Perspectives on the Stagflation
of the 1970's*

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INTRODUCTION

Five years after the first global recession of the post-war period, macroeconomic policies of industrial countries continue to be preoccupied with inflation, slow growth, balance of payments disequilibria and volatility in the foreign exchanges. Although industrial countries resumed growth after the world-wide recession caused by the oil crisis and the restrictive monetary and fiscal policies of 1973/74, the growth rates that have been achieved have been much below historical averages for the post-war period. The average growth rates of output and foreign trade in OECD countries in 1974/80 are about half of the average growth rates realized in the previous decade.

As a result, there remains at the present time substantial underutilization of productive potential, even with due allowance for structural changes in labor supply, obsolescence of capital equipment because of higher energy costs and more demanding environmental requirements, and structural unemployment in industries exposed to increasing competition from developing countries.

The battle against inflation still shows no signs of a victorious end. In the United States, the sustained recovery from the recession of 1974/75 led to acceleration of inflation, balance of payments pressures and a sharp depreciation of the dollar culminating in the dollar crisis of October 1978. In Europe, too, inflation began to accelerate in 1979, largely because of the strengthening of the dollar and the increases of oil and other raw material prices. The established pattern of accelerating inflation leading to monetary tightening is being repeated with the likely outcome of another inflationary recession in the world economy.
Despite the flexibility of exchange rates, international economic interdependence has been closer than ever before. With slow growth in the world economy, no industrial country has been able to sustain domestic-led growth without running into the balance of payments constraint and resulting pressures in the foreign exchange market. This is true of the United States in 1978, of Germany in 1979/80 and of France, Italy and the United Kingdom at several times after 1973.

Although the flexibility of exchange rates has made it possible for central banks to control the supply of money, the external constraint on monetary policy has remained binding. A policy of constant money supply growth has not stabilized the exchange rate against changes in foreign interest rates, or against changes in the balance of payments. Partly for this reason, money supply oriented policy has been difficult to maintain in practice. Many countries have used monetary policy actively to support the exchange rate at the expense of domestic output and employment. Other central banks have accommodated inflationary pressures originating from currency depreciation with the result of a 'vicious circle' of depreciation leading to inflation, and inflation leading to more depreciation.

For individual industrial countries inflation and the balance of payments have been the principal constraints on more expansionary policies. For industrial countries as a group, the supply of energy has been the major constraint on recovery. After 1973 there has been no increase in OPEC production of oil, and the total consumption of energy in industrial countries has increased at an average annual rate of only one per cent. Given low price elasticities of the demand for, as well as the supply of, energy in the short run, rapid growth in industrial countries leads to sharp increases in oil and
other energy prices, and consequently to a worldwide inflationary recession. This is exactly what happened in 1979, and there is no reason to expect that this experience could not be repeated again in the future once growth resumes after the recession of 1980/81. A further complicating factor is the vulnerability of oil supplies to political instability in the Middle East, as evidenced by the Iranian revolution and the war between Iran and Iraq.

In the economic environment of the past decade conduct of macroeconomic policies has not been easy. It is not surprising that most countries have failed in achieving objectives that were earlier considered not only desirable, but also feasible. But what could have been done differently? There are those who continue to argue that price stability with steady growth could have been, and still could be, achieved if only the central bank maintained a steady growth of the money supply. If the monetarists are right, the world has paid an enormous price for not following their advice, and there should be no further delay in stabilizing the growth of the money supply. Indeed, there is no reason why this could not be done immediately since the technical problems of monetary control are easy to overcome.

As far as we know, there is no example of success of monetarist policies, so that one has to rely either on faith or on the power of theoretical reasoning based on indirect empirical evidence. The purpose of our paper is to question the theory and the evidence upon which the monetarist doctrine is based. First we offer a broad historical perspective on the 1970's. After that we discuss the three main problems of macroeconomic policy suggested above: the problem of inflation, the problem of balance of payments adjustment and exchange rate behaviour; and the problem of energy. In each case we argue that the basic monetarist proposition - that constancy of the rate of growth of the money stock assures price stability with prosperity within a reasonable
time period rests on assumptions which are both implausible and at variance with the facts of the 1970's.
1. THE END OF STEADY GROWTH IN THE WORLD ECONOMY

The oil crisis of 1973/74 and the collapse of the Bretton Woods system mark the end of more than two decades of exceptionally high and steady growth in industrial countries. From 1949 to 1972 these countries grew at an average annual rate of 4.8 per cent compared with 2.3 per cent in the two decades from 1920 to the beginning of World War II, and to 2.8 per cent in the 'golden age of capitalism' from 1871 to 1913. From 1973 to 1980 the average annual growth rate of OECD countries is back to the average growth rate realized during the hundred years of 'modern economic growth' (as shown in Table I). Even excluding the recession years of 1974, 1975 and 1980, the growth rate from 1976 to 1979 averages only 4 per cent.

Historically, the post-war 'belle époque' was a period of exceptionally rapid growth for most countries, with the notable exception of the United States, which had its fastest growth in decades prior to World War I. The post-war period is one of historically rapid growth even for the United Kingdom — a fact which is often left unnoticed when her post-war performance is compared with that of other countries. It is also of interest to note from Table I that, apart from Canada, Japan and Germany have been the fastest growing major countries for the past hundred years, except for the 19th century and the early part of the 20th century when the United States was the fastest growing region. The figures recorded in Table I also reveal the exceptional stability of the post-war growth era, as roughly captured by the standard deviation of growth. In fact, taking the coefficient of variation of the 1971-1976 period as the basis of comparison, we find that the post-war period was four times more stable, whereas both the 'golden age' and the 1970's were twice as stable as the average. The period from
### Table 1

**POST-WAR GROWTH IN HISTORICAL PERSPECTIVE**

Average Annual Rates of Change of Output

<table>
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<tr>
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<tr>
<td></td>
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<td>Mean</td>
<td>St. Dev.</td>
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<td>St. Dev.</td>
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<td>Japan</td>
<td>3.0&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5.6&lt;sup&gt;a&lt;/sup&gt;</td>
<td>2.0</td>
<td>8.0</td>
<td>3.7</td>
<td>6.1</td>
</tr>
<tr>
<td>Germany</td>
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<td>2.2</td>
<td>1.9</td>
<td>12.5</td>
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<td>3.0</td>
</tr>
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<td>11.2</td>
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<td>4.1</td>
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<td>16 Industrial Countries</td>
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<td>1.9</td>
<td>5.0</td>
<td>2.3</td>
<td>4.2</td>
</tr>
</tbody>
</table>

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<sup>a</sup> Data begin in 1866.

<sup>b</sup> OECD countries

Standard deviation computed dividing by number of observations in sample period.

**Sources:** Maddison, op. cit., except 1973–1980; OECD Economic Outlook, 1980 forecast.
1913 to 1949, on the other hand, has a coefficient of variation which is less than half of the hundred-year average.

The commitment of governments to full employment and the refinement of the tools of stabilization policy after the Keynesian revolution is often credited for the stability of the economies of industrial countries in the post-war period. Such commitment has in itself exercised a stabilizing influence on expectations by increasing confidence of the private sector that disturbances that normally occur in a market economy will be of only transitory duration. But the confidence appears to have been largely lost during the 1970's.

Most of the growth of output of industrial countries in the post-war period is attributable to the increase in labour productivity, documented in Table II. The labour force grew at an annual rate of one per cent — the same rate as the rate of growth of the population — while the number of hours worked per person declined. Thus growth entailed a substantial increase in per capita incomes and in material welfare, even allowing for the ill-effects of growth that came to be emphasized in the late 1960's and particularly in the 1970's.

Examination of the causes of this remarkable increase in productivity is beyond the scope of this paper; the universal slowdown of productivity growth after 1974 is, however, relevant for our purposes. For the seven major industrial countries growth of productivity declined from an average annual rate of 3.8 per cent in the period 1963-1973 to an annual average of 1.4 per cent from 1973 to 1980. In the United States and in Canada there was no increase in labour productivity during this period, while employment continued to increase at annual rates of 2.1 and 2.7 per cent, respectively. In the United Kingdom productivity growth declined from an annual rate of
## TABLE II

**THE SLOWDOWN OF PRODUCTIVITY GROWTH**

Average Annual Rates of Change of GNP/Employment

<table>
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</tr>
<tr>
<td>Canada</td>
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<td>0</td>
</tr>
<tr>
<td>Japan</td>
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<td>3.5</td>
</tr>
<tr>
<td>Germany</td>
<td>4.6</td>
<td>3.1</td>
</tr>
<tr>
<td>France(^b)</td>
<td>4.6</td>
<td>2.7</td>
</tr>
<tr>
<td>Italy(^b)</td>
<td>5.4</td>
<td>1.9</td>
</tr>
<tr>
<td>United Kingdom(^b)</td>
<td>3.0</td>
<td>0.4</td>
</tr>
</tbody>
</table>

a) Forecast values for 1980.

b) GDP/Employment

3.0 per cent in 1963-1973 to an annual rate of 0.4 per cent in the period 1979-1980 while employment continued to decline. In the other major countries labour productivity continued to increase after 1973 but at a much slower pace, while employment either declined, most notably in Germany, or increased only slowly.

