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Interdependence, Insulation, and Coordination: Analytical Progress and Institutional Change

MARINA v.N. WHITMAN*

The occasion of this lecture marks, almost exactly, the silver anniversary of my entry into the wondrous world of economics. I entered graduate school (having somehow missed the preliminary step of undergraduate study in the field) in the late 1950's, started teaching international economics in the early 1960's, and began making forays into the Washington world of economic policy-making at the beginning of the 1970's. A decade later, having been afforded the rare opportunity to view my profession from three different perspectives—the academic, the governmental, and now the corporate as well—I shall try and take stock of some of the major developments, both analytical and institutional, that have shaped—and shaken—international economics over the past decade or two, and consider what they suggest about where we go from here.

The most significant conceptual advance in this area has been the "opening up" of the analytical models by which we order our view of macroeconomic relationships. Both the Keynesian income-expenditure approach that dominated economic thinking over most of the post-war period, and the monetarist "counter-revolution" that challenged it were rooted in closed-economy assumptions. "Foreign repercussions" were introduced into such models as secondary complications and the foreign sector was treated simply as a source of leakage that can reduce but—in a stable system—never reverse the impact of policy measures or other exogenous disturbances at the national level. As "balance of payments analysis" or "exchange rate analysis" have gradually been transformed into the study of the macroeconomics of open economies, however, analytical work in international economics has moved away from closed-economy models to models predicated on the assumption of a highly integrated world economy.

On the institutional side, we have observed over the past decade or two the emergence and development of responses to intensified economic interdependence among nations. Initially, as burgeoning worldwide trade and investment made a major contribution to the rapid growth of output, income, and living standards in many parts of the world, the emphasis was almost entirely on the benefits of such interdependence. More recently, however, as a sense of limits and scarcity has emerged, and as nations have confronted the seemingly intractable problems of slowed productivity growth, high unemployment levels and chronic inflationary pressures, emphasis has increasingly been placed on the darker aspect of interdependence: the enhanced vulnerability to economic shocks originating outside one's own borders and the attenuated effectiveness of domestic economic policies in achieving national economic goals. The

*Vice President and Chief Economist, General Motors Corporation

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response of governments has been to try both to attenuate the impact of interdependence, as by the introduction of flexible exchange rates, and to organize it, as by periodic efforts at systematic coordination of economic policies among the leading industrialized nations. It is on these analytical advances and institutional changes, and on what they jointly imply for the interaction between market forces and government policies, that my discussion will be focussed.

Global Macroeconomics: Opening The Model Of The Closed Economy

The standard discussion of macroeconomic interactions among nations that dominated textbooks and classrooms until the mid-1970's was essentially the conventional Keynesian income-expenditure model, to which a "foreign sector" had been added in the form of an exogenous term for exports and an income-dependent one for imports. The addition of such terms made it possible to analyze the transmission of exogenous developments in one country to income-expenditure levels in another country via the trade-flow channel, as well as to take account of the feedback effects of these "foreign repercussions" on the income changes in the country in which the disturbance had originated. But the stability conditions required to prevent these essentially closed-economy models from exploding assured that, while foreign repercussions might attenuate the initial domestic impact of a particular exogenous development, they could never reverse it. Such models could also be used to analyze the balance-of-payments effects of policy or other exogenous changes at home or abroad, with the same results as regards the impact of foreign repercussions.

Not only was the framework for analysis focussed exclusively on only one of the multiple channels by which economic disturbances are conveyed from one country to another—that of changes in net trade flows—it was also a model applicable to a world of fixed exchange rates. In order to analyze the macroeconomic effects of a change in exchange rates, a relative price model, the so-called elasticities approach, was utilized. Although various attempts were made to synthesize the income-expenditure (or absorption) and elasticities frameworks, the fact that they were based on quite different underlying assumptions that could not be easily reconciled made these attempted marriages awkward and temporary affairs.

