

WHAT THE U.S. CURRENT-ACCOUNT DEFICIT OF THE 1980s HAS MEANT FOR OTHER OECD COUNTRIES

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INTRODUCTION

The emergence of an external current-account deficit of the United States of the order of \$150 billion is one of the most striking economic developments of the 1980s. When scaled by the size of the U.S. economy, the deficit is not uncommonly large. But given the weight of the United States in OECD output – 40 per cent – it is no wonder that a wide range of developments have been ascribed to it. It has been seen as the transmitter of U.S. growth to the rest of the world. And it has been seen as the mechanism through which the savings of the rest of the world have been sucked into the United States. Now, the challenge of reducing it to levels which financial markets can be expected to sustain, without unhinging the world economy, is a preoccupation of policymakers in the United States and in its partner countries. This challenge took on greater urgency over the course of 1987 as international financial markets and closely-linked national markets seemed to exhibit increasingly erratic behaviour. The large current-account deficit of the United States, together with the large surpluses of Japan and Germany, are widely recognised as a source of uncertainty contributing to financial instability.

Addressing questions of how these imbalances can and ought to be unwound, especially against a background of persistently disappointing economic growth in the OECD area (although not in the United States), requires one to take a view, *inter alia*, on how the emergence of the U.S. deficit shaped macroeconomic developments in the first half of the decade. Was it a principal cause of slow growth, and are growth prospects therefore likely to improve as a consequence of effective measures to reduce the U.S. deficit? Or did the deficit conceal deeper macroeconomic and structural constraints on growth, which must be dealt with if the economic potential of OECD countries is to be achieved? These are not easy questions for an economist to answer. Nonetheless, they cannot be ignored by those who seek to make economic analysis relevant and useful to policymakers. One must attempt to deal with them, while being clear about the difficulties involved and their implications for interpreting the conclusions. It is especially important to acknowledge two difficulties in answering the questions concerning the effects of the U.S. current-account deficit.

First, the questions do not take the form of testable hypotheses. They call for an analysis of a unique event – one that has not occurred before and is unlikely to occur again under the same circumstances in the same way. In this respect, they are

of a different nature from questions that involve clearly recognisable hypotheses – that the demand for money depends on the level of interest rates, for example, or that the imports of a country depend on a particular ratio of foreign prices to domestic prices. The issues are more like those examined by historians, calling for the counterfactual approach sometimes employed by that discipline. An historian who employs this approach attempts to build a convincing story of why things occurred as they did and not in some other way. The art in doing this involves developing a counterfactual view based on the identification of key events that could plausibly have turned out differently, and tracing the implications through a convincing theory of the forces at work and their interrelationships. The goal is not to test or prove the theory, although the reasonableness of the analysis may enhance its standing. Rather it is to convey the meaning of the theory in concrete terms and to draw lessons.

The second difficulty with the question is that the emergence of the U.S. current-account deficit, *per se*, is not acceptable as the key event on which to base the analysis. The current account of a country is the endogenous outcome of interactions within an international economic system. One must dig deeper to find other events which gave rise to the U.S. deficit. There are, in principle, an infinity of combinations of more basic events that, had they occurred differently, would have left the U.S. current account in rough balance.

Most people who make statements about the effects of the U.S. deficit are aware of this. They have an implicit view of what exogenous forces lie behind it. These may be readily observable (as in the course of government spending and taxes in the U.S. or other countries), or they may not be (as in a decline in the "export mindedness" of U.S. firms). The conclusions about the effects of the deficits depend on these views of driving forces – of what might have been different. It is important to be specific about these assumptions.

Some possibilities are more interesting than others, and focusing the analysis on one or a few of them is a matter of judgement or of taste. Plausibility must be the **standard** – one must be able to accept the possibility that something could reasonably have happened even though it did not, or might not have happened even though it did. This makes for an interesting analysis because it focuses on possibilities that could arise in a somewhat similar way in the future. Hence, it can provide **insights** to guide forecasts or policy decisions in the future. But there is no testable sense in which one set of causes can be called the true one and another set false.

The analysis in this paper is presented in this spirit – no claim is made that it offers a scientific answer to the question of what were the effects of the U.S. current-account deficit. It presents a counterfactual history, based on a model of the international economy, which is driven by plausible assumptions about how key variables might have been different in ways that would have left the U.S. current account in rough balance.