The 1970's was the first time after the Great Depression that employment became a global problem. Despite the slower growth of productivity after 1974, particularly outside the manufacturing sectors, the average rate of unemployment of the OECD countries has not declined from the high level it reached in 1955. In France, Italy and the United Kingdom unemployment continued to increase through the recovery of 1976/79 while in Germany the unemployment rate decreased moderately but only because the influx of new migrant workers came to a halt. In the United States the recovery of 1976-1979 reduced unemployment from 8.5 per cent in 1975 to 5.8 per cent in 1979. But even in that peak year the rate of unemployment was still higher than at any time between 1948 and 1974 except for the recession years of 1958 and 1960 when the unemployment rate reached 6 per cent. In Canada the unemployment rate continued to increase after 1975 when it already was at the historically high level of 7.1 per cent.

In Europe youth unemployment has become a serious economic and social problem and is generally expected to get worse in the next few years. Another severely affected group, not shown in labour market data for the big European countries, are potential migrant workers from the underdeveloped parts of Europe and from Northern Africa.

Table I shows that for the OECD countries as a group the annual growth rate of output from 1973 to 1980 has been 2 per cent less than in the previous decade. This means that the level of OECD output in 1980 is about 16 per cent
less than what it would be had the average 1949-72 growth rate been maintained throughout the 1970's. The decline in the growth of real income of the OECD countries has been even greater because of the deterioration of their terms of trade vis-a-vis OPEC. This effect is not taken into account in GNP figures evaluated at constant prices. It remains an open question as to how much of the cumulative output loss of 16 per cent is attributable to an unavoidable decline in the growth of productive potential and how much of it is due to the direct and indirect effects of a prolonged global recession. The same question obviously applies also to the decline in the growth of labour productivity shown in Table II.

There is no doubt in our view that even allowing for the obsolescence of capital equipment because of the increase in the real cost of energy and other unavoidable reductions in the growth of output and productivity, industrial countries made inefficient use of their productive potential in the 1970's, just as they did in the 1930's. It is certainly too early to conclude that restoration of steady growth, characteristic of the quarter of a century before the oil shock of 1973, is an impossibility. After the experiences of the inter-war period, few expected steady growth and material progress after World War II. Yet, the world economy grew almost without interruption for a quarter of a century. It may be that the economics profession is at the present time too ready to conclude that the 1970's has set a new norm to which aspirations must adjust.

It has been noted that world-wide inflation and world-wide fluctuations in economic activity have always been associated with well-identified global disturbances, such as the two world wars -- associated with the previous two world-wide inflationary episodes, and the Great Depression associated with
the collapse of the international monetary and trading system. Although there were fluctuations in the growth rates of national economies in the post-war period, they were by and large cancelled out in the aggregate. The collapse of the Bretton Woods system, preceded by the explosion of international liquidity and followed by the flotation of exchange rates and the emergence of a supply constraint on oil are also global disturbances of historical significance. Indeed, the 1974/75 recession is the first time after World War II that there was a decline in the level of total OECD output and it is also the first post-war recession which was not followed by immediate recovery.

The historical perspective thus suggests that these global disturbances and structural changes set the economies of industrial countries off balance and into a prolonged process of adjustment which they are still in the midst of. The appropriate frame of reference for the evaluation of this period is accordingly not the relatively calm period from the 1950's to the late 1960's but rather the earlier periods of global shocks, such as World War I, the Great Depression and World War II. Even from this long-run historical perspective, however, the 1970's are remarkable because one can identify a strong international business cycle.

The international business cycle that emerged in the 1970's began with the boom of 1972/73, which was exceptionally strong in most countries and led to world-wide acceleration of inflation and simultaneous tightening of macroeconomic policies. These policies together with the effects of the oil price increase of 1973 caused the global recession of 1974/75. It is of interest to note that the recession came to Italy and France later than it came to the other major industrial countries. Growth picked up in all
countries in 1976 mainly because of a large increase in inventories, but also because of the expansionary measures taken simultaneously in 1975. In the United States expansion continued through 1979. In Japan, also, growth continued after 1976, but at a much slower pace than before. In Europe, however, the recovery of 1976 was aborted and 1977 was another recession year, as severe as the 1974 recession. In the following two years growth continued at the moderate rate of little over three per cent.

From these data one can identify four patterns of adjustment after the global recession of 1974/75. First, there is the U.S. case of strong and sustained recovery leading to deterioration in the balance of payments, depreciation of the dollar and acceleration of domestic inflation. We noted that the United States grew faster than Europe from 1976 through 1978.

The second case is that of Germany and Japan. Germany maintained slow growth until 1978 -- well below the OECD average -- and experienced an improvement in its current account, an appreciation of its currency and a deceleration in its rate of inflation. After having brought inflation under control, and with a strong current account position in 1978, Germany then embarked on more expansionary policies in 1979. A broadly based recovery took place that year, when Germany grew much faster than the United States or the other European countries. This reversal, together with the impact of the oil shock, led to a deterioration of Germany's current account and to a weakening of the mark, as well as to acceleration of domestic inflation. The response of policies to these developments explains, in part, the emerging recession of 1980. Japan's experience is comparable to Germany's in that the rate of growth was halved and the rate of inflation was brought down from 15.1 per cent in 1975 to 3.6 per cent in 1979, while the current account
surplus increased and the yen appreciated. This situation was reversed in 1979 as the oil price increase and the slowing down of growth in the United States began to have an effect.

The third case is that of Italy and the United Kingdom which experienced erratic growth throughout the period under investigation, each recovery leading to foreign exchange market pressures and acceleration of inflation.

Finally, Canada and France experienced no recovery after the initial pick-up of growth in 1976. Despite slow growth, inflation remained stubborn in both countries. In Canada the rate of change of the consumer price index increased from 7.5 per cent in 1975 to 9.2 per cent in 1979, despite growing unemployment. In France inflation decreased slightly from 9.6 per cent in 1976 to 9.1 per cent in 1978, but increased again to 10.7 per cent in 1979. During the same period unemployment increased from 4.4 per cent in 1976 to 5.9 per cent in 1979. France's current account was basically in equilibrium in this period and after the depreciation of the franc in 1976 and 1977, the franc's effective exchange rate remained virtually unchanged. In this respect Canada's experience is different from that of France: the Canadian dollar depreciated against the dollar through 1979.

In summary, the experiences of major industrial countries in the 1970's bring out the inflation and balance of payments constraints on growth of individual economies in the absence of growth in the world economy. In different degrees and at different times every country hit these constraints: the United States in 1979, Germany in 1980, and Italy and the United Kingdom at several times.
Indeed, this casual examination suggests that frictions between countries in the 1970's retarded their growth as a group. Of course, the inflation and oil supply constraints would still have been there, but it is nevertheless important to isolate the interdependence of countries as a potential constraint on world recovery.

Charts 1 and 2 provide further illustrations of the background against which the experience of the 1970's must be evaluated. By plotting together real growth and inflation, Chart 1 brings out the stability of growth in Europe in the post-war period. The four recessions before the slump of 1974/75 — in 1952, 1958, 1967 and 1971 — were all 'growth recessions'. The slowdown of growth was the strongest in 1958 when the output of European countries grew at only 2.3 per cent. The 1971 slowdown was brief and mild with a growth rate of 3.6 per cent. In the other two recessions, in 1952 and 1962, the growth rates were 3.0 per cent and 3.5 per cent, respectively. These four growth recessions were the only years in the post-war period before 1974 when the growth rate of Europe was below 4 per cent. In the case of each recession recovery was immediate and sustained for many years.

As noted, cyclical fluctuations in individual European countries reveal a lack of synchronization, which in part explains the stability of growth in the aggregate. France experienced a growth recession both in 1952/53 and in 1958/59, but thereafter growth was virtually uninterrupted before it came to an abrupt halt in the second half of 1974. The German recession of 1966/67 had only a brief effect on growth in France in the second half of 1966. The May events of 1968 caused a temporary reduction in output, but recovery in the second half of 1968 was so strong that this episode does not show in annual data. There was no slowdown of growth in France in 1970/71.
Growth and Inflation in Europe

Chart 1

Source: OECD

(%)
Germany experienced only one severe recession in the post-war period, namely in 1966-67, when output declined in the second half of 1966 and in the first half of 1967. This recession had a noticeable effect on some of the smaller European countries but had little effect on the major economies. In Italy growth was virtually uninterrupted for twenty years. The only noteworthy observation is the slowdown of growth in 1964/65 reflecting a collapse of investment activity. Stable growth came to an end only at the beginning of the 1970's in a growth recession that lasted from the second half of 1970 through the second half of 1972. Like Sweden, Italy was out of phase with the other countries that were growing rapidly at the time. Growth picked up only in 1973 as a result of investment recovery and expansionary fiscal and monetary policies. As a result Italy, like Sweden, was again out of phase when the world economy plunged into a recession in the latter part of 1973.