By the first half of the 1970's, the real-world shift from the pegged exchange rates of the Bretton Woods regime to a world of managed floating highlighted the inadequacy of existing models and of cut-and-paste efforts at synthesizing them. At about the same time, a radically different approach to the analysis of macroeconomic interactions (variously termed exchange-rate analysis or balance-of-payments analysis, depending on the nature of the exchange-rate regime assumed) was emerging in the scholarly literature, one which I described and informally christened in a 1975 paper entitled "Global Monetarism And The Monetary Approach To The Balance of Payments."[1] In essence, this "global monetarist" view, which is closely associated with what has come to be widely, if not entirely accurately, termed the Chicago School, represented a sharp break with the heretofore conventional analysis in at least three aspects.

First, rather than being defined in Keynesian medium-run flow terms, equilibrium was characterized by the requirements of the long-run stationary state, in which not only are there no excess demands or supplies in the system but in which all stocks of assets are constant.

Second, this approach involved a shift in focus from goods markets to asset markets (more precisely, the market for one particular asset, money) or, to put it in only slightly

oversimplied terms, from the balance of trade to the balance of payments. Rather than concentrating on the trade or current account, the major focus of Keynesian balance of payments analysis, it stressed developments "below the line," in the financial account. An obvious corollary was the shift in emphasis from real variables, including the real terms of trade or relative prices of national outputs, to concern with financial or monetary variables.

Finally, faithful to its Chicago origins, this view stressed the long-run neutrality of money, the continuous maintenance of the so-called purchasing power parity (PPP) relationship between price levels in different countries, and the endogeneity of national money supplies under fixed exchange rates. Under such a regime, that is, a nation's money supply is not under its own control; only under flexible rates does the money supply regain the status of an exogenous or policy-determined variable.

A number of startling implications for policy emerged from this new-old approach to international macroeconomic analysis: new in its challenge to the postwar orthodoxy, old in its origins in the price-specie-flow mechanism propounded by David Hume in the mid-18th century. Put in their boldest form, these propositions included the following: a change in the exchange rate will not systematically alter the relative prices of foreign and domestic goods and it will have only a transitory effect on the balance of payments. Any exercise of monetary policy to change the domestic component of the monetary base will, under fixed exchange rates, be offset by an equal and opposite change in the foreign component of that base. Thus, exchange rate policy cannot permanently alter the balance of payments and monetary policy cannot lastingly affect the domestic economy. But a change in the exchange rate will have a direct impact on the domestic price level, and monetary policy will have a direct effect on the country's external position, whether manifested by a change in reserves (under fixed rates), by a change in its exchange rate (under flexible rates), or by some combination of the two (under a regime of managed flexibility).

This global monetarist approach yielded a number of important and penetrating new insights. At the same time, the effect of its extreme and simplified assumptions was to assume away many of the problems that are of major interest and concern in the real world. Thus, it is not surprising that the latter half of the 1970's and on into the 1980's became a period of integration and synthesis, as a framework in which money was the only asset was expanded to incorporate a variety of imperfectably substitutable financial assets, including money. These integrative models, of which there are many variants, invariably note that it is asset markets that determine equilibrium exchange rates in the short run. However, because rates at these short-run equilibrium values may be associated with either a surplus or a deficit on current account, the resulting changes restore the Keynesian role of goods markets in the determination of long-run equilibrium rates.

Indeed, a significant evolution in the definition of equilibrium, in the direction of complexity and comprehensiveness, is one of several major advances in the analytics of the macroeconomics of open economies that has occurred over the course of a decade or more. Current discussions of equilibrium conditions distinguish carefully between flow and stock equilibria and take account of stock-flow interactions. They also distinguish the determinants and characteristics of short-run and long-run equilibrium and spell out, in some detail, the transition paths by which a system moves from one to the other.

The short-run equilibrium values of interest rates and exchange rates are, in this view, jointly determined in asset markets, given the supplies of various assets and expectations

regarding future values of exchange rates (about which I will have more to say later). These interest rates and exchange rates, in turn, influence commodity and factor markets because they affect income, expenditure, employment, and prices. And, because short-term equilibrium values of the exchange rate, given values of these other variables, may yield a non-zero current-account balance, asset flows will occur which in turn affect the long-run equilibrium value of the exchange rate—the one obtaining in a stationary state when the current account balance goes to zero and all stocks of assets are constant. Indeed, all these variables and interactions will jointly determine whether such a stable long-run equilibrium does in fact exist.