Part I of this paper describes the elements that went into developing a counterfactual macroeconomic history of the **1980s**. In Part II, the resulting story of what might have been is presented, both in its own terms and as it compares with what actually occurred. Part III provides a discussion of the points of tension in the counterfactual history and considers what alternative outcomes might also have plausibly occurred. Finally, in Part IV some lessons are suggested concerning likely policy challenges in unwinding the U.S. deficit and the costs and benefits of allowing such events to occur. This discussion draws on some observations concerning the evolution of trade and production patterns that accompanied the emerging U.S. deficit.

I. HOW A LARGE U.S. CURRENT-ACCOUNT DEFICIT MIGHT NOT HAVE ARISEN

There are three principal elements of the construction of the counterfactual history, which together determine its shape. One is the analytical framework of inter-relationships among economic magnitudes. This is the machinery through which the implications of alternative key developments are traced to arrive at a view as to how the international economy and national economies might have looked different – the model of economic interactions. The second is the set of key developments themselves that are taken to have given rise to the deficit. These are sought in macroeconomic policies and behaviour in the United States, and in the swings of dollar exchange rates in the first half of the decade. The third is the set of policies that are assumed to have been pursued outside the United States under altered conditions.

The analytical framework – INTERLINK

The model used for this exercise is INTERLINK, a global model developed over a number of years by the Secretariat of the OECD. A review of its structure and simulation characteristics is contained in this issue of the journal (Richardson, **1988**), with references there providing additional details. The Summer **1987** version of the model was used for this paper. A few specific observations concerning the structure and historical tracking properties of INTERLINK are important for interpreting the results presented in this paper.

The system comprises national macroeconomic models for each OECD country, linked by trade and investment income flows among them. It also provides for determination of world prices for primary commodity groups and of trade with the rest of the world. A particularly important feature of INTERLINK for the present

exercise is the care with which identities within countries and internationally have been dealt with. These identities include relationships between investment flows and the evolution of stocks of capital, and between international current-account imbalances and net investment positions of countries. Such relationships become important when considering developments over a period of five years, as is done in this paper.

The model also incorporates relationships for the determination of exchange rates. These, however, do not give a robust explanation of exchange rate determination – a deficiency that INTERLINK shares with its competitors. These relationships were suppressed for the purposes of conducting the analysis presented in this paper. Exchange rate developments are one part of the history of the 1980s that are taken as different by assumption in constructing the counterfactual history.

INTERLINK, if run hands off, has a mixed record in tracking history, but it seems to capture the broad interactions at work reasonably well. Of particular interest from the standpoint of the present exercise is how well it tracks the development of the U.S. current-account deficit, given domestic conditions in the United States and its partner countries. This question has been explored by Richardson (1987a). He found that while there are sizeable, persistent errors in components of export and import prices and volumes, these have tended to offset one another so that the predictions for the overall nominal U.S. current account have been generally good, with essentially zero average errors over the period 1980- 1985. The largest single year error is \$19 billion in 1984.

One development of that period which INTERLINK seems to have missed is the extent to which exporters in other countries kept up their dollar prices despite depreciations of their currencies, while expanding the volume of their shipments of non-manufactures to the United States. As a result, INTERLINK tends to underpredict U.S. import prices and overpredict import volume by as much as 10 to 15 per cent during this period. The possibility ought not be excluded that this is at least partly due to an imperfect separation of import value changes into volume and price changes in the published data. But more recent experience of relatively small increases in U.S. import prices in the face of a declining dollar suggests that U.S. import prices may indeed be significantly less sensitive to exchange rate changes than assumed in INTERLINK. The errors on export price and volumes were smaller, but an underprediction of export volumes reinforces the overprediction of import volumes in producing a predicted deterioration of U.S. real net exports even larger than the one that occurred – amounting to about $\frac{1}{4}$ per cent per year of U.S. GNP growth. While this is too large to be dismissed as trivial, it does not invalidate the use of INTERLINK to examine this period. The directions and rough magnitudes of the adjustments in the model coincide with those that occurred. And it should be noted that these are based on trade equations that have not been re-estimated over the period under study.

Other models would tell stories that differed in detail from the one told by INTERLINK. Indeed, there are some differences when alternative vintages of the INTERLINK model are used. But comparisons with other linked models indicate that the version of INTERLINK used for this study is in the mainstream (Bryant and Holtham, 1987). So long as the focus is on qualitative features of the simulation and broad magnitudes, rather than on precise figures, the story can be taken as representative of what these models have to say.

