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POLICY CO-ORDINATION AND WORLD ECONOMIC GROWTH

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INTRODUCTION

Continued, vigorous growth in world trade and world economic activity is of vital importance to all trading nations of the world. It offers an opportunity for countries which are struggling with debt servicing difficulties to increase their export earnings and to meet their repayment schedules. More generally, it represents a means by which developing (as well as developed) countries can increase output and improve standards of living. In countries which have opted for an outward looking, export-oriented economic strategy, such as the Asian newly industrialising countries, the role of world trade is even more critical as an engine of growth.

It is a matter of great concern, therefore, that in recent years there has been a number of episodes of trade friction, and other indications of a general rise in protectionist sentiments in industrialised countries, particularly the United States. Moreover, it would appear that there now exist significant risks in the outlook for continued world trade and economic growth in the near to medium term. To a large extent, these problems have arisen from the substantial trade and current account imbalances which have emerged among the major industrialised countries, particularly between the United States on the one hand and Japan and Germany on the other.

The economic policies adopted in the major industrialised countries to correct their external imbalances will have important implications for the world economy in general, and developing countries in particular. Clearly, if the deficit countries were to impose trade restrictions, the greatest risk would be that the other countries would retaliate, and that this could result in a full scale trade war. Even if no increases in protection were implemented, world trade could still lose buoyancy if deficit countries were to adopt contractionary policies which were not offset by appropriate measures in the surplus countries. It has often been suggested, therefore, that in the present circumstances international co-ordination of economic policies provides the best chance of achieving both a correction of the existing current account imbalances and a reasonable world economic growth.

The purpose of this paper is to review the historical background to the present crisis, the alternative policies which governments could adopt in response to the situation, and the role which international policy co-ordination could play in maintaining and promoting world economic growth.

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EMERGENCE OF INTERNATIONAL IMBALANCES

During the first half of the 1980s, substantial trade and current account imbalances emerged in major industrialized economies. The US current account, as a proportion of gross national product (GNP), deteriorated from a surplus of 0.4 per cent in 1980 to a deficit of 3.3 per cent in 1986. Partly as a reflection of this change, the current account surpluses of Japan and Germany increased significantly: by 1986, these surpluses had reached 4.4 per cent and 4.1 per cent, respectively (see Table 1 and Figure 1). Several reasons have been advanced for the emergence and persistence of these imbalances, the main one being a divergence between the economic policies adopted in the United States on the one hand, and Japan and Germany on the other (Marris 1985; International Monetary Fund 1987).

In 1979, the US Federal Reserve Board decided to abandon interest rate targeting in favour of monetary targeting, and also to tighten monetary policy in response to the buildup of inflationary pressures generated by the second oil price shock. Subsequently, the Reagan administration introduced substantial income tax reductions. However, government expenditures (particularly defence) continued to increase. It has been estimated (International Monetary Fund 1987) that, during the period 1980 to 1985, the cumulative fiscal stimulus given to aggregate demand by the rise in the structural budget deficit amounted to about 3 per cent of GNP (see Table 1 and Figure 2).¹

As a consequence of this monetary tightening and fiscal relaxation, nominal and real interest rates increased sharply relative to both historical US levels and those of other industrialised countries (see Table 1 and Figure 3). Capital inflows to the United States increased, placing considerable upward pressure on the US dollar. It has been estimated (Morgan Guaranty 1986b) that, between July 1980 and March 1985, the effective value of the US dollar increased by 55 per cent in nominal terms and 51 per cent in real terms (Table 1 and Figure 4).²

The net effect of this policy package on the level of economic activity after 1982 was strongly stimulatory. Initially, there was a sharp decline in investment expenditure as a share of GNP (from 20.5 per cent in 1979 to 16.6 per cent in 1982). However, the Economic Recovery Tax Act of 1981 introduced a number of changes to company taxation which helped to encourage a fairly strong rebound in investment demand: the share of investment in GNP rose to 19.2 in 1985

¹ "Fiscal stimulus" is measured as the change in the structural budget deficit. The "structural" or "cyclically adjusted" deficit is the budget deficit which (it is estimated) would be observed if the economy were operating at or near its normal peak. It is a better indicator of the fundamental stance of fiscal policy than the actual deficit, as the latter tends even under constant policies to rise when the level of economic activity is low and to fall when activity is buoyant. For a further discussion of this topic as well as of the estimation of OECD structural deficits in recent years, see Price and Muller (1984).

² It has been suggested (see, for example, Frankel and Froot 1986) that much of the latter part of this appreciation was due to the self-fulfilling and cumulative "bandwagon" effects of the initial appreciations on exchange rate expectations. Other authors (for example, Masson and Blundell-Wignall 1985) place more emphasis on actual and anticipated fiscal policies.

TABLE 1: Economic Indicators (Annual Average)

