. Thus, a relatively rapid rate of U.S. economic growth, if not resulting from monetary stimulus, contributes to upward (rather than downward) pressure on the foreign exchange value of the dollar.

However, other factors, such as expectations of future accelerations in the rate of inflation, can cause a reduction in the quantity of money demanded. The interaction of money stock growth and changes in the demand for money is indicated by changes in the rate of inflation. The decline in the foreign exchange value of the dollar since late 1976 corresponds with an acceleration in U.S. inflation relative to inflation abroad.

The *cause* of both the relative acceleration in U.S. inflation and the corresponding decline in the foreign exchange value of the dollar are responses to *relatively* more expansionary (or less restrictive) monetary policies in the United States than abroad. The future course of the foreign exchange value of the dollar depends fundamentally upon the success of U.S. monetary policy in reducing the rate of inflation in the United States relative to the future performance of inflation in other countries.



# Commentary on Monetary Economics: An Interview with Karl Brunner

*Professor Karl Brunner is a faculty member at both the University of Rochester, New York, and the University of Bern, Switzerland, and is one of the foremost scholars in the field of monetary theory and policy. He is also a periodic contributor to this Review.*

*In the following interview, which originally appeared in the July 1978 issue of The Banker, Professor Brunner outlines his interpretation of the monetarist approach to economic analysis in response to comments and questions posed by the publishers of The Banker. The interview is reprinted here because it represents a clear articulation of modern monetarist thought and serves to further the understanding of monetarist policy prescriptions.*

*For many years you have been regarded as one of the leading advocates of a strict 'monetary' approach to economic policy. Together with Professor Meltzer you have played a leading part in bringing the monetarist approach to a wider public, both through the Shadow Open Market Committee in the United States and in the past two years in Europe through the Shadow European Economic Policy Committee (SEEPC). How much progress has been made in persuading public opinion of the merits of monetarism?*

Economic policy covers a wide range of measures and the proper role of monetary policy should be clearly recognised. Public opinion occasionally interprets 'monetarism' as a view attributing to money and monetary policy an all-embracing power. This involves a serious misconception. Monetarist analysis essentially emphasises two aspects of the range of policy problems: the relation between monetary growth and the basic rate of inflation, and the relation between monetary acceleration (or unanticipated monetary growth) and temporary changes in output and employment. The first relation determines monetarist propositions about anti-inflationary policies. The second relation determines, on the other hand, proposals bearing on a stable and predictable course of monetary policy. Monetarist analysis implies moreover that monetary manipulation cannot raise the trend of real growth. Neither is monetary expansion a useful device under current circumstances to raise investment expenditures. The falling trend of real growth and investment expenditures is probably dominated by the persistent erosion of the 'rules of the game' required for a well-functioning market

economy. The pervasive uncertainty about economic policy and the gradual attrition of property rights lower real growth and raise the normal level of unemployment. This trend is reinforced by many governmental measures which affect relative wages and prices.

*It often seems as if public opinion is largely on the side of the monetarists now while public policy continues to be inflationary. How do you explain this?*

I doubt that a major portion of 'public opinion' fully accepts the monetarist perspective in matters bearing on monetary policy and monetary events. The English establishment, including the media, cling, with a few exceptions, to the ancient Keynesian story. But let us consider the position of the bureaucracies and officials involved in the formulation and execution of monetary policy. They will find no reason to change their accustomed conceptions and procedures in the absence of serious costs or dangers to their position. The bureaucracies and policy institutions have a strong incentive to persist with their established pattern. The consequence of their misjudgments are usually borne by others. Changes in the conceptions governing an established institution usually require a major crisis, which encourages probing questions and a wide-ranging public debate, combined with a change in the management of the bureaucracy.

*How would you sum up the present state of the debate?*

Indeed, the discussion continues. It continues in scholarly journals and in the arena of public debate.