A fundamentally different theoretical framework would, of course, produce a substantially different story. An example is provided in Taylor (1987). Taylor follows a similar methodological approach as the one adopted in the paper, but in the context of a model in which wages, prices, interest rates and exchange rates are set on the basis of perfect foresight concerning future policies and their macroeconomic effects. By contrast, expectations in INTERLINK are governed by past experience, and adapt gradually to policy changes as their effects on the economy are perceived. Moreover, the counterfactual behaviour of exchange rates is imposed exogenously in this study. The two approaches would seem to define the limits of realistic assumptions concerning how policies affect exchange rates. When the course of policy is changed decisively, it seems plausible that expectations would be modified from those formed solely on the basis of past experience. However, it seems implausible that policy changes are immediately invested with full credibility or that economic agents are so confident of their ability to predict their consequences that they would ignore the information in past trends. Indeed, the experience with the major monetary and fiscal policy shifts of the 1980s suggest that expectations have considerable inertia.

The judgements made about what underlying forces might have been different, leading to the result of a roughly balanced U.S. current account, are equally critical to the particular story that is presented in this paper. These judgements are described and motivated in the next section.

Counterfactual macroeconomic developments in the United States and dollar exchange rates

The nature of the questions under examination points towards a focus on events within the U.S. economy or those, such as the appreciation of the dollar, which were closely linked to it. One could identify other forces as the starting point – policies and exogenous developments outside the United States, for example – but one would then be confusing causes and effects. Even focusing on forces emanating from the U.S. economy and from the behaviour of dollar exchange rates, one can imagine a number of ways in which things could have evolved differently, so that a large current-account deficit might not have emerged. Of course, the outcome would still depend on interactions with the rest of the world and not on the United

States alone. The approach taken in this paper is to identify four areas where developments in the **1980s** diverged from the **1970s**, and which have been linked in policy discussions to the emergence of the U.S. current-account deficit. These are:

- i) **The U.S. household saving rate** declined from over 7 per cent in the late **1970s** to 4 per cent in **1986**. In the counterfactual alternative, consumer behaviour has been altered by introducing a trend add factor to the historical residuals in the consumption equation so that the household saving rate remains near the earlier level.
- ii) **U.S. government expenditure** rose as a share of GNP from less than **30** per cent in the late **1970s** to over **35** per cent in **1986**. In the counterfactual alternative, real non-wage government spending was lowered so that, if the same GNP had been achieved, the non-wage government spending share of it would not have increased. The endogenous response of other government spending (government wages and transfer payments) to price changes and to cyclical developments was allowed to operate, however, as was the price at which the government purchased goods and services.
- iii) **U.S. direct tax receipts** fell as a share of household income from **14** per cent in **1981** to **13½** per cent in **1986**, a less dramatic development on the tax side than often thought. Although it has a relatively small effect on the simulation, this ratio was held at its **1981** level in the counterfactual simulation.
- iv) **The dollar** appreciated sharply against foreign currencies – by **50** per cent on an **OECD** weighted average calculation from **1980** to **1985**. In the alternative it is assumed that the dollar remained much more stable *vis-à-vis* other currencies over the decade to date. It seemed necessary to implement this assumption by making different assumptions about each currency to produce a realistic alternative pattern of cross rates:
 - The German mark/dollar rate was assumed to remain unchanged from its average **1980** level of **1.82** marks per dollar.
 - The currencies of the **EMS** partners of Germany were assumed to have followed paths on which their cross rates with the mark were those that occurred. Hence their levels against the dollar are much more stable in the alternative than in real history, but they decline against the dollar to the extent they decline against the mark.
 - The U.K. pound, which had a life of its own in the period under study, is assumed in the alternative to have followed an unchanged course against a simple average of the dollar and the **EMS** bloc.

Table 1. Counterfactual exchange rates

	1976	1979	1980	1981	1982	1983	1984	1985	1986
United States (Effective, foreign currency/dollar) (1980 = 100) (Actual)	103	100	100	100	104	108	110	113	114
Japan (Yen/dollar) (Actual)	209	219	226	200	191	185	179	179	168
Germany (Deutschemark/dollar) (Actual)	2.01	1.83	1.82	1.82	1.82	1.82	1.82	1.82	1.82
France (Franc/dollar) (Actual)	4.51	4.27	4.22	4.37	4.88	5.43	5.59	5.55	5.81
United Kingdom (Dollar/pound) (Actual)	1.92	2.12	2.33	2.26	2.04	1.82	1.71	1.68	1.61
Italy (Lire/dollar) (Actual)	847	833	855	909	1010	1087	1236	1190	1250
Canada (Canadian/U.S. dollar) (Actual)	1.14	1.17	1.17	1.20	1.23	1.23	1.30	1.37	1.39
				1.20	1.23	1.23	1.30	1.37	1.39
				2.25	2.42	2.55	2.84	2.92	2.16
				5.42	6.56	7.59	8.80	8.93	6.92
				2.02	1.75	1.52	1.34	1.29	1.47
				1130	1351	1515	1754	1923	1493
				1.20	1.23	1.23	1.30	1.37	1.39
				1.20	1.23	1.23	1.30	1.37	1.39