Second, the new models incorporate as explanatory factors both monetary variables and real variables, the latter related to the level and composition of demand, that is, in Keynesian terms, to income and the current account balance. The first category consists of relative rates of inflation or growth rates of the money supply, which cause changes in exchange rates consistent with the requirements of purchasing power parity, the second of variables that determine changes in *real* exchange rates, that is, changes in nominal rates other than those which simply offset differences in national inflation rates.

Among the variables in the latter category are differentials among countries in real interest rates and developments in a country's current account, that is, changes in structural factors. Again, the current account affects exchange rates through two distinct channels. One is the effects of the associated redistribution of wealth. Abstracting from capital formation and surpluses or deficits in the government's budget, a country with a surplus on current account must be gaining wealth, while one with a deficit must be losing it. Such changes will generally affect the nature of asset-market equilibrium by interacting with preferences for assets denominated in different currencies relative to supplies of those assets. The other channel is created by the role of an imbalance on current account in signaling the need for an exchange-rate adjustment, on the assumption that a surplus or deficit cannot cumulate indefinitely without threatening the stability of the system.

It is worth noting that, in their stress on the determination of real and not simply of nominal exchange rates, (that is, their emphasis on the durability and importance of deviations from purchasing-power-parity), these eclectic models restore to center stage some of the real-world concerns that had temporarily disappeared from the analytical scene, while bringing monetarist insights to bear on old-fashioned Keynesian problems. In some such models, PPP will prevail, even in the long run, only under certain restrictive assumptions, among which the long-run neutrality of money is a necessary but not a sufficient condition. Indeed, in determining the competitive conditions which underlie international patterns of production, trade and investment and changes in those patterns, it is precisely changes in real exchange rates, that is, the *deviations* from purchasing-power-parity, that are critical.

Third, the new learning has taught us the importance, in any explanation, not only of the present values of explanatory variables but of their expected future values as well. The modelling of expectations has also progressed significantly, from assuming static or regressive expectations to the concepts of adaptive and, most recently, rational expectations. (I.e., that market prices incorporate all existing information about the systematic components of disturbances.) Despite all this progress, my own view is that there is a lot more hard work to be done in this area. The assumption of rational expectations, for example, precludes a role for "bandwagon effects" in the determination of exchange

rates. Yet such effects do seem to prevail in exchange markets, in the view of many observers, as reflected, for example, in the recent statement of a distinguished group of academics, international bankers, and government officials that ". . . exchange rate expectations seem to be loosely held, . . . and subject to bandwagon effects."[2] Back in 1975, I argued that such behavior was characteristic of a learning period, before market participants had acquired sufficient experience with floating rates.[3] Today, nearly a decade after the shift to managed floating, this "learning" argument has lost a good deal of its original credibility.

Along with recognizing the central role of expectations, we have become acutely aware of the important role played by unexpected developments, that is, "innovations" or "news," in determining changes in exchange rates and in the prices of domestic financial assets. A corollary of this awareness is the importance of distinguishing between anticipated and unanticipated events, including policy actions, in predicting their effects. In addition, this approach explains sudden jumps in exchange rates, and overshooting of long-run equilibrium values, as being inherent in the system rather than as indications of inefficient or aberrant market behavior. Finally, the question of the long-term stability of the exchange-rate system is raised in a new form: almost all of the models incorporating rational expectations are characterized by the precarious, knife-edged stability of saddle-point solutions.