But it is important to understand that the nature of the discussion has gradually shifted over the years. Substantial propositions originally advanced by monetarist analysis have been incorporated into professional thinking in the United States. Keynesian analysis still thrives on the other hand, even in archaic forms, in Germany and England. The meshing of ideas occurring between centres of active research has, however, unavoidably shifted the focus of the relevant issues over the past years. Three problems have, in my judgment, emerged from recent debates with a force requiring future attention by scholars. These problems are:

- (i) the possibility and usefulness of an activist approach to policy based on optimal control techniques;
- (ii) the relative stability of the private and government sector;
- (iii) the relevant perspective bearing on the behaviour of the government sector.

A neo-Keynesian position asserts the potential of optimal control techniques and an activist approach to policy-making. The Keynesian tradition also asserts the need for a stabilising government sector to contain or offset the inherent instability of the private sector. Lastly, this tradition reflects a conception of government expressed by the 'public interest' or 'good-will' theory of government behaviour. This theory assumes that bureaucracies and politicians in general attempt to maximise social welfare. The alternative position rejects this neo-Keynesian perspective. It emphasises, in particular, that optimal control techniques and activism are likely to create instabilities in the economic process. It also stresses the basic stability of the private sector confronting a de-stabilising public sector. This de-stabilisation is linked to an analysis centered on the *entrepreneurial* behaviour of bureaucracies and politicians. This analysis rejects the 'public interest' theory of government frequently used in discussions of stabilisation policy.

*Why does it seem to have so strong a grip on policy-makers? Or to put the question in other terms: Why do governments inflate when there are no benefits to be derived from such action?*

Is it really so? We need to look more carefully. The apparent intractability of inflation cannot be explained in terms of the linkages and interactions of the economic process. A radical and sustained reduction of monetary growth below a critical benchmark level determined by a country's institutional

environment would effectively remove over time any inflation. The relevant question should thus be addressed to central banks, treasuries and beyond to the nature of the political process shaping the behaviour of these institutions.

Three major channels have unleashed over the past 12 years in various countries excessive rates of monetary growth. One channel works *via* large and persistent government deficits and corresponding pressures on the central bank to finance the deficit. Italy offers a classic example in this respect. Major groups, including the bureaucracy, find it advantageous to expand the budget. This behaviour is motivated by the wealth transfers produced with the expansion of the budget.

Another channel functions *via* large and increasing loans made directly or indirectly by central banks to commercial banks. Such loan expansion accelerates the monetary base and ultimately raises monetary growth rates. There emerges under the circumstances an apparently uncontrollable monetary growth. But this uncontrollability essentially results from the central bank's unwillingness, or political inability, to adjust the interest rate charged on central bank accommodation to the realities of the market place. France and Belgium offer some useful illustration in this context. The crucial link in the inflationary process under the circumstances is the political liability burdening the central bank's interest rate policies. And these liabilities reflect again implicit wealth transfers motivating the political constraints.

Lastly, determined efforts to maintain an undervalued exchange rate produce extensive interventions on the foreign exchange markets. These interventions are converted *via* an acceleration of the monetary base into 'uncontrollable' rates of monetary growth. Maintenance of an undervalued exchange rate involves an abdication of monetary control. Domestic monetary growth is necessarily tied in this case to the inflationary policies of the leading nations. This policy reflects usually, the evident interests of major export industries. It involves again an implicit transfer of wealth, and it is this which lies behind the political pattern we observe.

*So what are the fundamental mistakes made by those with whom you disagree?*

Let us take the OECD as an illustrative example. The OECD vigorously preaches activist financial expansionism as a solution to the major problems of unemployment and low growth. It is caught in old

conceptions and its bureaucracy seems unable to open a meaningful discussion of newer scientific developments. The measured rates of unemployment and sagging investment expenditures that have been recorded in recent years do not reflect a 'deficient aggregate demand problem' of the nature experienced in the 1930s. The role of supply factors and the effect of institutions and policies on incentives to work and to invest, are basic factors not sufficiently recognised in traditional 'Keynesian' conceptions of the world.