Indicator	Unit	1978	1979	1980	1981	1982	1983	1984	1985	1986
General government fiscal impulse(a)										
United States	% of GNP	0.0	-0.5	0.7	-0.5	0.5	0.6	0.6	0.7	-0.3
Japan	% of GNP	1.7	-0.5	-0.4	-1.2	-0.1	-0.2	-1.2	-1.0	-0.7
Germany	% of GNP	0.4	0.8	-0.2	-0.5	-1.9	-0.4	0.6	-0.8	0.4
Rate of monetary growth(b)										
United States	%	8.2	7.8	6.2	7.0	6.6	11.1	7.0	9.2	13.4
Japan	%	10.8	10.7	2.6	3.3	5.8	3.6	2.8	5.0	6.9
Germany	%	13.5	7.5	2.4	1.1	3.6	10.3	3.2	4.3	8.5
Short term interest rates(c)										
United States	%	11.75	15.25	21.50	15.75	11.50	11.00	10.75	9.50	7.50
Japan	%	4.50	6.51	8.16	6.95	6.28	5.89	5.70	5.71	4.35
Germany	%	5.50	9.75	11.50	13.00	8.75	7.75	7.75	7.25	6.75
Rate of growth in real GDP										
United States	%	5.3	2.5	-0.2	1.9	-2.5	3.6	6.8	3.0	2.9
Japan	%	5.2	5.3	4.3	3.7	3.1	3.2	5.1	4.7	2.4
Germany	%	3.3	3.9	1.5	0.0	-1.0	1.9	3.3	2.0	2.5
Nominal effective exchange rate(d)										
United States	index	92.2	90.8	90.7	99.5	109.8	114.2	122.4	127.1	106.0
Japan	index	107.0	99.5	95.5	105.8	98.6	107.8	113.0	115.8	150.1
Germany	index	96.1	99.8	100.0	97.2	102.8	107.6	107.4	107.8	116.1
Real effective exchange rate(d)										
United States	index	90.4	89.9	89.9	100.8	109.3	112.7	119.6	122.5	101.6
Japan	index	118.7	105.7	103.0	104.8	92.4	96.8	97.8	96.6	119.3
Germany	index	105.7	107.1	103.5	96.9	99.9	101.0	98.0	96.7	103.6
Current account balance										
United States	% of GNP	-0.7	0	0.1	0.2	-0.3	-1.4	-2.8	-2.9	-3.3
Japan	% of GNP	1.7	-0.9	-1.0	0.4	0.6	1.8	2.8	3.7	4.4
Germany	% of GNP	1.4	-0.8	-1.9	-0.8	0.6	0.6	1.3	2.4	4.1

(a) Change from the previous year in the structural budget deficit as a percentage of potential GNP. A positive sign corresponds to an increase in the structural deficit and thus an expansionary impulse; a negative sign represents a restrictive impulse. (b) 'Narrow money' (M1). (c) End of year data; commercial bank lending rates to prime borrowers. (d) Morgan Guaranty index; 1980-1982=100.

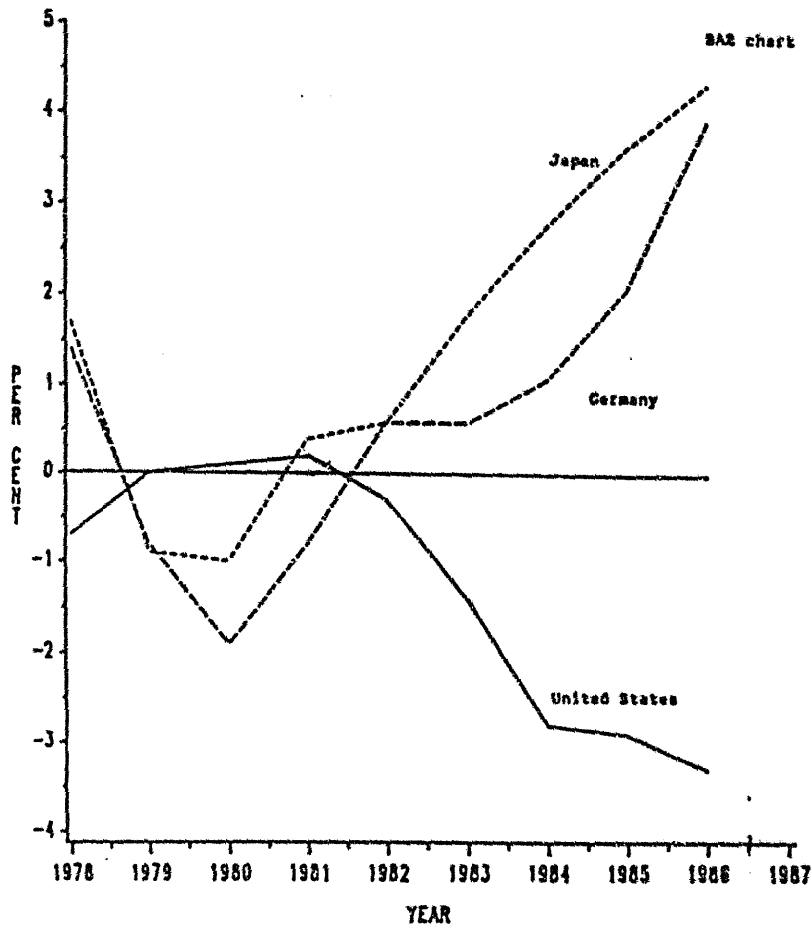


Figure 1: CURRENT ACCOUNT BALANCE
(Share of GNP)