In the United Kingdom post-war growth was slower and at the same time more unstable than in the other European countries. In the 1970's the stop-go cycles that have characterized the British economy throughout the post-war period have come to characterize all European economies in the 1970's.

Chart 2 brings out the familiar fact that growth in the United States in the post-war period has been much more unstable than it has been in Europe. Indeed, there is no similar break from earlier patterns in the United States in the 1970's. Rather the exceptional period appears to be the decade from the late 1950's to the latter part of the 1960's. During this period growth was stable and fast. From the late 1960's the U.S. economy has been characterized by a stop-go cycle of growth and inflation. It is also useful to note that the fluctuations of the U.S. economy in the post-war period did not cause parallel fluctuations in the other economies. This is yet another indication
CHART II

Growth and Inflation in the U.S.
(% p.a.)

Source: OECD
of the robustness of growth in the world economy during the post-war period.

One reason for the failure of industrial countries to recover from the 1974/75 recession is revealed by Table III which shows the behaviour of fixed investment in the seven major industrial countries. The slowdown of growth of investment is noticeable in all countries. There are, however, important differences between countries. In the United States sustained investment recovery took place in 1976-78. In Japan and Germany recovery of investment was delayed until 1978/79. In France, Italy and the United Kingdom no investment recovery took place. The pattern of growth of investment demand in Canada is different from that in the other countries, in part because of the greater importance of the energy-related investments in that country. The prolonged stagnation of fixed investment after the 1974/75 recession stands in sharp contrast with earlier growth recessions which were always followed by speedy recovery of investment demand.

A useful way to pose the problem of slow growth in the 1970's is to ask why recovery of investment did not take place outside of the United States. Was it because the growth of aggregate demand was insufficient to justify capacity expansion at a more rapid pace? Or was it because more substantial additions to capacity were unprofitable although there would have been sufficient demand for additional output? In the first case the problem is a Keynesian one. In terms of the Harrod-Domar growth model, the growth rate of effective demand was below the warranted growth rate after 1975 and thus recovery of investment was delayed until the depreciation of the stock of capital generated a need to replace capacity. In the second interpretation the problem of the 1970's was one of 'classical' investment stagnation and it could not have been cured by a more expansionary aggregate demand policy.
<table>
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<th>France</th>
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This problem is indeed one of the key aspects of the experience of the 1970's that has to be explained in future research. Stagnation of investment obviously has a bearing on the slowdown of productivity growth that we noted earlier, as well as the widespread emergence of a structural employment problem.

This brief review has brought out the striking discontinuity in real economic development in all industrial countries that took place in the 1970's. From a period of high and steady growth in output and productivity accompanied by low rates of unemployment, there was a sharp transition to low and erratic growth of output, low growth of productivity and high rate of unemployment. The review confirms that the three macroeconomic problems identified have retarded growth in the 1970's, and continue to be present as constraints on sustained recovery of the world economy. The inflation constraint, as well as the balance of payments, or exchange rate constraint, apply to an individual country that attempts to maintain growth in an energy constrained world economy.
II. THE PROBLEM OF INFLATION

After seven years of slow growth and high unemployment, the inflation problem is worse today than it was at the peak of the boom in 1973. Only Japan, Germany and some of the smaller European countries have been successful in bringing inflation under control but, even in these countries, the fear of rekindling inflationary pressures continues to exercise a restraining influence on policy at low levels of resource utilization.

In all countries, central banks continue to be in the forefront of the struggle against inflation. According to the monetarist doctrines that swept the world in the 1970's, this is how it should be. Central bank policies were the cause of the current inflation problem and they provide the only hope of its cure. Fiscal policy also contributed to inflation, through mounting budget deficits, financed directly or indirectly by money creation.

A review of the academic work with underlying monetarist persuasions is beyond the scope of this paper. When arguing against monetarist doctrines we are therefore arguing against popular interpretations of the problem of inflation and its solution rather than discussing the models explicitly. Indeed the major criticism we have against these models is the fact that some of their implications have shaped popular beliefs in the wrong direction. To a large degree, such narrow interpretations of an orthodoxy are inevitable, and many other examples could be drawn from the recent experience as well as from the history of economic analysis. But no other economic doctrine - including the various Marxist interpretations - seems as widespread at this time.

The first point is that monetary policy influences price and wage inflation only through its effect on the demand for goods and services, and the demand for labour. In addition, in an open economy, monetary policy has
a direct effect on prices through the effect on the exchange rate. This point is so obvious that it needs to be made only because in popular discussion money supply growth is often seen as leading to inflation directly independently of its effect in changing the level of spending on goods and services.

Second, and a more substantive point, is that monetary policy is not the only influence on aggregate demand. In particular, growth of aggregate demand can also be increased or reduced by means of expansionary or contractionary fiscal policy. This point is important because the mix between monetary and fiscal policies has an effect on the level of investment and thus on future productivity. In an open economy, the policy mix is relevant for the additional reason that tight monetary policy leads to overvaluation of the domestic currency and thus to a stagnation of export and import competing industries, whilst contractionary fiscal policy mainly affects the sheltered sectors of the economy.

A third point, accepted by 'old' monetarists but rejected by the new wave of 'rational expectations' monetarism is that wages and prices do not adjust immediately to a reduction in the rate of change of aggregate demand except in auction markets, as the experience of the 1970's abundantly demonstrates. It is for this reason that the choice of the policy mix emphasized above is relevant. We might already note the implausibility of the rational expectations hypothesis that a mere expectation of a reduction in the rate of growth of the money stock is alone sufficient to lower inflation without a period of unemployment. Recognition of the inertia of inflation forces one to take a look at the institution and the economic factors that explain the sluggishness of the response of wages and prices to demand pressures. One may take the view that such institutions and practices are
sacred and cannot be altered by policy, but their relevance for understanding the problem of disinflation cannot be denied.

A fourth point that we raise is that the level of prices can increase as a result of cost increases or currency depreciation without any change in the supply of money. These sources of price level increases— in particular the oil shocks of 1973 and 1977—are denied by monetarists who argue that supply shocks can lead to inflation only if monetary policy is accommodating. This view rests on the assumption of complete wage and price flexibility. We argue that the global recession of 1974/75 and the emerging recession of 1980/81 cannot possibly be understood as an equilibrium response. On a more subtle point we discuss whether monetary policy should accommodate the cost effect of supply shocks. We argue that controlled accommodation is desirable but requires that wages are not indexed to the cost of living.

The fifth point that we make focuses on the difficulty of adjusting to the inevitable decline in living standards that is implied by adverse real shocks, such as slowdown of productivity growth or a deterioration of the terms of trade. We argue that the narrow monetarist interpretation of inflation has exacerbated this difficulty by contributing to the public's failure to distinguish between price increases that are caused by real changes on the one hand, and those that are the result of excessive monetary growth on the other. In the case where living standards have to decline, controlled price increases might often be the most expeditious way to bring it about.

Finally, we argue that the so-called open economy monetarism overstates the international transmission of inflation under fixed exchange rates and conversely neglects such transmission under flexible exchange rates. We further criticize the monetary approach to exchange rate determination because
of its neglect of the crucial role of exchange rates in effecting balance of payments adjustment. We argue that exchange rate changes are still the best way to adjust relative prices so as to maintain equilibrium in world trade and payments. Popular monetarism has again contributed to widespread misconceptions about this crucial role of exchange rate adjustments by mechanically attributing currency depreciation to excessive monetary expansion.

In sum, it is certainly important to learn from past mistakes and to realize that excessive monetary growth at full employment leads to inflation which cannot be easily brought down. But whilst monetary restraint would have been appropriate in the years of rapid growth of the late 1960's and the early 1970's, single minded pursuit of tight money will not restore steady growth with price stability in any time horizon that is relevant for policy. Even if restrictive monetary policy was the only alternative and even if it was successful in reducing inflation, it is important to recognize that the real problems of energy and of the slowdown of productivity growth will not disappear. On the contrary, restrictive policies that are necessary to reduce inflation add to these real problems in the process of adjustment to a lower rate of inflation.

The monetarist explanation of the history of current inflation is familiar. As long as exchange rates were fixed under the Bretton Woods system, the problem of inflation was a global problem. The rate of inflation in the world economy was determined by the rate of growth of the world money stock in excess of the rate of growth of world output adjusted for secular change in velocity. Under the dollar standard, the United States, so the theory of global monetarism implies, determined the supply of central bank money in the world. It was able to do so because of the special role of
the dollar as a reserve currency. The Eurodollar market added to world monetary growth by enabling the world banking system to economize on base money.