*Do you think that price stability is the only economic objective a government should have?*

Hardly. It is an important objective, but the government's essential function should be to provide a stable and predictable framework for the rules of the social game. This will never satisfy the social activist however. But I urge you to consider that social activism tends to produce institutions which lower our living standards and, ultimately, *via* a persistent growth of government, endanger our freedom.

*Is it a fundamental assumption of your position that the real economy is inherently self-stabilising?*

Yes. The Keynesian tradition proceeded on the view that the market system is inherently unstable or prone to settle, whenever left alone, around activity levels substantially below 'potential output'. This perspective, supplemented with the 'public interest theory' of government, explains the activist approach to 'stabilisation policy'. We contend on the other hand that the market system is a shock-absorbing and self-regulating system with built-in stabilising properties. We also contend that the problem can be approached beyond metaphysics and ideology as an issue to be assessed by proper procedures of empirical examination.

*A soft version of monetarism would allow the authorities to use fiscal policy in a discretionary manner, to offset swings in the business cycle, whilst insisting that they finance any budget deficits in a non-inflationary way. You, however, believe in balanced budgets. Why?*

This kind of 'soft monetarism' offers no adequate solution. It encourages actually the bad patterns inherited from the past. It implicitly assumes that the 'government' attends to the public interest and can be relied upon to adjust the budget according to 'the needs of stabilisation policies'. This seems to be somewhat naive in our judgment. The political process increasingly produces a persistent deficit and

larger budgets in the absence of well understood and widely accepted constitutional rules confining the government's fiscal operation. Moreover, a persistent deficit lowers the likelihood of proper monetary control.

*It is often said that monetarists are good at laying down the ground-rules for some ultimate state where a monetary rule can be applied, but not at describing how we get there from the present. Is there force in this criticism?*

None whatsoever. The assertion depends essentially on a tacit constraint imposed on monetarist proposals designed to move the economy towards a non-inflationary growth path. Our opposition claims that no anti-inflationary policies be admitted which lower temporarily employment and output. Such a condition rules out any meaningful anti-inflationary campaign. This is not because we desire lower employment and output. We desire to stabilise the economy around a stable price level and this requires, at this stage, a persistent reduction of monetary growth. This reduction, unfortunately, may produce a temporary decline of employment and output. The likelihood of this result increases with the length, magnitude and variability of the inflationary episode. But the fact remains that there is no other way to control inflation. I should also mention that the Shadow Open Market Committee in the United States and the Shadow European Economic Committee have repeatedly stated the policies required for the transition period.

*A new term has recently crept into the discussion of economic policy, after 'crowding out'. This is 'the wedge'. Could you explain what this is?*

'The wedge' refers to the widening gap between the cost to the employer of employing a unit of labour and the net wage received by the employee. This wedge affects various aspects of unemployment inaccessible to manipulation by aggregate demand. It is remarkable how frequently governments, as recently in England and Sweden, cope with labour market or budget problems with measures which increase the size of the wedge and thus intensify labour market problems. An increase in the wedge lowers employment and lengthens the average duration of unemployment.

*Another common criticism of monetarism is that it sacrifices all other objectives of policy to that of achieving price stability. For instance, to attain price stability interest rates might have to go to such a*

*level as to damage investment. How do you answer that criticism?*

The issue is simply this: the social cost of persistent inflation exceeds, in our judgment, the social cost of a once-and-for-all return to a stable price level. Persistent inflation does not proceed in the pleasing fashion of a smooth and fully anticipated path involving fully-adjusted institutions and behaviour. It is an erratic process with large uncertainties generating large variations in real growth and a comparatively high level of normal unemployment. The road leading out of inflation is costly and unpleasant indeed, but the alternative is much worse. And as to interest rates, even politicians learn on occasion that the best way to lower interest rates *permanently* is to lower the rate of inflation. Of course, the reversal of the inflationary trend induces *temporary* increases in rates of interest. But acceptance of permanent inflation, in order to prevent a temporary rise in interest rates, is a typical example of the policies responsible for the contemporary mess.