One of the implications of these theoretical advances for the empirical testing of hypotheses is that the appropriate variables for explaining changes in exchange rates may not be realized magnitudes—either the levels of explanatory variables or their rates of change—but rather the residuals, the forecast errors, the measures of how badly the model-builder missed! As one whose responsibilities encompass a good deal of forecasting, I find this is a rather difficult result to deal with. The concept of "innovations" is, furthermore, a particularly slippery one, yielding results that may well be extremely sensitive to the econometric techniques used to distinguish between anticipated and unanticipated changes in variables. That is, what my computer tells me *ex post* was anticipated may not be identical with what the rational expectations model implies should have been anticipated *ex ante*.

The implications of the analytical advances outlined here for government policies, and for those who design and try to implement them, are even more unsettling. One of the implications of the Keynesian macroeconomic model was that, while under fixed exchange rates changes in foreign income and expenditure would affect aggregate domestic income by altering the level of exports and thus the trade balance, freely flexible rates would insulate the domestic economy from foreign shifts in demand and ensure that such disturbances would be bottled up where they originated, rather than spreading from one country to another via the Keynesian transmission belt. But the newer integrative models confirm what most practitioners have painfully learned: that flexible exchange rates do not provide full insulation from foreign disturbances, even of a purely monetary character, in a world characterized by high capital mobility. And if full insulation is a chimera, so too is full autonomy of domestic economic policies. Interdependence persists in a world of flexible exchange rates, most dramatically for relatively small open economies, but to a lesser degree for large and relatively self-sufficient ones as well.

The constraints of interdependence are most dramatically highlighted in the case of interest-rate policy, where use of this instrument for domestic purposes has significant effects on the exchange rate and thus on the

current account positions and income and price levels of other countries. And these same exchange rate changes feed back as well onto domestic price levels or inflation rates, imposing external constraints on monetary policy under managed floating, in the form of a steepened short-run Phillips curve (that is, a worsened short-run trade-off between inflation and unemployment). This is the issue often referred to in the literature as the problem of vicious and virtuous circles, of inflation-depreciation-inflation in some countries and deflation-appreciation-deflation in others. All this suggests that, although the nominal money stock is restored to the status of a policy variable under a regime of fully flexible exchange rates, the real money stock remains endogenous, in the long run, under either system, and the independence of monetary policy remains constrained.

Second, whether the relevant markets are efficient or not, governments may still be properly concerned with the allocative costs of exchange-rate volatility, particularly when that volatility takes the form, not simply of substantial short-term variability, but of the medium-term cycles which a number of important currencies appear to have exhibited in recent years. There appears to be a growing concern with the costs imposed on producers of goods and services by fluctuations in exchange rates determined in the first instance in asset markets, with the possibility of "... inherent instabilities in a world of equally mobile goods and financial capital," where "fluid financial capital may force exchange rates to oscillate markedly around trends determined by 'real trade fundamentals,' distorting and destabilizing real trade patterns."[4] Increased mobility of financial assets may in fact lead to restrictions on the mobility of goods: "It may be no coincidence that periods of pronounced financial mobility like the 1920's and the 1970's are followed by periods of growing protectionism."[5]

While the insights of the 1970's reveal the nature and origins of the allocative costs just described, they also suggest that effective means to reduce them may prove elusive. Exchange-market intervention is likely to be marginally useful at best. Some scholars argue that, used judiciously and in conjunction with appropriate domestic policies, it may aid adjustment via the expectational effects of "buying credibility," while others would deny it even that limited role. There are at least two reasons for skepticism. First, official intervention may well be overwhelmed by market forces, particularly in the case of medium-term exchange-rate cycles. Second, PPP is not necessarily an accurate guide to where the equilibrium rate lies (that is, changes in equilibrium real rates do occur), and the models described here suggest no obvious alternative criterion.

Although the issue of whether intervention has a role to play in reducing exchange-rate volatility and overshooting remains unresolved, theoretical insights regarding exchange-rate determination provide additional support for the importance of predictability of economic policy in minimizing rate fluctuations and the social costs associated with them. Increased predictability has the effect of reducing the size and frequency of innovations which produce sudden jumps in exchange rates, sharp deviations from PPP to which the real economy is forced to adjust. Beyond that, the critical role played by changes in interest-rate differentials suggests a role for international coordination of monetary policies to minimize exchange-rate fluctuations, a concept regarding which agreement in principle seems to be as easy as implementation is difficult.