The counterpart of global monetarism for a national economy was the monetary approach to the balance of payments. It held that the central bank of a small economy could not control the rate of inflation but instead would determine the balance of payments through its monetary policies: the foreign exchange market was the window through which excess demand for money over domestically provided supply was eliminated.

After the second dollar devaluation, in February 1973, the generalization of floating exchange rates allowed central banks to fight inflation as they saw appropriate. Thus began the struggle that still continues. Had OPEC never made its historic decision, had commodity prices continued to decline in real terms as they had for two decades and had exchange rates behaved as theory said they should, the struggle might well have been victorious. Monetarism might have triumphed where Keynesian economics failed in producing prosperity with price stability. As it happened, the decade of monetarism became a decade of high inflation, high unemployment and slow growth.

Monetary policy can hardly be blamed for these ills, nor can it alone be expected to cure them. One major reason why the stagflation problem of today is so intractable is that it does not have a single cause, nor is it the same disease in all countries. The inflation problem of Italy cannot be cured by copying German monetary policy. If the Bank of England should follow the policies of the Bank of Japan, that alone will not make sterling a strong currency.

Many changes have occurred in the 1970's that make the problem of macroeconomic policy quite different from what it was in the 1960's. The
new aspects to the inflation problem can be listed as: the emergence of cost push inflation because of the increases of oil and other raw material prices; the emergence of 'struggle for income shares' inflation, fiercer than before, with OPEC as a new claimant; the interaction between exchange rate movements and the inflationary process; and the decline of productivity growth, which, like raw material price increases, adds to price inflation for a given rate of wage inflation.

In the background there is, of course, the inherited inflation from the years of prosperity, so deeply entrenched in social expectations and so extensively built into long term contracts that even in the best of circumstances it would have taken patience to restore more moderate inflation. Perhaps the inertial component of inflation today is 5 or 6 per cent in the OECD area on an average; it hardly can be much less. It probably varies greatly from country to country. In Germany, where fear of inflation seems to have been established by a traumatic experience of hyper-inflation in the past, inflationary expectations have come down substantially. In Japan it is easier to break the inertia of inflation because of the flexibility provided by the bonus system and the lifelong association between workers and firms. In the United States inflation has been firmly established in expectations while the decentralization of the labour market makes simultaneous adjustment of wages impossible and thus strengthens the inertia of inflation in the labour market.

The modern rational expectations school in macroeconomics holds that the past does not matter: each day people reappraise their view of the future on the basis of new information and renegotiate their contracts if that is called for by the new situation. Past mistakes impose costs today but they do not lead to wrong decisions.

The rational expectations model, in its current state of theoretical
development, implies behaviour which is simply implausible. Seldom do societies believe in what they have not experienced; indeed too often they learn only from serious mistakes. The past influences social attitudes for decades -- the Great Depression and the German hyperinflation had a lasting effect on the minds of those who shared in the experience, however irrational that may be. The years of prosperous growth may have conditioned social attitudes in a way that makes adjustment to the harder times of today more difficult.

To be specific, the existence of inertial inflation means that if the economy has adjusted to a given rate of inflation, the only way to reduce that inflation is to increase unemployment for a long enough period of time for inflationary expectations to adjust and long term contracts to adapt to the ultimately lower rate of inflation. According to the Friedman-Phelps natural rate hypothesis, the tradeoff between inflation and unemployment is only transitory during the process of adjustment to lower inflation. The problem of disinflation by means of macroeconomic policy is how to weigh the benefit of ultimately lower inflation against the cost of output loss and unemployment that must be incurred in the process of adjustment. Unfortunately, most econometric studies suggest that this menu of choices is very unattractive indeed.

And virtually all of these studies only include the cost of deviation from a given path of potential output. They neglect the fact that protracted recession reduces potential output as well through investment stagnation, declining productivity, deterioration in the quality of the labour force, increasing inefficiency resulting from policies and try to suppress micro-economic symptoms of a macroeconomic problem, and possibly too, lessening
of entrepreneurial spirit and of general willingness to take long term risks inherent in capital investments with high payoffs in the future. Unfortunately, these costs of recession may well be the bequest of the 1970's to the 1980's and the industrial world thus have to wait another decade to return to 'natural' levels of output and employment.

The nature of the tradeoff as it emerges from a plot of the average rate of consumer price inflation in industrial countries against deviation of these countries' total real GNP from its trend value is familiar.11 Such aggregate Phillips curves naturally hide the fact that the GNP gap of the United States behaved quite differently from that of the other industrial countries but they do show the brutal break between the years before and after 1973 that is evident from Charts 1 and 2: the output gap widens and high inflation persists.

Turning to raw material prices, it is well to recall how things changed. For two decades after the Korean War raw material prices declined continuously in real terms, with some cyclical fluctuations. In terms of industrial countries' exports, the price of commodities other than oil declined by 28 per cent from 1952 to 1972 (Table IV). The real price of oil began to rise in the early 1970's but from 1953 to 1970 it declined by as much as 25 per cent. In 1973 the real price of commodities increased by 29 per cent while the real price of oil increased by about 230 per cent.12

There is no doubt that portfolio diversification from previously acquired liquid assets to commodities and speculative purchases financed by credit in ample supply at the time contributed to the commodity boom of 1973/74 but that short term and long term factors on the supply side were responsible as well is apparent from the table (left column).
For all industrial countries, this reversal in price relationships was registered as a sharp deterioration in the terms of trade in 1974. The United Kingdom has since experienced a noticeable improvement in its terms of trade after the North Sea oil became available, while Germany was able to restore its terms of trade because of the strength of its balance of payments position. For non-oil developing countries the improvement in the terms of trade in the years of the commodity boom proved short lived. After substantial variability since 1972, their terms of trade are now only slightly above that level. The lasting effect of the supply shock is the deterioration of all oil-importing countries' terms of trade vis-à-vis OPEC, which, for industrial countries, amounted to some 2 to 2.5 per cent of real GNP. This supply shock coincided with the introduction of floating rates. The new system thus had to cope with two problems at the same time: the momentum of inherited inflation and the divergence of national policies of coping with it on the one hand, and the terms of trade deterioration and the balance of payments problems that resulted from it on the other.

Consider first the problems posed by a supply shock ignoring the exchange rate and balance of payments aspects. Without any change in monetary and fiscal policies an increase in the relative price of oil and of other raw materials requires a decline in other prices as well as in nominal wages in order for full employment to be maintained. In terms of a simple monetarist model, the average price level cannot change if the supply of money is fixed. Thus in order to have a change in the relative price of any one commodity against other commodities the prices of these other commodities must fall in absolute terms. In popular monetarist thinking prices are flexible and therefore relative price changes can be effected
TABLE IV
RELATIVE PRICE OF NON-OIL RAW MATERIALS AND MANUFACTURES 1900-1978
(1963 = 100)

<table>
<thead>
<tr>
<th>Trough/Peak</th>
<th></th>
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<tbody>
<tr>
<td>1900</td>
<td>87.2</td>
<td>1972</td>
</tr>
<tr>
<td>1911</td>
<td>110.5</td>
<td>1973</td>
</tr>
<tr>
<td>1921</td>
<td>69.2</td>
<td>1974</td>
</tr>
<tr>
<td>1925</td>
<td>105.1</td>
<td>1975</td>
</tr>
<tr>
<td>1932</td>
<td>64.7</td>
<td>1976</td>
</tr>
<tr>
<td>1937</td>
<td>88.9</td>
<td>1977</td>
</tr>
<tr>
<td>1951</td>
<td>126.0</td>
<td>1978</td>
</tr>
<tr>
<td>1962</td>
<td>89.2</td>
<td></td>
</tr>
</tbody>
</table>

Note: Weights were changed in 1960, data missing 1914-1920; 1939-1947.

Source: UNCTAD Dollar index of manufactures and other products used as deflator.


without inflation. For a monetarist, the supply shocks of the 1970's are a real phenomenon irrelevant for understanding and explaining the rate of change of the price level.

But wages and prices in modern industrial society do not adjust immediately to restore Walrasian equilibrium upon a supply shock of the magnitude experienced in the 1970's. In the absence of offsetting macroeconomic policies, an adverse supply shock will and did increase both the rate of inflation and the rate of unemployment.

The requirement to effect relative price changes imparts then an inflationary bias on the economy, either openly or else in the form of suppressed inflation reflected in excessive unemployment.