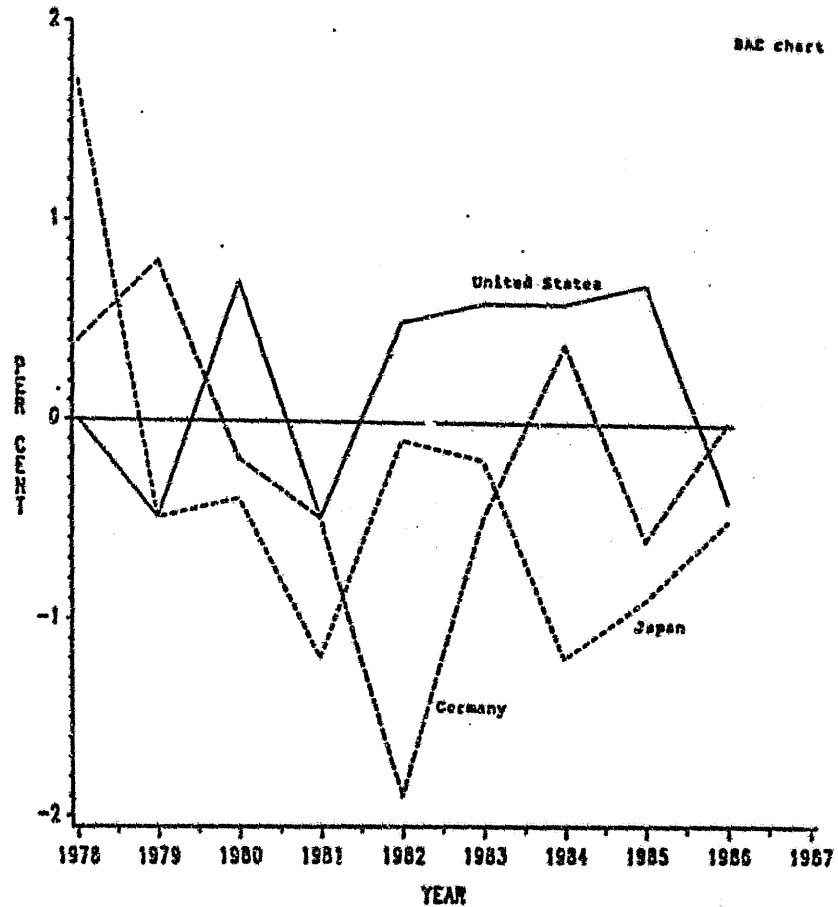


Figure 2: GENERAL GOVERNMENT FISCAL IMPULSE

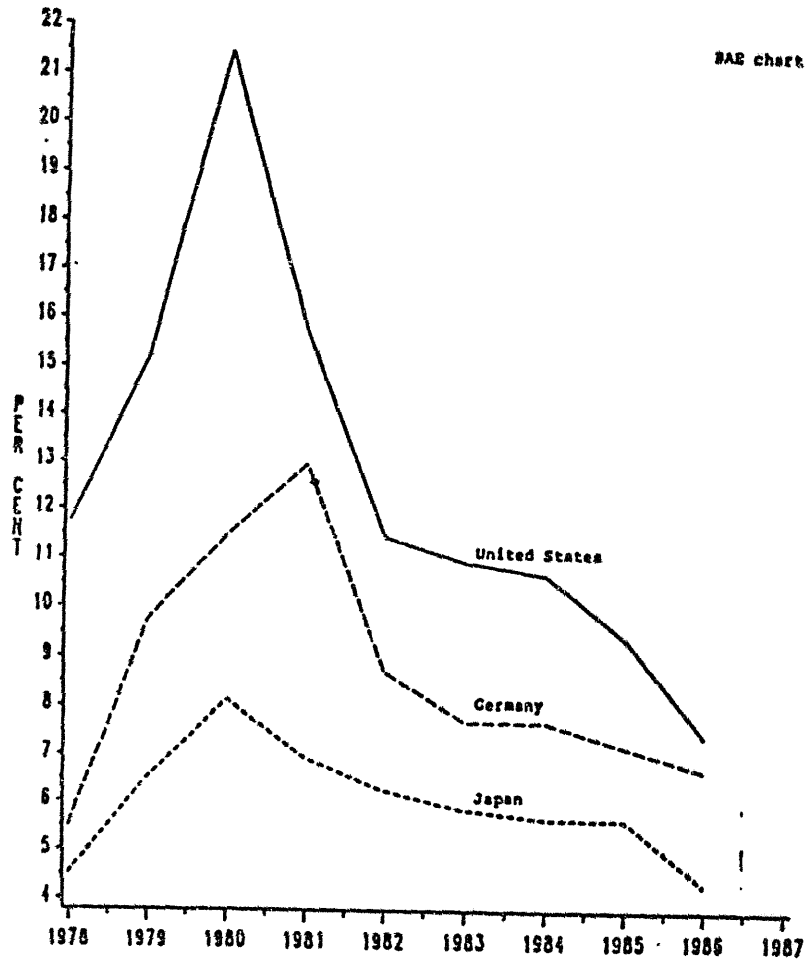


Figure 3: SHORT-TERM INTEREST RATE

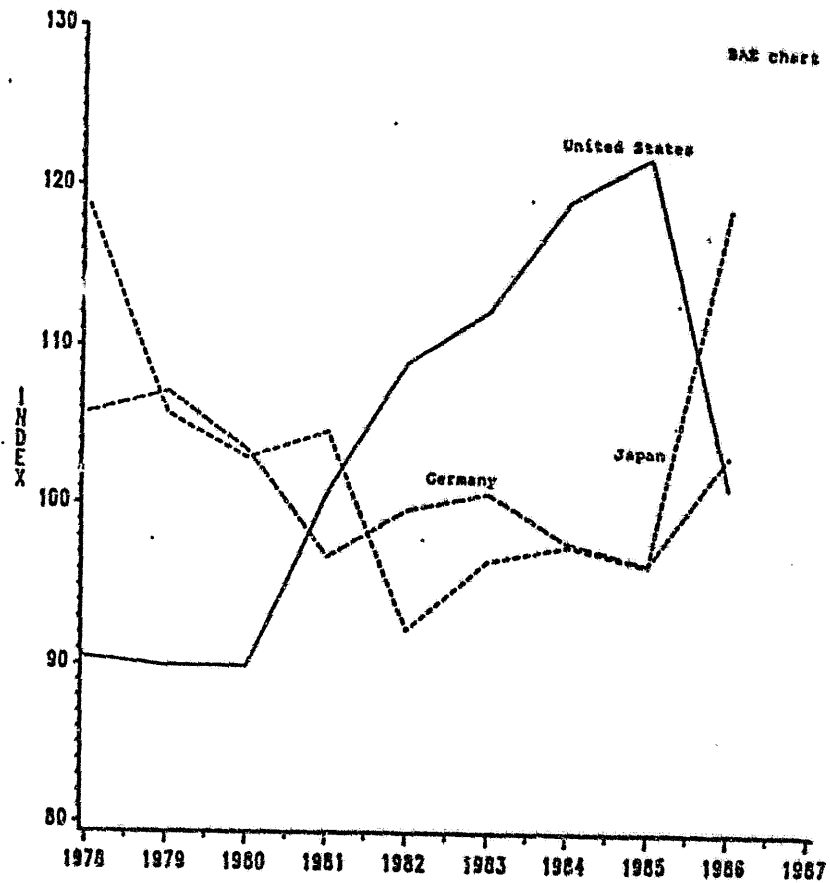


Figure 4: REAL EFFECTIVE EXCHANGE RATE

(compared with an average of 19.1 per cent between 1960 and 1970). In the meantime, private consumption demand recovered in 1983 and maintained relatively strong growth between 1984 and 1986. Real private consumption increased, on average, by 4.3 per cent between 1983 and 1986, compared with an average growth rate of 3.0 per cent between 1969 and 1982.

These stimulatory effects were augmented by a (temporary) easing in monetary policy in August 1982. In 1983 and 1984 the US economy entered one of the strongest economic recoveries of the post-war period. Real GNP grew by 3.6 per cent in 1983 and 6.4 per cent in 1984, whereas it had fallen by 2.5 per cent in 1982 (see Table 1 and Figure 5). As domestic demand increased considerably faster than domestic production, net imports grew rapidly to cover the shortfall. The result was a deterioration in the current account balance, reflecting the increase in capital inflow and appreciation of the US dollar discussed above.

In contrast to the US experience, the economic recovery in the early 1980s in Japan and Western Europe (in particular, the Federal Republic of Germany) was the weakest in the post-war period. Between 1982 and 1984, domestic demand increased by 6 per cent in Japan and less than 3 per cent in Western Europe, compared with nearly 15 per cent in the United States. (Indeed, increased net exports to the United States provided much of the stimulus to economic growth in Japan and Western Europe during this period). Overall, between 1982 and 1986, total employment increased by only 4 per cent in Japan and was unchanged in Germany, as against a growth rate of 10 per cent in the United States.