Economic Policy Coordination: A Sorting Out

Indeed, it is one of the ironic twists that so often confront theoreticians who see the offspring of their analytical constructs take on flesh and blood, that the era of flexible exchange rates has also become the era of an intensified quest for economic policy coordination. We have already noted that, contrary to the expectations of at least some of its original supporters, greater flexibility of exchange rates has not insulated nations fully from economic disturbances originating abroad nor eliminated the international effects that constrain or attenuate the effectiveness of national economic policies in achieving domestic goals.

Whether economic interdependence has in fact increased or decreased since the end of the Bretton Woods era is an unsettled issue (indeed, it is not even clear what unit of measure one would use in determining the answer), but clearly the nature of the most important interactions has changed significantly, in ways that appear to have increased rather than diminished policymakers' sensitivity to their effects. For example, under fixed exchange rates the immediate impact of monetary interdependence was on foreign exchange reserves and, in the absence of effective sterilization, the aggregate money stock. Under flexible rates, in contrast, the greatest proximate effects are on the real exchange rate and thus on domestic income, employment, and the trade balance via changes in the competitive conditions confronting the tradeable goods industries. The result of this shift, combined with the increased frequency and severity of shocks to the system, has been a heightened sense of increased urgency about the need for coordinated efforts to prevent, or at least attenuate, the international transmission and magnification of economic disturbances.

While the concept of international economic coordination is an old one, theoretical developments have combined with changes in real-world institutions and practices over the past decade to increase both the analytical complexity and the practical relevance of the idea. In discussing such coordination, it is useful to distinguish among three different areas of economic policy and consider the concept of coordination as applied to each of them.[6]

As regards the first two types—policies aimed at a common goal and competitive or zero-sum policies—the concept of coordination is old and analytically straightforward, however great the complexities of actual implementation. The aim of coordination of policies directed at a common goal is, of course, to prevent countries from working at cross purposes and thus to strengthen the collective effectiveness of national policies in achieving the aggregate goal. The formation of the International Energy Agency, aimed at reducing instability in the price and the effective supply of petroleum, is only one of a large number of examples at efforts of this type of coordination. The role of the GATT vis-a-vis commercial policies and of the International Monetary Fund vis-a-vis exchange-rate policies are two of the most prominent examples of coordination of competitive policies, in the sense of establishing rules of the game and surveillance and/or dispute-settlement mechanisms to discourage the use of explicit beggar-thy-neighbor policies to alleviate domestic economic problems and to minimize the negative effects of such policies on aggregate economic welfare when they are used.

It is in the third area, of macroeconomic or aggregate demand policies whose primary impact is domestic, that the concept of international coordination has become both more important and more complex. The whole idea is a relatively new one; the idea of macroeconomic coordination, in the sense of the management of international interactions among national stabilization policies and aggregate levels of economic activity, would have been an alien one in pre-Keynesian days when such matters were left primarily to the workings of

the marketplace at the national as well as the international level. And, although there were some efforts to establish such coordination in the early postwar years,[7] it was not until the mid-1970's that the concept, propelled onto center stage by the termination of the Bretton Woods system and the intensified international transmission of inflation and recession that followed the first oil shock, was institutionalized at the highest level by the introduction of annual economic summit meetings among the leaders of the largest non-communist industrialized nations.

Two developments can be identified as proximate causes of the suddenly intensified focus on coordination of aggregate demand policies among the major industrialized nations. First, the magnitude of international trade and investment flows had, of course, been growing, not simply absolutely but relative to GNP, throughout the postwar period. Indeed, this growth was a major factor underlying the rapid increase in worldwide production and living standards. But it was not until the various global economic shocks of the 1970's that attention was heavily focussed on the dark side of interdependence, in the form of increased vulnerability to disturbances originating abroad and intensified leakages which attenuated the effectiveness of macroeconomic policies in achieving domestic economic goals.