It is possible that in the previous two decades some inflation was already needed to enable the world economy to adjust to the secular improvement in the factorial terms of trade of Germany, Japan and other fast growing countries. As long as exchange rates were fixed, this secular change in relative wage rates implied an inflationary bias because of the difference in the rates of growth of productivity between the service and manufacturing (tradable) sector, given any downward rigidity of prices in the slowly growing regions. To some extent the imported inflation that Germany tried to resist was the inevitable outcome of her economic miracle. 13

Table V shows changes in hourly compensation in manufacturing (in domestic currency) and unit labour costs, obtained by subtracting the change in manufacturing output per employed person. The increase in hourly compensation after 1973 is in general much smaller than the increase in unit labour costs due to the decline in productivity. In contrast, in Japan and Germany where the growth of hourly compensation in the 1973-79 period slowed
TABLE V

Hourly Compensation and Unit Labour Costs in Manufacturing, 1960 - 1979
Average Annual Rates of Change

-HOURLY COMPENSATION-

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>U.S.A.</td>
<td>3.6</td>
<td>6.6</td>
<td>9.3</td>
<td>9.2</td>
</tr>
<tr>
<td>Canada</td>
<td>4.8</td>
<td>7.9</td>
<td>12.1</td>
<td>9.6</td>
</tr>
<tr>
<td>Japan</td>
<td>12.8</td>
<td>17.6</td>
<td>11.1</td>
<td>6.5</td>
</tr>
<tr>
<td>France</td>
<td>8.7</td>
<td>11.1</td>
<td>15.6</td>
<td>13.5</td>
</tr>
<tr>
<td>Germany</td>
<td>9.1</td>
<td>11.5</td>
<td>9.6</td>
<td>6.5</td>
</tr>
<tr>
<td>Italy</td>
<td>11.6</td>
<td>16.0</td>
<td>20.8</td>
<td>20.6</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>7.6</td>
<td>11.1</td>
<td>18.5</td>
<td>14.9</td>
</tr>
</tbody>
</table>

-UNIT LABOUR COST-

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>0.3</td>
<td>3.5</td>
<td>7.0</td>
<td>7.6</td>
</tr>
<tr>
<td>Canada</td>
<td>0.6</td>
<td>2.7</td>
<td>9.0</td>
<td>8.7</td>
</tr>
<tr>
<td>Japan</td>
<td>2.9</td>
<td>6.5</td>
<td>6.8</td>
<td>-1.6</td>
</tr>
<tr>
<td>France</td>
<td>3.0</td>
<td>4.7</td>
<td>9.6</td>
<td>7.7</td>
</tr>
<tr>
<td>Germany</td>
<td>3.2</td>
<td>5.9</td>
<td>4.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Italy</td>
<td>4.0</td>
<td>8.2</td>
<td>17.0</td>
<td>10.9</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2.6</td>
<td>6.6</td>
<td>17.8</td>
<td>12.4</td>
</tr>
</tbody>
</table>

down, unit labour costs respectively do not accelerate and slow down. In sum, the seventies were a decade of slower growth and higher labour costs.

Had the workers of industrial countries accepted a decline in real wages, or had firms been willing to employ the same number of people at reduced profit margins, the adjustment to the supply shocks of the 1970's would not have been so painful and protracted. Industrial countries would have incurred the primary burden of the terms of trade deterioration but they would have been spared the substantially greater secondary macroeconomic burden, provided that macroeconomic policies had accomodated the inevitable cost push inflation whilst offsetting the deflationary impact of the OPEC current account surplus.

The lack of accomodation of inertial inflation and of the new element of cost push inflation in 1973/74 is undoubtedly what started the stagflation but the subsequent attempt of workers to restore real wages through nominal wage claims is what has made it so persistent.

Paradoxically, the popular view that the real wage is rigid downward is often accompanied by statements to the effect that a credible threat of nonaccomodation by the monetary authorities may have in itself a moderating influence on wage demands. This would happen to the extent that the threat destroys any hopes that trade unions might have about being able to increase real wages through nominal wage rises without increasing unemployment. It stands to reason, however, that if trade unions are sensitive \textit{ex ante} to a threat of unemployment it seems unlikely that real wages will not be sensitive \textit{ex post} to the experience of unemployment, but that the converse is much less likely to be true.

The question whether there is a struggle for income shares and whether
in any case its existence has any relevance for understanding inflation is an old issue of sometimes heated debate. Today, there are "countries of social consensus", such as Germany, Japan, Austria or Switzerland, where national income is divided, either through markets or with government guidance and close cooperation of interest groups, without major friction. There is also the United States where social conflict takes such diffuse forms, and is to a large extent arbitrated through the forces of supply and demand, that the struggle for income shares is hard to visualize as a polarized social confrontation. But, there are, too, countries of social confrontation where the class struggle is conspicuous.\textsuperscript{14}

Whatever the view on the 'struggle for income shares', the wage price adjustment process is a new element of the inflation problem. In fact, if wages did not respond to prices, the increase in unemployment that all countries have experienced should have reduced the rate of wage inflation, and there should also have been a decline of the rate of growth of real wages given the decline in productivity growth. But, as shown in Table V above, nominal wage inflation only decelerated in Germany and Japan. In the U.K. and, in particular, in Italy's indexed economy, nominal wages have grown far in excess of productivity.

Given the variety of national institutions, can macroeconomic responses be understood and central bank policies be pursued without regard for such institutional differences?

There is a sense in which the answer is yes. There is little money illusion left in today's world. Ultimately it may be impossible to reduce real wages through inflation alone, with no increase in unemployment as assumed in old fashioned Keynesian analysis. If the trade unions of Europe
were indeed able to consistently realize their real wage demands without regard to productivity the European economies would ultimately adjust to a macroeconomic equilibrium characterized by classical unemployment. Such equilibrium would not be sustainable under capitalism, however, because of the effects of the associated decline in profitability on capital accumulation and growth. What comfort one might derive from price stability in such an environment, monetary policy could presumably provide.

In the coming years, the 'struggle for income shares' aspect of the inflation problem and the classical variant of the unemployment problem are likely to get worse for three reasons. First, there is hardly any doubt that the real price of oil will continue to increase substantially in the next five to ten years, barring unforeseen serendipities. Second, the problem of structural unemployment in the industries that face increasing competition from the rapidly industrializing developing countries is likely to get worse.

Third, and most important, the policies that have been pursued in the struggle against inflation have themselves become a cause of future inflation of this more intractable variety by contributing to the protracted stagnation of investment, evident from Table II above. The stagnation of investment not only makes the adjustment to the increased price of energy more difficult, it also has a detrimental effect on the growth of labour productivity, and on competitiveness in world markets, particularly for the weak countries, such as Italy or the United Kingdom.
III. THE PROBLEM OF BALANCE OF PAYMENTS ADJUSTMENT AND EXCHANGE RATE INSTABILITY

When floating rates were introduced the optimistic expectation of many - grounded in existing theory - was that the new system would take care of balance of payments adjustment automatically and smoothly. This has not been the case. Exchange rate movements have been substantial and erratic. The foreign exchange market has proven incapable of handling large imbalances in balance of payments positions without sharp movements in exchange rates, often accentuated by destabilizing speculation. Central banks have found it necessary to increase rather than decrease their intervention in the market. Because of continued intervention, the question of the quantity and composition of international reserves remains an issue in the discussion of international monetary reform.

Flexibility of exchange rates has not enabled countries to insulate themselves from fluctuations in the world economy. On the contrary, never before have industrial countries been more closely interdependent than since the beginning of floating rates. Certainly, macroeconomic policy of the United States has never been as much concerned with the external constraint as it is today. In the 1960's neglect of balance of payments implications made European central bankers unhappy; today such neglect is registered immediately in the market valuation of the dollar - a constraint of much greater substantive as well as symbolic significance.

Some would argue that foreign exchange markets have been unstable because monetary policies have been unpredictable. The monetarist explanation of exchange rate movements would hold that if only money growth rates were stabilized in a credible way, exchange rate movements would be smooth
and converge to purchasing power parity. The monetarist theory assumes rational and forward looking speculators with unlimited funds to finance any imbalances that might arise from shifts in the current account positions of countries. The monetarist theory also assumes that price elasticities of demand on the trade account are very high, if not infinite. There is no need to worry about the Marshall-Lerner condition, the J-curve or the transfer problem.

The main elements of the monetarist theory of exchange rates can be briefly summarized. With exchange rate flexibility inflation becomes a national problem. The rate of inflation of a country is determined by the rate of growth of the money supply in excess of the exogenously given rate of growth of output, adjusted for secular changes in velocity. Since the foreign exchange window is now closed the monetary approach to the balance of payments becomes a monetary approach to exchange rate determination. By the purchasing power parity doctrine, the exchange rate is determined simply by the ratio of price levels in the two countries whose currencies are in question. Because prices of goods and services respond only with some time lag to monetary changes, at least in old fashioned monetarist thinking, whilst the exchange rate responds immediately to every new bit of information about current and future money supplies, there may be transitory deviations from purchasing power parity.