This sharp divergence in domestic demand growth between the United States and other major industrialised countries may be explained largely in terms of differences in fiscal policy. (While fiscal policies diverged, monetary policies tended to follow similar courses; see Figure 6. In an effort to control inflationary pressures arising from initial depreciations of the domestic currencies relative to the US dollar, and to prevent further depreciations, monetary policies in Japan and Western Europe were tightened, resulting in historically high interest rates - see Table 1 and Figure 3). In both Japan and Germany, the policy response to the second oil shock was monetary and fiscal restraint, to contain the inflationary consequences of the shock and to reduce the government budget deficit. The latter objective was prompted by a concern that budget deficits were already too high (Llewellyn 1983). Japan maintained a restrictive fiscal policy throughout the period 1981 and 1986 (see Table 1 and Figure 2). Apart from a period of moderately expansionary fiscal policy in 1984, Germany also adopted a restrictive stance over this period.

These international differences in economic policy resulted in, first, a substantial appreciation of the US dollar in both nominal and real terms and, second, a greater increase in the rate of growth in aggregate demand in the United States than in Japan or Western Europe. Both of these factors tended to increase net import demand in the United States; Marris (1985) has estimated that between 1980 and 1984 they together accounted for 90 per cent of the cumulative US current account deficit of US\$103b. By the same token, these factors tended to increase Japan's and Germany's net exports. Between 1980 and 1986 the US trade deficit with Japan rose from US\$1b to US\$16b. Using a dynamic simulation approach, McKibbin, Roubini and Sachs (1987, p. 19) also find that the single largest factor in explaining the observed changes in the United States and Japanese trade balances is each country's own fiscal policy.

The United States, which was the world's largest net creditor nation in 1982, became a net debtor nation in 1985 (for the first time since World War II). The country's net external liabilities have increased rapidly in recent years, exceeding