The second major development was the shift from the system of pegged exchange rates that grew out of the Bretton Woods Agreement to a world of more or less managed floating. In the process, some relatively clear-cut undertakings with regard to the management of exchange-rate policies were replaced by much vaguer criteria for IMF surveillance of managed floats, in the form of strictures against "manipulating exchange rates or the international monetary system in order to prevent effective balance of payments adjustment or to gain an unfair competitive advantage over other members."[8]

Yet the change in the exchange-rate regime forged an unbreakable link between competitive exchange-rate policies and macroeconomic policies whose primary impact is domestic, but whose impact on the economies of other nations cannot be ignored. It soon became clear, therefore, to an IMF attempting to define its surveillance role, that it was not enough to prescribe guidelines for exchange-market intervention or other policies aimed directly at exchange rates. Attention had to be paid, as well, to the exchange-rate impact of a broader range of policies, including macroeconomic policies, which would have affected the balance of payments and the stock of international reserves under pegged rates, but which now affected exchange rates and thus competitive relationships and net trade and current account positions.

The new focus on coordination of macroeconomic policies has not dispelled a great deal of confusion over just what is to be coordinated, and why, not to mention how. Among the questions that remain unanswered are whether the major emphasis should be on coordination of policy targets or of the policy instruments used to reach those targets and, if the answer is the latter, which particular policy instruments? Nor is it clear whether the goal of such coordination is to reduce payments imbalances and/or exchange-rate fluctuations, to avoid expansionary or contractionary "overkill" in the conduct of domestic macroeconomic policy and thus excessive or inadequate levels of global aggregate demand, to improve the institutional framework of international economic relationships and increase the attention paid to the interests of peripheral countries, or some combination of all of the above. And, finally, what degree of "coordination" is involved—simply an exchange of information to enhance the effectiveness of domestic policies by taking account of the policy intentions of other countries in setting them or an actual modification

of projected policies in response to international commitments or concerns?

Despite all the unresolved fuzziness, it is clear that the major focus of efforts at international coordination is increasingly domestic monetary policy. The integrative theory of exchange-rate determination discussed earlier makes it clear why this is so: in a world of flexible exchange rates and high international mobility of capital, it is in the markets for financial assets that short-run values of exchange rates are determined, and these values feed back into domestic production and employment levels through their impact on the current account. Because of the operation of this mechanism, domestic monetary policies, and the interest-rate differentials they produce, become a major vehicle for affecting income and employment levels abroad as well as at home, if not in the long run, at least in the policy-relevant short-to-medium run.

A variety of institutional and procedural difficulties stand in the way of international monetary coordination, including the varying degrees of independence of central banks from the executive branch in major industrialized countries and wide differences among these countries in the "targets, tools and tactics" of monetary policy.[9] Logically prior to these difficulties of implementation, however, are some more fundamental conceptual issues. These began to emerge when, against a background of increasing dissatisfaction with the pace of global recovery from the first oil shock and of growing concern about the development of "vicious circles" of depreciation and inflation in countries with initially high rates of price increase and weak external positions, the generalized call for increased coordination of macroeconomic policies took on a more specific form. This was the "locomotive argument" that achieved prominence at the London and Bonn Summits of 1976 and 1977, the crux of which was that a satisfactory pace of global recovery could be achieved and the destabilizing effects of "vicious" and "virtuous" circles avoided only if those major industrialized countries with relatively low inflation rates and strong external positions took the lead in undertaking domestic macroeconomic stimulus. By adopting such expansionary policies, the argument went, the "strong" countries would not only support export-led expansion in the weaker countries but would also loosen the domestic policy constraints imposed on the latter by fears about the impact on their payments positions and exchange and inflation rates of adopting a policy stance more stimulative than those of their stronger partners.[10]

One of the fundamental points of controversy that underlay the sometimes heated debates about this particular form of macroeconomic coordination has to do with the nature and existence of the Phillips curve. If different countries have strongly divergent views regarding what is the most desirable, or least undesirable, combination of inflation and unemployment—the optimum point on the Phillips curve—how can these be reconciled? One can argue, of course, that no real conflict exists, and that there can be only one definition of the optimal macroeconomic policy, whether the point of view taken is national or global. That policy is to achieve the degree of economic stimulus that will maximize the real growth of the domestic economy over some reasonable time frame, taking full account of what the policy stances of one's partner nations are likely to be.