*Why have no central banks adopted a fixed monetary rule?*

What are a central bank's incentives to do so? The traditional procedures serve in general the established bureaucracies much better. They offer more opportunities for evasive rhetoric. In particular, they permit banks to claim credit for good conditions and allow useful disclaimers of responsibility for bad developments (eg inflation). It is still remarkable to observe, however, that some central banks are approaching a policy of monetary control which need not involve a fixed rule of rigidly constant growth.

*Having monetary targets seems in some ways to make it more difficult for a central bank to control the money stock. For instance, when monetary growth overshoots the target, institutions stop buying government debt because they anticipate higher interest rates and this in turn boosts such monetary expansion. What is your answer?*

This involves two aspects. One bears on the institutions governing the quality of monetary control. Many central banks (France, Belgium, Germany, England and others) proceed under arrangements which substantially lower the likelihood of pursuing effective monetary control. Inappropriate institutions may effectively obstruct any rational monetary management. Central banks frequently disregard this issue and fail to recognise the importance of developing monetary arrangements which raise the degree

of monetary control. Control will never be perfect and the question about speculation induced by deviations from the desired growth path continues to attract attention. But such deviations hardly affect securities with longer maturities. Given a credible policy of monetary control, investors will know that short-run errors in monetary growth will approximately wash out over time. Any short-run overshooting of monetary targets will not produce a decline in bond prices under such circumstances. It is even doubtful that very short-term rates would be seriously destabilised. Interest rates seem much more prone to fluctuate in response to policies geared to stabilise interest rates.

*Given international mobility of capital, an attempt by a single country to control money by raising interest rates may, it is argued, result simply in an inflow of capital which will swell the money supply further. Do not small open economies have to accept the international inflation rate?*

Most definitely not. Switzerland has not accepted the prevailing international rate of inflation. A regime of floating exchange rates offers each country an opportunity to determine the monetary base to the last cent in accordance with its wishes. This implies approximate control of monetary growth, irrespective of capital flows induced by relative interest rates or relative movements of exchange rates and interest rates.

*Do we have to accept that exchange rates are bound to be volatile?*

The volatility of exchange rates simply reflects the uncertainty about the course of financial policy in various countries. Substantial revisions in the markets' evaluation of future policies are immediately impounded into the current exchange rate. A stable and reliable course of financial policies reduces the fluctuations in exchange rates. No degree of intervention can be a substitute for proper financial policies. Intervention undermines monetary control (Germany and Switzerland) and affects exchange rates beyond the shortest horizon only in cases where markets revise (in response to persistent intervention) their expectations of the course of monetary policy.

*Nevertheless central banks seem to be intervening on a larger and larger scale in the markets. Why is this?*

Whether the magnitude of intervention increases remains to be seen. To some extent interventions are

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an instrument for controlling the monetary base without operating on domestic credit markets or manipulating advances to banks. But the major force behind the massive intervention is probably concern about the short-run effects on export industries.

*Monetarist analysis has recently been applied to many areas beyond its original and continuing concern with monetary policy — for instance, to the economics of bureaucracies.*

The connection between monetarist analysis and the emerging work on non-market institutions and the political process is the systematic use of proper economic analysis in both fields of research. There is no monetarist analysis of bureaucracy but there is indeed an analysis of bureaucracy. The motivation of this work lies in the increasing range and importance of the phenomenon.

*Is this new economic approach going to put the sociologists out of business?*

Hardly. More likely is the expanding application and use by sociologists of the analytic framework developed over many decades in economics. This development is visible in political science and also in psychology.

*Monetarism has the reputation of being a hard, even heartless doctrine. How would you answer such a charge?*

What is more heartless than irresponsible and foolish advice, or false promises? The hard problems do not change under a deceitful rhetoric. We have experienced rising and erratic inflation, increasing 'unemployment' and lower rates of real growth as a result of 'warm-hearted' policies. It is time to penetrate beyond this cloud of verbalism. We cannot expect to cope effectively with difficult problems under an essentially immoral commitment to refuse a hard and honest examination of the nature of the issues.