- The Japanese yen, which had begun declining against the dollar as early as **1979**, but fell much less than the EMS currencies after **1980**, was assumed in the alternative to have appreciated smoothly from **1980** to **1985** to reach the average level of **179** yen per dollar actually realised in that year. The further appreciation of the yen that took place in **1986** was assumed to have occurred.
- The Canadian dollar, which depreciated only moderately against the U.S. dollar over the first half of the decade, is assumed in the alternative to have followed an **unchanged** path *vis-à-vis* the currency of its neighbour.
- Assumptions were made about the currencies of small OECD countries that are not members of the EMS according to judgements as to what key currency they are most influenced by. For example, the cross rate of the Swiss franc with the German mark was set according to its historical evolution, similarly for the Australian dollar/U.S. dollar rate.

The net effect of these assumptions is that the dollar appreciates slowly on a nominal effective basis to stand **13** per cent above its **1980** level in **1985** and **14** per cent above in **1986**, as compared with the actual effective appreciation of almost 50 per cent, measured from average rates in **1980** to average rates in **1985**. The paths of exchange rate assumed for the counterfactual history are shown in Table 1.

It should be stressed that the alternative produced by these assumed changes in the history of key variables is not an illustration of how the world would have been different if only U.S. policies had been different. Indeed, the assumed differences in U.S. fiscal policy are less important than those in private behaviour – with respect to consumption and savings, and with respect to the pricing of currencies in markets.

It is not adequately understood what drove both of these off track in the **1980s**. They are both undoubtedly, at least partly, an endogenous response to other macroeconomic developments – especially real interest rate developments in the case of exchange rates, and the rising valuation of net household assets in the case of saving. These possible effects are either absent or weak in the **INTERLINK** model and, in any event, would not seem to explain fully what happened. A range of other explanations could be offered for both of these developments – for example, exchange rates were very likely affected by perceptions of the U.S. as a safe haven for wealth in the first half of the decade and by liberalisation of capital outflows from Japan, leading to an ensuing adjustment of portfolios.

It seems acceptable for the present purposes not to attempt to dig still deeper into fundamental causes – to leave unexplained why these developments occurred and to refrain from tying the analysis to one explanation as to what might have

caused these variables to behave as they did. The important point is that shifts in net savings, partly public and partly private, and the strong dollar stand at the centre of most accounts as to how the U.S. current-account deficit arose. This seems reasonable in the absence of strong arguments that these developments were an endogenous response to other forces and in view of the fact that it is on the savings side, rather than on the investment side, that one observes most of the necessary counterpart to the rising U.S. external deficit. Moreover, the spirit of the exercise is to focus on forces emanating from or closely linked to the United States rather than those that could be argued to have come from abroad.

One marked change in the **U.S.** economy, which occurred at the turn of the decade, was retained in the counterfactual alternative. This is the shift to a monetary policy much more strongly committed to reducing inflation. There are two reasons for retaining this event in the counterfactual history – one a matter of taste, the second a matter of analysis. As for the first, the shift in monetary orientation, although perhaps not its precise timing and intensity, had an aspect of necessity to it as a response that also occurred, albeit with varying degrees of intensity, in most **OECD** countries as inflation was seen to be running increasingly out of control. It would be unpleasant to contemplate an alternative history of easy monetary policy, with the inflation of the early part of the decade continuing to accelerate. As for the second reason, it would not be convincing to construct such an alternative in a model which was neither estimated nor tested over a period in which inflation in the United States was permitted to surge further upward from the rates of the early years of the decade. The behavioural changes that would have occurred, and indeed were beginning to appear then, very likely would have undermined the structural relationships in the model.

In designing the alternative, an unchanged commitment to an anti-inflationary monetary policy was taken to mean an unchanged path for M2, given the pattern of residuals in the demand function for this aggregate that actually occurred. U.S. interest rates in the counterfactual were thus the outcome of simulating the **INTERLINK** system. It turned out that this meant a slightly higher peak of interest rates in the early part of the decade as inflation reduction came more slowly in the counterfactual history. By **1984**, counterfactual U.S. interest rates are lower than the actual ones as the effects of slower real growth become dominant, and, in the absence of upward pressures on prices from a declining dollar, they are sharply lower by **1986** (Table 2).