Aside from the possibility of controversies arising from divergences in forecasting, this "harmony of interests" view is itself based on a highly controversial assumption: an implicit denial that there exists, except perhaps in the very short run, a Phillips curve tradeoff that enables a country to achieve higher rates of output and employment at the cost of creating a higher rate of inflation. This alternative view, that excessive stimulus leading to higher inflation will over the longer term make the achievement of satisfactory levels of economic

activity more difficult rather than less, has gained increasing currency in the era of stagflation. Widely divergent and strongly held views on this issue must inevitably complicate efforts to agree on common criteria for the conduct of national aggregate demand policies.

One possible resolution of these difficulties has been offered in the form of an argument that the *mix* of macroeconomic policies utilized to achieve any given level of domestic aggregate demand in the major countries can be adapted to achieve the desired level of global aggregate demand.[11] The argument is based on the observation that, in a world of flexible exchange rates and high international mobility of capital, fiscal-based expansion in one country will be transmitted to other countries as well. The mechanism is an increase in the interest rates of the originating country, leading to an inflow of capital, appreciation of the exchange rate and a reduction in the country's trade surplus (or increase in its deficit). The reflection of these developments in the country's trading partners is an outflow of capital, exchange-rate depreciation, and a consequent reduction of the trade deficit (or increase in the surplus), and thus an expansion of demand and income.

Economic stimulus based on monetary policy would, in contrast, cause an outflow of capital and a depreciation of the currency in the originating country, shifting demand away from the goods of partner countries and thus producing a contractionary effect on demand and income levels in their economies. Thus, this line of reasoning seems to suggest, strong "locomotive" economies might both hold down domestic inflationary pressures (by reducing domestic prices of imported goods) and stimulate the incomes of weaker partner countries by inducing exchange appreciation via a shift in the policy mix utilized to manage aggregate demand.

Closer examination suggests, however, that there may be less to this argument than meets the eye. For one thing, there are likely to be severe constraints on any nation's ability to vary its monetary-fiscal mix. At present, for example, the policy mix being pursued by the United States and the resultant high levels real interest rates and overvaluation of the dollar have subjected this country to severe criticism from abroad and imposed significant competitive handicaps on U.S. producers. The political and institutional constraints that appear to stand in the way of a shift in this policy mix are too well known to require repeating, or even summarizing, here. Nor is the situation unique to this country. To draw on another current example, both countries appear to agree that a more appropriate yen-dollar relationship would result if a United States shift toward a tighter fiscal-looser monetary mix were matched by a Japanese shift in the opposite direction. But domestic and foreign observers appear to agree that Japan's leeway to move in the desired direction is severely constrained by political commitments on budget-balancing made by the Prime Minister.

Political and institutional constraints aside, consideration of the "locomotive" episode of the mid-1970's raises a number of conceptual and empirical questions. First, there was a somewhat surprising absence of any clear-cut relationship between the degree of policy stimulus exerted in each of the three locomotive countries—Germany, Japan, and the United States—and the strength of domestic economic recovery. Second, as the policy mixes pursued by the three countries diverged, the associated movements in exchange rates were quite different from those implied by the simple analytics of flexible exchange rates. Third, there is the question of the duration of upward pressure on the exchange rate arising from a policy-induced increase in the interest rate. Because this last effect is likely to be relatively short-lived, a change in the policy mix can be expected to reduce the inflationary pressure associated with any given level of aggregate demand only to the extent that the inflation-reducing impact of an appreciating exchange rate persists for some time after the rate has in fact ceased to appreciate. The existence of such an "echo effect" turns out to depend crucially on the way in which expectations about the future path of prices are formed. Only to the extent that such expectations are "sticky" can the period during which a shift in the policy mix is likely to be effective be prolonged.