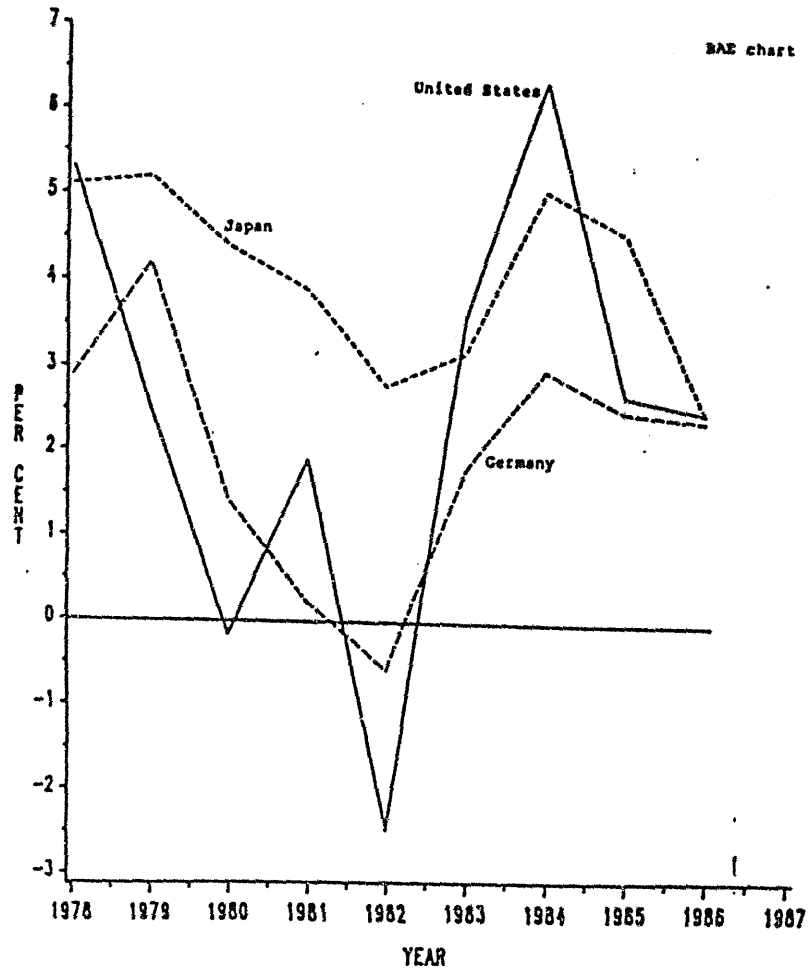


Figure 5: RATE OF GROWTH OF REAL GNP

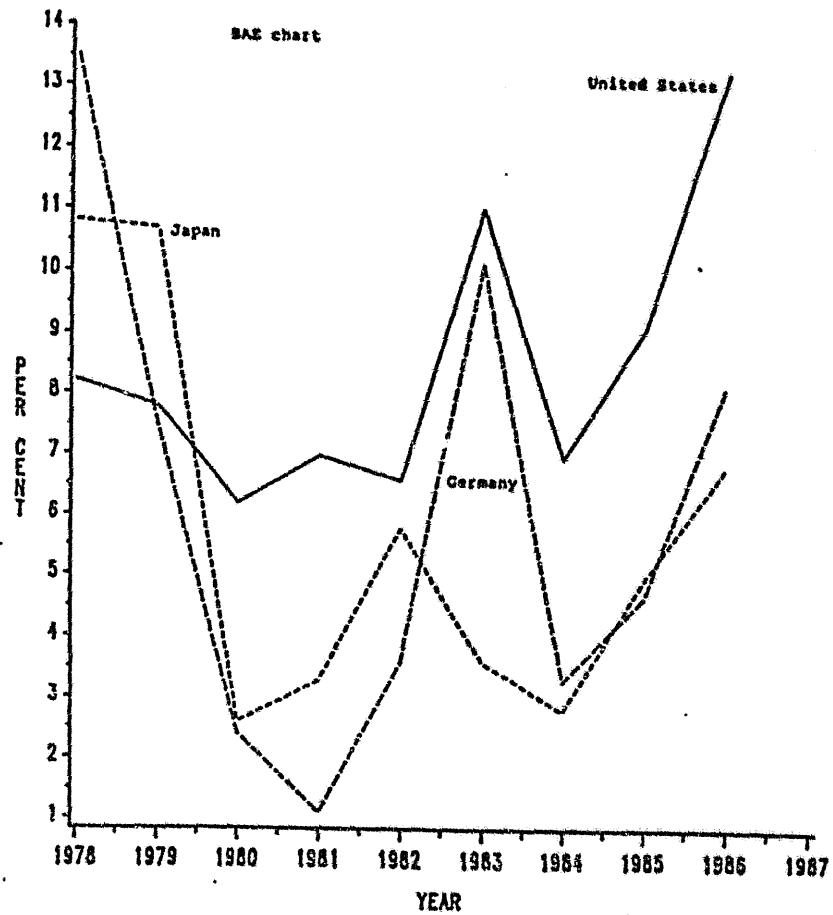


Figure 6: RATE OF MONETARY GROWTH

US\$250b (or 6 per cent of GNP) by the end of 1986, and are expected to continue to rise in line with persistent current account deficits. Meanwhile, net external assets of Japan and Germany have increased sharply to nearly US\$200b and US\$100b, respectively, by the end of 1986 (OECD 1986b).

The emergence and persistence of these substantial trade and current account imbalances have led to a buildup of protectionist pressures, particularly in the United States (Williamson 1985) where a sharp contraction has occurred in most principal trade sectors. The virtual disappearance of the US agricultural trade surplus (associated partly with the protectionist practices of other industrial countries) appears to have caused considerable concern. But the country has also incurred a significant loss in its share of world trade in manufactures. Manufacturing is the US sector which has been most adversely affected by increased import penetration (Morgan Guaranty 1986c).

The buildup in protectionist sentiment culminated, in early 1987, in the imposition of trade sanctions on Japanese imports of semi-conductors, and there was considerable speculation about a US-Japan trade war. Legislation subsequently under consideration by Congress (such as the Gephardt amendment which proposed automatic commercial reprisals against countries with large trade surpluses with the United States) also pointed to the possibility of similar frictions in the future. Heightened international protectionism poses a significant threat to continued growth in world trade and may aggravate the debt servicing problems of many developing countries. Thus, it is in the interests of world economic growth that non-protectionist steps be taken to correct the trade imbalances.

ALTERNATIVE WAYS TO CORRECT THE IMBALANCES

On 22 September 1985, finance ministers from the "Group of Five" major industrialised countries (United States, Japan, Germany, France and the United Kingdom) agreed that they would implement policies designed to reduce the substantial current account imbalances while preserving satisfactory world economic growth. (This became known as the Plaza Agreement, after the hotel where the negotiations took place). Among other things, it was agreed that the United States would endeavour to reduce its government budget deficit; that substantial currency re-alignments were required; and that, if necessary, governments would co-ordinate their interventions in foreign exchange markets to achieve these exchange rate adjustments.

Following the announcement of the agreement (and the subsequent currency market intervention) a sharp correction in the major exchange rates occurred. The US dollar, which had peaked in March 1985 and had begun to drift slowly downward in the intervening months due to expectations of some reduction in the budget deficit and a slowdown in economic growth, weakened rapidly. By the end of September 1985 the US dollar had depreciated by 10 per cent against the yen and by 7 per cent against the deutschmark. Subsequently, between September 1985 and September 1987 the effective value of the US dollar declined by 25 per cent in nominal terms and by 24 per cent in real terms.