The relationship between key bilateral exchange rates and the corresponding ratios of consumer price indices come closest to approximating the purchasing power parity relationship for high inflation countries. Thus the DM-pound exchange rate follows the ratio of the U.K. and German consumer price indices almost exactly and this relationship has been
reported in a number of econometric studies as evidence of the power of the monetary theory.

It is however troublesome that the purchasing power parity does not hold to the floating rate regime because, according to modern hardline monetarism, the purchasing power parity should hold irrespective of the exchange rate regime. The only difference between exchange rate regimes is the process – irrelevant in the final analysis – through which the 'law of one price' comes to hold.\(^{19}\) It is evident that the U.K. was able to inflate faster than Germany before 1973 with little change in the exchange rate. The Italian situation is similar to the U.K. situation except that domestic inflation has not kept pace with currency depreciation.

Furthermore, the close relationship between currency depreciation and domestic inflation in these two high inflation countries does not imply anything about the causal mechanism at work. In particular it does not imply either that monetary growth in the U.K. determines the rate of U.K. inflation or that arbitrage between British and German goods at domestic currency prices so determined determines the exchange rate. But the existence of such arbitrage is at variance with all available evidence on price elasticities in international trade.\(^{20}\)

The behavior of the two strong currencies, the DM and the yen against the dollar is quite different. Until 1973 Germany was inflating faster than the U.S. despite the revaluations of the DM. Since then inflation in the U.S. has been above that in Germany but by far less than the appreciation of the DM would suggest. In monetarist thinking, the strengthening of the mark since 1973 is simply the result of prudent monetary policy pursued by the Bundesbank. This interpretation has some difficulties with
details, such as the strengthening of the DM in a year of very rapid monetary growth in 1978. A more important question is whether the favorable price performance of Germany has not been only a cause but also a consequence of the appreciation of the DM, which in turn has been the result of favorable developments in the balance of payments.

Similarly, Japan has had a faster rate of inflation than the United States until 1978, yet, from 1970 to 1973, the yen was appreciating relative to the dollar. The weakening of the yen after 1973 was certainly not the result of accelerating inflation in Japan caused by monetary factors but the predictable consequence of the impact of the oil price increase on the balance of payments. 1978 was a year of sharp appreciation of the yen not because of success in the struggle against inflation. Rather, Japan was then able to have a lower rate of inflation than the United States for the first time because of the sharp appreciation of the yen, caused by the strength of the current account. As the full impact of the new oil crisis will be felt, it is likely that the situation regarding Japan's inflation and yen's strength will deteriorate independently of the monetary policy pursued by the Bank of Japan, as indeed happened in the first half of 1979.

The monetarist theory assumes away all the problems that even a cursory review of the experience of recent years suggests. All available evidence on price elasticities in trade suggests that they violate the Marshall-Lerner condition in the short run, thus producing the perverse J-curve effect, and are quite small - certainly against the benchmark of theories that assume purchasing power parity - even within a time horizon of a few years.

Furthermore, as evident from Table VI, cumulative autonomous capital
flows have been insufficient to finance the substantial imbalances that have existed since 1973. Year after year, furthermore, they have often accentuated the pressure on the exchange rate of deficit countries, as is evident from Chart III for Italy.

The fact that relative price elasticities of trade flows are small in the short run implies that if destabilizing exchange rate movements are to be avoided, transitory and cyclical fluctuations in the current account must be financed either by private or official capital movements or by central bank intervention. With high sensitivity of private capital movements to changes in expected yields, only small yield differentials would be needed to induce capital flows to match current account deficits or surpluses. Central banks have used interest rate policy to attract capital, the recent policy of the Federal Reserve - although not exclusively motivated by balance of payments considerations - being a case in point.

It is difficult, however, to reconcile the evidence with a view of 'perfect capital mobility.' Allowing for the effects of intervention, changes in interest rates and so on there still is a clear tendency of currencies of surplus countries to appreciate continuously and those of deficit countries to depreciate continuously. Such behavior is inconsistent with theory unless it is assumed that the supply of private funds is not infinitely elastic.

Consider for a moment the financing of an exogenous current account deficit under flexible exchange rates. It translates dollar for dollar into excess demand for foreign exchange per unit of time. Without intervention the price of foreign currency tends to increase in response to this excess demand. How will the depreciation induce a capital inflow
Table VI

Cumulative Balance of Payments 1973-79

(billions of U.S. dollars)

<table>
<thead>
<tr>
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<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current Account</td>
<td>Capital Account</td>
<td>Balance of payments</td>
</tr>
<tr>
<td>United States</td>
<td>2.7</td>
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<td>Japan</td>
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<td>Germany</td>
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<td>-7.8</td>
</tr>
<tr>
<td>Total</td>
<td>-3.7</td>
<td>-72.5</td>
<td>-76.2</td>
</tr>
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</table>

**Source:** IFS  
(1) = lines 77aad through 77agd  
(2) = lines 77bad through 77dd  
(3) = (1) + (2)
that will restore equilibrium in the foreign exchange market? Suppose
that foreign investors want to hold some fraction of their wealth in
American assets. As the dollar depreciates these assets become cheaper
for German and Arab investors. Consequently, they will hold more in
U.S. Treasury bills, equity, real estate and so forth without any change
in expected yields. In short, currency depreciation cheapens not only
American goods but also American assets. It is likely that the price
effect on asset trade is much faster than that on commodity trade—this
introduces the required element of stability in the case when the Marshall-
Lerner condition is violated on the trade account. But the demand for
assets is a demand for a stock; to induce a continuous flow in excess
of steady flow coming from new savings the relative price of assets,
the exchange rate, must change continuously whenever the current account
deviates from the capital transfer that can be financed from new savings,
ceteris paribus.

Speculation introduces another consideration. Suppose that the
current account deficit is expected to last for only one year. Expecting
this, speculators are willing to shift funds to the United States as the
dollar depreciates because they expect the dollar to appreciate in the
future. This reduces the impact of the current account deficit on the
exchange rate. In models of perfect capital mobility such temporary
deficit will have no effect on the exchange rate.

The amplitude of exchange fluctuations that result from exogenous
changes in the current account at given interest rates and other deter-
minants of capital movements depends on the exchange rate elasticity of trade
flows—assumed to be zero above—on the one hand and the size and yield elasticity
of funds available to finance current account fluctuations on the
other. If the elasticities are small, if the supply of speculative capital is limited and if expectations are formed adaptively rather than in a forward looking manner, the market, left to its own devices, may produce large fluctuations in the exchange rate. Such fluctuations may be smoothened by intervention, by interest rate and other policies that affect capital movements and by policies, such as aggregate demand policy, energy policy and so forth that affect the current account.

The neglect of the foreign exchange market implications of policies is one extreme choice, the pegging of the exchange rate is another. In today's economic environment, most countries are likely to choose somewhere in between. But, whatever their choice, it will have repercussions in other countries as well.

One important implication of low elasticities on the current account concerns the workings of the capital transfer process in the current international monetary system. Suppose, as an example, that holders of dollar assets wish to diversify to Deutschemark assets. As they do so, they cause the DM to appreciate unless the Bundesbank provides them with DM's at an unchanged price. The appreciation of the DM improves the German current account in the short run—and thus causes further pressure on the DM to appreciate. Over time the price mechanism undoubtedly works to produce a deficit in Germany's current account thus enabling the transfer to be effected. In the meantime Germany can enjoy declining inflation and improving terms of trade, while the United States finds itself in a position of a capital importer—adding to the 'overhang' of dollar assets in the world economy.

In the 1970's, Germany has been in a position of strength both in terms of the current account and the attractiveness of Deutschemark assets:
the result has been a steady appreciation of the DM and an improvement in Germany's terms of trade against other industrial countries. Macroeconomic policy pursued in Germany has, of course, contributed to the strength of the DM but it has also been aided by the 'inherent' strength of the currency derived from the strength of Germany's balance of payments position. Capital movements are less significant in the case of Japan, but in this case too the strength of the current account has contributed to the continuous strengthening of the currency. A rough illustration of this "acceleration hypothesis" is obtained by plotting annual changes in effective exchange rates and the current account in dollars as shown in Charts IV and V.

The counterpart of the German and the Japanese economic miracles is the weakening of the dollar in the 1970's as a result of current account as well as capital account pressures. At its trough in October 1978, the effective rate of the dollar using bilateral weights was 20% below pre-June 1970 parities. The trend appears to have been reversed by the November 1 measures, where an official intervention package of about $30 billion was accompanied by a substantial rise in interest rates against an improving current account performance. The worsening of the oil situation in early 1979, by weakening relatively more the current account positions of Germany and Japan, helped the dollar. As the less than expected weakness of the U.S. economy in the third quarter and the worse than expected inflation record were weakening the dollar again, the measures of October 6, 1979, mostly directed at controlling domestic inflation by controlling the money supply and allowing interest rates to vary, had a favorable effect. Similarly, the decline of the dollar after the credit control measures of
CHART IV

THE "ACCELERATION HYPOTHESIS":

JAPAN

Source: IFS
Chart V

The "Acceleration Hypothesis";

Germany

Source: IFS
March 1980 when activity slowed, and money and interest rates fell sharply, was offset by the continued good current account performance of the U.S. this year relative to Japan but mostly relative to Germany, where a current account deficit of about $15 billion is expected.