Finally, the policy-mix approach offers no automatic resolution of a second major issue that may make macroeconomic coordination at once more urgent and more difficult. That is, the controversy—explicit or implicit—that frequently arises over the sectoral composition of demand growth. If, as sometimes appears to be the case, a large number of countries regard export-led growth as more desirable than an equivalent dose of stimulus originating with domestic demand, a genuine conflict of interest emerges. For no set of policies can enable every country to run a surplus on trade or current account simultaneously. Under such circumstances, we are back in a world of competitive policies and zero-sum games, where no full reconciliation of interests is possible and negotiation and compromise become the order of the day.

Even with a less extreme characterization of the potential conflict, it is clear that countries are far from indifferent to the impact of exchange-rate movements on patterns of trade and production, particularly in the manufacturing sector. For the United States, for example, the problem has appeared in two variants in recent years. One is the upward pressure on our real exchange rate, and the resulting pressure on the competitiveness of our manufacturing industries, exerted by the growing importance of our exports of agricultural products and industrial raw materials and our relative independence of imported petroleum as compared with such major competitors as Germany and Japan. The second is the similar upward pressure on real exchange rates and squeeze on the competitiveness of domestic producers created by large capital inflows, whether caused by high real interest rates relative to those of our major trading partners or to the attractiveness of a politically secure environment.[12]

Given such concerns, countries are likely to be particularly sensitive to the possibility of others' "free riding" in the adjustment process, that is, of achieving domestic goals for aggregate demand by means of an exchange-rate and current-account configuration that is likely to aggravate adjustment problems elsewhere in the world. The IMF's guidelines for surveillance of exchange-rate policies are one step in the direction of minimizing such conflicts. Efforts at explicit coordination of macroeconomic policies via the semiformalized consultations and negotiations of economic summitry, however embryonic and imperfect they appear at present and however great the complexities they confront, represent a second step along the same road.

And so I have the sense of having come full circle, back to some of the problems that originally inspired, first the move to greater flexibility of exchange rates and later the intensified efforts at international coordination of economic policies. We are back, in fact, to the issues that occupied center stage during my days at the Council of Economic Advisers in the early 1970's: the search for symmetry of adjustment burdens, concerns about "benign neglect" on the part of the United States and about the "nth country problem" in a world where there can be only (n-1) independent payments balance positions or exchange rates. As is painfully clear in the realm of domestic policy, so too at the international level, analytical advances and institutional changes have together raised new questions (or old ones in

new forms) at least as fast as they have provided answers to old ones.

But, along with persistent problems, challenges and paradoxes, there is persistent hope. That is the hope that more comprehensive and more sophisticated analytical insights into the interactions between market forces and government policies, together with institutional changes providing both partial insulation and enhanced coordination of domestic policies, can tame the threatening aspects of economic interdependence and thus help to preserve the benefits of economic intercourse across national boundaries.

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7. See, in particular, Ragnar Nurkse (League of Nations), *International Currency Experience,* Princeton, N.J., 1944, p. 229.
8. IMF *Survey,* May 2, 1977, p. 131.
9. Anthony M. Solomon, "International Coordination Of Economic Policies," The David Horowitz Lectures of 1982 at Tel Aviv University, March 4, 1982, mimeo.
10. Marina v.N. Whitman, "The Locomotive Approach To Sustaining World Recovery: Has It Run Out Of Steam," in William Fellner (project director), *Contemporary Economic Problems 1978,* Washington, D.C., 1978, pp. 245–283.
11. Rudiger Dombusch and Paul Krugman, "Flexible Exchange Rates In The Short Run," *Brookings Papers on Economic Activity,* 1976, No. 3, pp. 568–573.
12. The first variant of the problem has been dubbed the "Dutch Disease," the second, its "Swiss cousin" in Gene M. Grossman and J. David Richardson, "Issues and Options for U.S. Trade Policy In the 1980's: Some Research Perspectives," NBER Research Progress Report, Cambridge, Mass., 1982, p. 16.