Despite these substantial exchange rate adjustment, progress in reducing the current account imbalances has been slow (Morgan Guaranty 1987). In the March quarter 1987, for example, the US current account deficit (seasonally adjusted) narrowed only slightly to US\$37b from the then record US\$38b of the December quarter 1986. (Since then, it has risen again, to \$43b in the September quarter 1987). This slow progress is largely attributable to lags inherent in the overall adjustment process. It takes time for changes in exchange rates to be fully

"passed through" (that is, fully reflected in the domestic-currency prices of imports) and then for production and trade to respond to these changes in relative prices. In addition, the J-curve effects of exchange rate changes tend to aggravate, in the short run, current account imbalances in terms of the domestic currencies.

It has often been argued, moreover, that the changes in exchange rates that have occurred so far are likely, by themselves, to have not only a *delayed* but also *limited* impact on the imbalances (International Monetary Fund 1987; OECD 1987a). This expectation is partly based on a belief that there has been a permanent deterioration in various non-exchange-rate aspects of US competitiveness - erosion of technological leads, sluggish productivity growth, lack of dynamism in export market promotion, and so on (Commission on Industrial Competitiveness 1985).³ In addition, there is some concern that the recent depreciation of the US dollar may have been achieved rather by a relaxation of US monetary policy than by a tightening of fiscal policy, and therefore that its beneficial effects may be eroded over time by rising inflation.

Is the answer to the imbalance problem, then, to allow (or even to engineer) further US depreciations? If there were no substantial changes in the mix of policies and other fundamental factors, further weakenings of the US dollar would indeed be likely (due to the accumulating external indebtedness and increased risks on holding dollar assets) even without government prompting. The risk associated with this outcome is that inflationary pressures could reappear. There are indications that a buildup of such pressures has already occurred. (Consumer prices rose by 4.5 per cent in the year ended November 1987, compared with 1.1 per cent during 1986.) A resurgence of inflation could prompt the Federal Reserve to adopt much more stringent monetary policies, possibly leading to an economic recession in the United States. The consequent reduction in US import demand would also affect export and output growth in Japan and Western Europe. Lower economic activity and higher interest rates in the industrialised countries would have serious implications for developing countries, particularly those with large external debts.

What are the alternative courses of action? There appears to be a consensus that the United States can substantially reduce its current account deficit by cutting its government budget deficit (Marris 1985; United Nations 1986; International Monetary Fund 1987; OECD 1987a). A fiscal contraction, however, would tend to dampen aggregate demand, with associated risks of recession in the United States and world economies similar to those discussed above. (Of course, interest rates would then tend to be lower than in the case of monetary tightening.) In view of such risks, it has often been suggested that the most appropriate solution to the current policy dilemma is, for the United States, to proceed with reductions in the government budget deficit and, for Japan and Germany, to increase their government budget deficits sufficiently to offset the negative effects of the US cuts both on their own exports and on world aggregate demand (Marris 1985; Morgan Guaranty 1987). A *moderate* global monetary relaxation has also been suggested as part of this overall strategy.

Dean and Koromzay (1987) examined these issues and attempted to quantify the various influences on the basis of simulations of the OECD's Interlink model.

³ To the extent that such deterioration did occur, it would have been exacerbated and hastened by the substantial real appreciation of the dollar in the early 1980s.

They found that a reduction in the US growth rate would be more effective in reducing the US current account deficit than a corresponding increase in non-US growth. However, slower US growth would involve a global lowering in economic growth rates, and the corresponding deterioration in the current accounts of the rest of the world would not be confined to the surplus countries. They concluded by advocating "a combination of some slowing in the United States, induced by further reductions in the budget deficit, a degree of faster growth in surplus countries and some further movement in exchange rates" (p. 30).

This conclusion is in line with the results obtained by Maris (1985) who considered four alternative approaches to the correction of the current account imbalances. In the "baseline" case, the US dollar was assumed to remain, in both nominal and real terms, at the average values of the six months to March 1985, and economic policies were assumed to be unchanged. In the "hard landing" scenario, all adjustments were to be borne by exchange rates, so that the US dollar would fall by over 35 per cent in real terms. In the "soft landing" scenario, the United States was assumed to reduce its structural budget deficit to 2.0 per cent of GNP by 1990. Finally, in the "co-operative" scenario, the US structural budget deficit was to be reduced to zero by 1990 and other OECD countries were to take appropriate expansionary actions. The simulation results indicate that OECD economic growth would be stronger, while US inflation and European unemployment would be lower, in the co-operative scenario than in any of the other scenarios.

Morgan Guaranty (1986a) also modelled four scenarios in order to assess the requirements for adequate adjustment of the US current account within an acceptable time. In the baseline case, the effective exchange rate (both nominal and real) and OECD economic policies were assumed to be constant over the forecast period 1986 to 1990. Under these assumptions, the US trade account deficit would decline somewhat but would level out above US\$100b by 1990. (It was US\$148b in 1986.) Net external debt would rise to US\$666b in 1990. This significant increase in US external debt could result in a crisis of confidence in the US dollar.

In the second case, the impact of a tightening in monetary policy (in support of the US dollar) was examined. Real interest rates would increase sharply, the US economy would slip into recession and unemployment would rise to 14.8 per cent in 1990 - more than twice the 1985 level of 7.2 per cent. However, the current account deficit would be reduced to about US\$50b by 1990; the net external debt would be US\$435b by 1990.

Should the authorities allow the US dollar to depreciate further (by 15 per cent during 1986 and a further 15 per cent by 1988), as was assumed in the third case, the current account deficit would fall markedly (to below US\$50b), there would be moderate economic growth and no significant change in unemployment, but there would also be a resurgence in inflation (from 1.5 per cent in 1986 to 6.3 per cent in 1990) and an increase in nominal interest rates.