These developments suggest that the interaction emphasized in the previous section between exchange rate determination and the inflation problem is a central problem of macroeconomic management that popular monetarism has ignored. In fact, an exogenous deterioration in the balance of payments, in causing currency depreciation, acts like a supply shock. Price inflation accelerates and unemployment increases unless macroeconomic policy accommodates the balance of payments shock. In the absence of wage response to prices, wage inflation will moderate because of higher unemployment. For a while, the J-curve effect leads to further depreciation and deterioration in the current account but if workers continue to accept the decline in real wages the problem of inflation does not extend to the labour market.

Macroeconomic policy, in particular monetary policy, may be the origin of a balance of payments effect on inflation. For example, expansionary monetary policy lowers interest rates, causes an ex ante deficit in the capital account which then forces depreciation of the currency. This is the much emphasized direct link between monetary policy and inflation in the present system of floating rates.

Consider now how much more difficult the adjustment problem becomes when inflation is of the struggle for income shares variant. In the extreme, suppose that workers are able to keep the real wage constant through indexation, as in Italy, or through a wage/price catchup process. Ultimately then, a deterioration in the balance of payments due for example to a world
recession translates into classical unemployment because maintenance of full employment with external balance would require a reduction in real wages. In the process of adjustment the rate of inflation is likely to be higher and unemployment also greater because the inflation process extends now also to the labour market.

If intervention in the foreign exchange market in the first case is helpful because it smoothes the inflation effects of excessive depreciation, it merely provides, in the second case, a temporary means of financing excessively high real wages and of maintaining employment at a higher level than otherwise would be possible.

In summary, the performance of the flexible rate system reflects a number of structural features of the economic environment of the 1970's. It reflects the difficulties of effecting current account adjustment through relative price changes in the short run, and the unpreparedness, as yet, of the private capital market to provide the necessary financing in a stable manner. It reflects, too, the interaction of exchange rates with the process of inflation, in a way that was not foreseen in earlier theoretical analysis. For some countries such as Germany and Japan the workings of the exchange rate mechanism has aided domestic stabilization policy and provided relief from adverse developments in the world economy. For other countries, inherent weakness in the balance of payments has combined with the exchange rate mechanism in such a way as to aggravate problems posed by the oil crisis and the stagnation of the world economy.

The problem for industrial countries continues to be not only how they can recover as a group but also how they can recover without dividing into two groups: a group of prospering countries with price stability on the one
hand, and a group of decaying countries with a persistent and intractable inflation-unemployment problem, on the other.
IV. THE PROBLEM OF OIL AND THE REDIVISION OF LABOR IN THE WORLD ECONOMY

We conclude with a brief discussion of the oil problem, which is a decisive factor determining success or failure of macroeconomic policy in the 1980's and of the emerging redivision of labor in the world economy, a lesser dramatic tendency of the 1970's but one with equally far reaching implications for macroeconomic policy.

A pressing question at the present time is whether oil will be available and at what price in the next ten years or so, during which industrial countries will continue to be heavily dependent on imports of oil from the OPEC countries.

During the 'belle epoque' of growth, energy was plentiful and declining in price expressed in real terms. From 1955 to 1973 while energy consumption increased twice as fast as GNP in OECD countries (Table VII), oil consumption increased twice as fast. Because of huge discoveries in the Middle East, Africa and the USSR, the stock of discovered oil reserves nevertheless increased year after year, at an average annual rate of 7% (Table VIII).

This situation began to change in 1972: for the first time in the post war period, oil prices increased as a result of market pressures, from $2.48 per barrel in 1972 to $3.04 per barrel in August 1973. However, the effect of market pressures on the price was soon swamped by the historic decision of the OPEC to increase the price of oil by 360 per cent to $10.95 in January 1974. After remaining stable for some years, the price of oil started to increase sharply in the Rotterdam market in the winter of 1978, in reflection of the tightening supply-demand situation mainly caused by speculative inventory buying prompted by the Iranian situation. In March 1979, the spot price of a barrel of crude oil was $20.00 while the posted price at Ras Tanura was $13.34 (Chart VI).
TABLE VII

ENERGY CONSUMPTION AND ECONOMIC GROWTH, INDUSTRIAL COUNTRIES

Average Annual Rates of Change

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>3.5</td>
<td>3.6</td>
<td>0.7</td>
<td>2.5</td>
</tr>
<tr>
<td>Canada</td>
<td>6.3</td>
<td>5.1</td>
<td>2.7</td>
<td>3.2</td>
</tr>
<tr>
<td>Japan</td>
<td>10.8</td>
<td>10.0</td>
<td>4.1</td>
<td>4.1</td>
</tr>
<tr>
<td>Germany</td>
<td>4.1</td>
<td>5.1</td>
<td>1.2</td>
<td>2.3</td>
</tr>
<tr>
<td>France a)</td>
<td>5.1</td>
<td>5.4</td>
<td>0.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Italy a)</td>
<td>8.4</td>
<td>5.4</td>
<td>1.2</td>
<td>4.1</td>
</tr>
<tr>
<td>United Kingdom a)</td>
<td>1.1</td>
<td>3.0</td>
<td>-0.3</td>
<td>1.2</td>
</tr>
<tr>
<td>OECD</td>
<td>4.4</td>
<td>4.3</td>
<td>1.0</td>
<td>2.8</td>
</tr>
</tbody>
</table>

a) Gross Domestic Product.

TABLE VIII

WORLD PRIMARY ENERGY PRODUCTION
Average Annual Rates of Change

<table>
<thead>
<tr>
<th>Source</th>
<th>1955-73</th>
<th>1973-79</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL</td>
<td>7.0</td>
<td>1.0</td>
</tr>
<tr>
<td>NATURAL GAS</td>
<td>6.8</td>
<td>0.7</td>
</tr>
<tr>
<td>COAL</td>
<td>0.3</td>
<td>2.3</td>
</tr>
<tr>
<td>HYDRO POWER</td>
<td>5.7</td>
<td>3.5</td>
</tr>
<tr>
<td>NUCLEAR POWER</td>
<td>---</td>
<td>20.6</td>
</tr>
<tr>
<td>TOTAL PRIMARY ENERGY</td>
<td>4.7</td>
<td>1.7</td>
</tr>
</tbody>
</table>

CHART VI

POSTED AND SPOT PRICE OF CRUDE OIL

(quarterly data 1973;3 – 1980;3)
Estimates of the future outlook vary greatly but, in view of the still unsettled situation in some producers, particularly Iran and Iraq and the production policies adopted by other producers, it seems reasonable to assume that OPEC production will continue to decline and therefore that the supply of oil available to industrial countries will decline from the level prevailing before the second oil crisis (Table VIII). Thus, despite encouraging trends in energy conservation (Table VII), the consensus view of very low short run price elasticity of demand suggests that the real price of oil will certainly continue to increase, and possibly quite sharply, in the coming years if the OECD countries maintain even the moderate growth rate realized during the boom of 1977/78. Therefore cost push inflation, balance of payments problems and deterioration of the terms of trade will be a key element in the macroeconomic environment of the coming years.

Another key aspect of the energy problem is evident by comparing total net imports of oil from OPEC by OECD countries on the one hand, and net imports by the United States on the other. While, except for the dip in 1975, the total level of OECD imports has remained roughly at the 1973 level of 25-26 million barrels a day, the share of U.S. oil imports has increased substantially from about 24% to about 34%. This has been possible because of slow growth in Japan and Europe, and the relief from North Sea oil. In the future, any increase in oil imports by one country will reduce the supply available to other countries while increasing further the real price at which it is available. This zero-sum interdependence is entirely new and it must be recognized as a key consideration in the planning of macroeconomic policy in the OECD area.

The dramatic success of OPEC in becoming a major force in determining the continuation or abrupt end of prosperity in industrial countries has
overshadowed another development which will be of far reaching significance in the decades to come. Indeed, it is already posing major adjustment problems in European countries. This is the growth of manufacturing exports by a group of fast growing developing countries, documented in Table IX. Despite the recession in the world economy these countries more than doubled the volume of their exports from 1970 to 1978. Their growth has continued vigorously and in textiles, shoes, steel and ship building their success has threatened profits and employment in established industries in the old industrial countries.

It is, however, important to bear in mind the current magnitude of this development. The share of the group of fast growing developing countries in world trade is less than half of Japan's share alone. The entire output of steel in the developing countries is only of the same order of magnitude as the annual output of Nippon or U.S. Steel.