In the fourth case, the implications of policy co-operation between the "Group of Five" countries were considered. Japan and Western European countries were assumed to adopt more expansionary policies such that annual economic growth in these countries would average 0.6 percentage points above the baseline case. The US dollar was assumed to decline by about 18 per cent. In these circumstances, the outcome would be quite similar to that in the previous case, but with lower inflation and nominal interest rates. "Altogether, this co-operative approach promises a much better outcome for the world economy than do solutions to the US trade problem relying on US actions alone" (Morgan Guaranty 1986a, p. 10).

Though calculations such as these cannot be taken too literally, they do provide an indication of the likely scale of the required adjustments, and illustrate the desirability of international co-ordination in the present context.

TOWARD GREATER HARMONISATION

The Plaza Agreement indicated a recognition by the governments of the major industrialised countries that the global imbalances were not sustainable in the medium to long term and that the preferred solution involved international co-ordination of macroeconomic policies. Nevertheless, while the participating governments were successful in encouraging substantial exchange rate realignments, there has been only limited progress toward correcting their inconsistent fiscal policies.

In the United States, the introduction of the Gramm-Rudman-Hollings legislation (the Balanced Budget Act) in 1985 signalled a policy shift toward fiscal restraint. The budget deficit was reduced considerably from US\$221b in fiscal 1986 to US\$148b in fiscal 1987. However, recent progress in negotiations between the Administration and Congress has been limited, despite the renewed pressure for adjustment following the October 1987 share market fall, and the deficit is not expected to decline significantly in fiscal years 1988 and 1989 (OECD 1987b).

In Japan, the government announced, in May 1987, an economic package designed to increase domestic demand by ¥6 trillion (or US\$40b). The package has since been cut substantially (by about two-thirds). Nevertheless, fiscal policy was less restrictive in 1986 than in the previous year and probably was broadly neutral in 1987. In Germany, fiscal policy was neutral in 1986, and probably in 1987 as well. Further tax cuts are planned for 1988 (including some measures initially included in a larger tax reform scheduled for 1990). In short, fiscal policy in Japan and Germany has also moved in the right direction but only very slowly. On the whole, fiscal policy in the major industrialised countries, excluding the United States, is expected to be slightly restrictive in both 1988 and 1989 (OECD 1987b).

There are a number of possible reasons for the lack of progress to date. First, it may reflect the continuing divergence in economic priorities between the major countries. In particular, it is clear that Japan and Germany have been most reluctant to stimulate their economies significantly, because of their desire to control inflation and reduce budget deficits. Similarly, progress has been slow in the United States: the Reagan administration was adamant that it would accept no reductions in the budget deficit which involve significant tax increases, and that substantial increases in defence spending must proceed.

Second, despite protestations to the contrary, the various governments may in fact remain unconvinced of the possible net benefits *to their own countries* of international co-ordination. In the light of recent results in the dynamic game theory literature (see the Appendix), this scepticism may not be entirely misplaced, even though its consequences are likely to be sub-optimal from a global point of view.

Third, government institutions in some countries may be such as to make it very difficult to speedily implement agreed changes in policies. For example, in the United States neither the Administration nor Congress has sole responsibility for the budget, so that changes in fiscal policy typically involve a long drawn out process of negotiations. Political events, such as general elections, also often delay changes in economic policy.

Largely as a result of this lack of progress in implementing co-ordinated policies, the OECD (1987b) has forecast only a slight correction in the current account imbalances in the United States, Japan and Germany by 1989. Some progress in resisting protectionist pressures has been made with the launch, in July 1987, of the "Uruguay Round" of multilateral trade negotiations under the GATT (General Agreement on Tariffs and Trade). Nevertheless, the overall situation remains quite serious, and every effort should be made to encourage the major countries to co-operate more effectively in order to ensure continued growth in world trade and economic activity.

The sharp fall in international share prices which occurred in October 1987 will undoubtedly exert some influence on the economic outlook. The fall occurred after a five-year period of steep rises. Notably, the share price rises during the year prior to the crash were not reflected in a correspondingly rapid increase in private sector activity. Thus, it would appear that much of the previous boom had been due to speculative activity. In a sense, therefore, the October decline merely represented a market correction, albeit a rather dramatic one. The fall in share prices is likely to have a dampening effect on economic growth in 1988 and 1989 through the effects of reduced wealth and weaker consumer and investor confidence. However, the share market crash and subsequent US dollar weakness may induce further co-ordinated policy action between the United States, Japan and Germany.

Whether or not the present global imbalances can be resolved satisfactorily over the next several years, similar problems are likely to recur in the future as a consequence of inconsistent national economic policies. To correct, and perhaps even to prevent, such large imbalances, a systematic procedure for international surveillance and policy co-ordination would be desirable. The role of such a procedure would be to encourage all countries, when developing their own medium term economic strategies, to take into account both international repercussions of such strategies and their sustainability in view of the policies adopted in other countries.

In this context, it should be noted that in 1986 the International Monetary Fund's Interim Committee expressed interest in the use of indicators relating to policy actions and economic performance, with an emphasis on a medium term framework, to serve as a basis for consultations and discussions (International Monetary Fund 1987). At the Venice Summit in June 1987, finance ministers went further and agreed on a set of economic indicators for this purpose (The Economist 1987). It remains to be seen how successful these agreements will be in bringing about effective international co-ordination.

CONCLUSION

The focus of this paper is on the role of international policy co-ordination in promoting world economic growth. For over 20 years, under the Bretton Woods system of pegged exchange rates, an implicit form of international policy co-ordination was achieved, with the United States in the lead and with most other countries following suit in order to maintain fixed parities against the US dollar. Since the early 1970s, in contrast, the move toward generalised floating has facilitated greater autonomy in national economic policy making. Events of the late 1960s and early 1970s suggest that many governments have considered this increased flexibility to be a highly desirable - perhaps even essential - part of their decision process. A by-product of this greater flexibility, however, has been the emergence of significant differences in economic policy, which have contributed to substantial and persistent trade imbalances. At the same time,

interdependence has continued to increase through high capital mobility and improved means of communication and transport. These developments have led to calls for greater harmonisation among national economic policies.