But over time there will be a problem, and the problem is twofold. First, the adjustment problem in industrial countries is much more difficult now because they have to adjust to expansion on interindustry trade rather than to the expansion of intraindustry trade as was the case in earlier decades when trade grew mainly between industrial countries. Second, the adjustment will be particularly hard, if indeed at all possible unless the industrial countries resume growth which enables the shifting of resources from declining industries to occur without politically unacceptable hardship.

The problem of newly industrializing countries (NIC's) ties in with the inflation unemployment problem: their success increases structural unemployment at the same time as it weakens some countries' balance of payments positions and thus adds to inflation.
### TABLE IX

Export Volume by Major Regions

1970=100

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Developed Market</td>
<td>131</td>
<td>140</td>
<td>134</td>
<td>149</td>
<td>156</td>
<td>165</td>
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<tr>
<td>Economies</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Oil Exporters$^a$</td>
<td>132</td>
<td>111</td>
<td>93</td>
<td>105</td>
<td>105</td>
<td>100</td>
</tr>
<tr>
<td>Fast Growing Exporter</td>
<td>151</td>
<td>156</td>
<td>151</td>
<td>187</td>
<td>191</td>
<td>220</td>
</tr>
<tr>
<td>of Manufactures$^b$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 Least Developed</td>
<td>88</td>
<td>82</td>
<td>78</td>
<td>84</td>
<td>91</td>
<td>89</td>
</tr>
<tr>
<td>Countries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Developing</td>
<td>122</td>
<td>121</td>
<td>121</td>
<td>138</td>
<td>148</td>
<td>154</td>
</tr>
<tr>
<td>Countries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^a$Oil accounting for more than 50% of exports in 1974.

$^b$Argentina, Brazil, Hong Kong, Korea, Singapore (Taiwan excluded).

Table IX also draws attention to the fact that in the same way that industrial countries are in the danger of dividing themselves into prospering and decaying countries, the developing countries are also becoming a more and more differentiated group, with OPEC and NIC's in the one extreme and the poverty stricken countries, mainly dependent on exports of primary products, on the other. For these countries, too, the restoration of growth in industrial countries may be the only hope of progress.
V. CONCLUSION

Excessively expansionary monetary and fiscal policies pursued in industrial countries contributed to the acceleration of world inflation in the 1970's. The reversal of these policies together with the contractionary supply and demand effect of the oil price increase brought an abrupt end to the world-wide boom and started the period of slow and hesitant growth that has now lasted over five years, and is likely to continue for the foreseeable future.

During these years the overriding concern of macroeconomic policy has been the struggle against inflation. Some countries have been successful in virtually eliminating open inflation but for industrial countries as a group inflation continues to be a problem.

One alternative of policy is to continue to fight inflation by monetary and fiscal policies. We have argued that such a strategy will not alone solve the inflation problem, but will only change the symptoms from open inflation to inflation suppressed by slow growth and high unemployment.

The industrial countries had a serious problem of inflation after World War II, on top of enormous structural problems in the economies devastated by the war. There was a period of shortages and repressed inflation. In a remarkably short period of time, problems disappeared and the world economy was able to enjoy more than two decades of increasing prosperity with moderate inflation.

The question today is whether there is an option of noninflationary recovery through growth. Policies currently pursued do not offer such hope. They have already had a detrimental affect on future inflation and unemployment. The 'raison d'être' of such policies is the view,
which gained intellectual prominence with the victory of monetarism, that the best that macroeconomic policy, and economic policy in general, can do is to control inflation. Problems of slow growth, high unemployment and real economic instability are not within the realm of competence of social policy. To try to do something about them will only make matters worse.

It may be the case that restoration of market incentives and elimination of inefficiency in the government sector will be alone sufficient to provide the real stimulus that together with anti-inflationary monetary policy will produce prosperity with price stability in due course. That in any case, is the optimistic expectation of policies that are advocated by an increasingly large group. The implementation of this strategy in Britain and elsewhere provides interesting tests.

Such policies do recognize that monetary policy alone cannot cure the problem of stagflation. There is no question either that high taxation has reduced economic incentives in many of the European countries.

We doubt, however, whether the decentralized process of the market can alone provide a solution to the problems that confront industrial countries today. Certainly, the history of capitalism and of earlier global economic disturbances does not provide a basis for optimism.

The energy problem which is perhaps the most decisive issue in the years ahead cannot be solved by markets alone, but requires an effective and co-ordinated response by industrial countries as a group not only because the other part to the problem is a government organization with complex targets but also because the development of alternative sources of supply—such as nuclear energy—will entail difficult social and political considerations as well. In this respect, the problem at the
present time stems from the absence of government leadership rather than its presence.

Without the resolution of the energy problem choices confronting macroeconomic policy in terms of inflation, unemployment and growth will become more and more unattractive.

If there is a strong inertial and 'struggle for income shares' component to inflation, 'restoration of market incentives' and pursuit of tight money will not alone solve the inflation problem. It may not even be a viable alternative in all democratic societies. The basic consensus that has prevailed in German or Japanese society are as much responsible for the economic performance of these countries as the wisdom of their monetary authorities. Knowledge of monetary policy can be acquired easily and at little cost. The central banks of Italy and the United Kingdom could undoubtedly become as skillful in their use of monetary policy as those of Germany and Japan. But social change and real economic progress takes time. Before such time that these countries, and many others, have acquired the social and economic institutions, and the enterprising spirit, of the successful countries it is illusory to think that they can reach a lasting solution to inflation, unemployment and balance of payments problems by means of macroeconomic policy alone.

With OPEC, and with the differences that exist today between the ability of different industrial countries to compete in world markets and to cope with their internal inflation and unemployment problems, balance of payments problems and exchange rate pressures are likely to continue. It will be a mistake to attribute these problems to monetary policies alone and advocate solutions to them only in terms of simple minded rules of monetary conduct.
Monetary policy has been the obsession of macroeconomics for a long time. Great wisdom has been accumulated about its effects. But leaving the world economic system on the shoulders of central banks guided by that wisdom will not solve the problems that exist today.
Footnotes

1. Growth and fluctuations during this period have been extensively ana-
yzed and debated amongst economic historians. For instance, A. Lewis,
identifies the peaks of industrial activity in 1883 and 1907. We have
used the data reported in A. Maddison, "Phases of Capitalist Develop-
ment", Banca Nazionale del Lavoro Quarterly Review, June 1977. See
also the monumental W. Rostow, The World Economy: History and Prospect,

2. See J. Kuznets, Modern Economic Growth, New Haven: Yale University Press,
1966; Economic Growth of Nations: Total Output and Production Structure,
Cambridge: Harvard University Press, 1971, and "Modern Economic Growth:
Findings and Reflections", American Economic Review, June 1973 (Nobel
Lecture), and A. Lewis, "The Slowing Down of the Engine of Growth",

3. To borrow a phrase from H. Kahn, World Economic Development, New York;
Hudson Institute, 1979.

4. Similarities between the early 1900's and the 1970's are pointed out
by Lewis, op. cit., p. 136.

5. For the U.S. this is apparent in Figure 1 of M. Baily, "Stabilization
Policy and Private Economic Activity," 1978; 1, p. 14, reproduced in
J. Tobin, Asset Accumulation and Economic Activity, Oxford: Basil
Blackwall, 1980 (Johnsson Lectures), p. 47. See also A. Blinder,
Economic Policy and the Great Stagflation, New York: Academic Press,
1979; W. Branson, Trends in U.S. Trade and Investment since World War
Macroeconomics: The Evolution of Events and Ideas, NBER Working Paper
no. 459, February 1980.

6. The effect of macroeconomic performance on U.S. elections was pointed
out in G. Kramer, "Short-Term Fluctuations in U.S. Voting Behavior,
work along these lines in W. Nordhaus, "The Political Business Cycle",
Review of Economic Studies, April 1975; A. Lindbeck, "Stabilization
Policy in Open Economies with Endogenous Politicians", American
Economic Review, May 1976 (Elly Lecture); and R. Tuft, Political Control

7. See Lewis, op. cit., and Maddison, op. cit. This is apparent in plots
of annual values of inflation and growth in industrial countries com-
pared with the respective ten-year moving averages.

8. L. Izzo and L. Spaventa emphasize this divergence as an explanation of
the severity of the subsequent recession in Italy (Chapter 2 of this
volume).


13. Expressed in dollars per hour, total labor costs in Germany in 1978 were 9.79 and only about 8.1 in the U.S. In Italy and Japan, labor costs were $5.51 and $4.00 in the U.K. (data of the Institut der Wirtschaft, Köln, Germany). For a stylized story of the German economic miracle, see P. Kouri, "Profitability and Growth in the Small Open Economy" in A. Lindbeck (ed.), Inflation and Unemployment in Small Open Economies, Amsterdam: North Holland, 1979.