Since early 1985, considerable re-alignments have occurred between the major currencies (yen/US\$ and DM/US\$). However, these exchange rate adjustments are unlikely to be sufficient, by themselves, to ensure a rapid and significant reduction in the external imbalances. One important reason is that, without a convergence in national macroeconomic policies, domestic demand is likely to continue to grow more rapidly in the United States (relative to domestic production) than in either Japan or Germany.

To date, the US government has made some limited progress in tightening fiscal policy, and exports to the United States are likely to grow less rapidly as a result of the dampening effect of this action on aggregate demand, and of recent exchange rate adjustments. Nevertheless, further substantial reductions in the budget deficit will probably be necessary, and some have already been planned. Therefore, in the absence of a corresponding stimulus from fiscal policy in other countries - particularly Japan and Germany - growth in world trade and world economic activity is likely to slow down.

Thus, international policy co-ordination is probably the best means of eliminating trade imbalances without endangering world economic growth in the near term. Yet progress in achieving greater harmonisation between national policies has been disappointingly slow and modest. This lack of progress poses significant risks for continued world economic growth, and deserves special attention by all governments.

A key issue, not discussed here, is whether international policy co-ordination necessarily implies forgoing sovereignty over national policy. The major objective of co-ordination is to strengthen the medium term prospects for non-inflationary economic growth. To this end, what is essential is overall consistency in *medium term* strategies. This would still leave some scope for individual nations to pursue independent national objectives and policies in the short term, which would reflect differences in emphasis and priorities among countries. In other words, there need not be any presumption that all countries must follow similar courses of action at all times.

APPENDIX**OPTIMALITY OF CO-ORDINATION**

As the proposition that international co-ordination can give better results than competitive action seemingly runs counter to the "invisible hand" doctrine, it is perhaps useful to briefly review its theoretical support. To start with, we note that many world markets are not perfectly competitive, in that some countries are not merely atomistic agents but do possess significant market power (in terms of their ability to influence world prices). This represents the breakdown of a fundamental assumption of the "invisible hand" model, and explains how the differences in conclusions can arise.

More formally, Hamada (1974) investigates the gains from co-ordinating national policies in a situation where the exchange rate is assumed to be fixed and each of two countries attempts to optimise two policy variables, the inflation rate and the external account balance, using a single instrument, domestic credit creation. He considers three kinds of behaviour:

- (1) each country decides on its own actions, taking the other's actions as given but not anticipating them;
- (2) each country decides on its own actions, but one (known as the "leader") can anticipate how the other will react to its actions; and
- (3) the two countries co-operate in devising a joint plan of actions.

Hamada finds that both (1) and (2) lead to solutions which are not Pareto optimal (that is, solutions which could feasibly be improved upon from the standpoint of at least one participant with no loss to the other), although the solution under (2) (known as the Stackelberg-Nash solution) leaves the leader country better off than the solution under (1) (known as the Cournot-Nash solution). In the Cournot-Nash case, both countries will tend to pursue a contractionary monetary policy, in an attempt to achieve external surpluses and increase foreign reserves. Hamada also finds that (3) yields a Pareto optimal solution.

Cooper (1985) extends this analysis to a flexible exchange rate model, where the targeted policy variables are the inflation rate and the rate of change in output and the policy instrument is the rate of monetary growth. He finds that in the first (Cournot-Nash) non-cooperative case, each country will opt for a contractionary monetary policy, in order to appreciate its currency and reduce its inflation rate. In so doing, both countries will become worse off (because of falls in output) than if they had cooperated. In the case of one country electing to be the Stackelberg leader, the leader will be better off than in the Cournot-Nash solution but still worse off than in the cooperative case.¹

¹ Cooper also shows that, under these particular assumptions, together with strong assumptions about symmetry in the effects of policy actions, an agreement to fix the exchange rate (as under the Bretton Woods system) would ensure that the cooperative solution is achieved. Note that the second target variable in Cooper's model is the rate of growth in output, whereas in Hamada's model it is the external account balance.

Both of the above models are *static* game theory models. Other analyses using static game theory, such as Oudiz and Sachs (1984) or Canzoneri and Gray (1985), also point to the optimality of co-ordinating national policies, although the finding that the Cournot-Nash equilibrium has a bias toward contraction is reversed in some cases.

Recent analyses of this issue have tended to incorporate intertemporal considerations and, therefore, to employ dynamic game theory - see, for example, Buiter and Marston (1985); Currie and Levine (1985); Ishii, McKibbin and Sachs (1985); Miller and Salmon (1985); and McKibbin, Roubini and Sachs (1987). In these dynamic analyses, the question of "time-consistency" generally becomes important. As a consequence, the case for co-ordination is generally weakened, especially in models where governments are assumed to lack credibility with their private sectors as regards their commitment to announced policies; for example Miller and Salmon (1985), Oudiz and Sachs (1985), Rogoff (1985), and Sachs and McKibbin (1985). In these models, the gains from co-ordination, as measured by comparing co-operative equilibria with Cournot-Nash equilibria, are typically very small.

It is interesting to note, however, that Sachs and McKibbin (1985) found that the gains to developing countries (which, in their model, do not participate in the co-ordination process) could be quite large. Moreover, Ishii, McKibbin and Sachs (1985) have reported that, when the gains are measured by comparing co-operative equilibria with "baseline" *projections* (that is, with outcomes assuming unchanged current policy), rather than with *competitive equilibria* (which involve some degree of optimisation), they appear quite substantial. Further, Levine and Currie (1987) found that, if governments possess sufficient credibility, international co-operation is likely to be beneficial.

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