The counterfactual assumptions were tested first in an unlinked simulation of the U.S. economy – that is, taking foreign aggregate demand and foreign export prices in domestic currency as given. The result was a current account that oscillated around zero. The swings would have been sizeable compared with earlier periods, but are insubstantial compared with actual experience in the **1980s**. Since the initial assumptions broadly achieved the required difference in the current-account

outcome, fine tuning of assumptions and add factors was eschewed, and attention turned to producing a linked counterfactual simulation.

Table 2. Counterfactual short-term interest rates

Per cent

	1978	1979	1980	1981	1982	1983	1984	1985	1986
United States (Actual)	7.2	10.1	11.4	14.6 14.0	12.1 10.6	8.8 8.6	8.5 9.5	6.5 7.5	3.8 6.0
Japan (Actual)	4.4	5.9	10.9	5.4 7.4	3.9 6.9	3.4 6.4	3.1 6.1	3.5 6.9	2.8 4.8
Germany (Actual)	3.7	6.7	9.5	10.1 12.1	5.9 8.9	2.8 5.8	3.0 6.0	2.4 5.4	2.6 4.6
France (Actual)	8.0	9.0	11.8	13.3 15.3	11.9 14.9	9.5 12.5	7.7 11.7	6.9 9.9	5.7 7.7
United Kingdom (Actual)	8.6	13.1	15.0	11.0 13.0	8.4 11.4	6.6 9.6	5.3 9.3	8.6 11.6	8.3 10.3
Italy (Actual)	11.5	11.9	17.1	17.3 19.3	16.9 19.9	15.3 18.3	13.3 17.3	12.3 15.3	11.4 13.4
Canada (Actual)	8.8	12.1	13.2	17.8 18.3	12.7 14.2	9.5 9.5	10.2 11.2	8.6 9.6	7.2 9.2

Macroeconomic policies in the rest of the world

Among the most difficult questions that had to be addressed in constructing the counterfactual simulation were how government spending, tax and monetary conditions might have been different outside the United States under conditions of much higher U.S. saving rates, private and public, and in the absence of upward pressure on the dollar. Choices were made based on the broad policy objectives that governments enunciated during the period — a commitment to reduce inflation and to contain government spending and deficits, which had grown rapidly in the 1970s. These objectives reflected a broad shift in the orientation of economic policies away from short-run fine tuning and towards establishing conditions favourable for growth driven by private demand and more responsive supply.

For fiscal policies, these orientations seemed best reflected by assumptions of unchanged paths of real government spending and unchanged tax structures from those that were actually in place. The thinking behind this government spending

assumption was that actual government spending in the first half of the **1980s** was governed more by the politically feasible scope for expenditure restraint given by the interplay of interest groups than by short-run macroeconomic conditions. Most governments would have reduced spending from levels that were realised if they could have found palatable ways of doing so, even though economic activity was weak almost everywhere. Similarly for taxes, the motivation behind the tax changes that governments implemented over this period was inspired more by long-run budgetary prospects and microeconomic efficiency than by short-run macroeconomic Considerations.

These fiscal assumptions are not entirely satisfactory for two reasons. First, there were cases of fiscal action during the period that were motivated by demand management considerations – France after the election of a new Government in **1981** is the most notable example. The expansionary course taken there led quickly to an unsustainable external position and to a reversal of course. As will be seen, the external macroeconomic conditions which initially forced the reversal of course in France appear even more compelling in the counterfactual simulation. Moreover, the eventual commitment to budgetary control, maintained subsequently following another change of government, increasingly was founded on the medium-term objectives that were the focus of policy in many other countries.

The second not fully satisfactory feature of the assumption arises because government deficits are significantly different in the counterfactual case – deficits are higher in some countries and in some periods, they are lower in others. These features of the counterfactual simulation reflect the effects of different inflation rates on unchanged real government spending and the dependence of tax receipts on both inflation and real income. In some cases where deficits are higher, economic activity is weaker, and conversely. It can be argued in these cases that the conflicting short-term and medium-term macroeconomic considerations support the assumption that real spending and tax systems would not have been substantially different. There are other cases, however, where a weaker economy and a smaller deficit result because of the effects of lower inflation on nominal spending. While there is a stronger argument that the course of fiscal policy would have been different in these instances, the magnitude could not be very large without producing bigger deficits. And external constraints would have inhibited fiscal expansion in many of these cases. It seemed more transparent to identify them, as is done later on, rather than complicate the assumptions in the basic counterfactual alternative.

The objective of reducing inflation was pursued in most countries through the establishment of monetary targets, although other variables were given more or less weight in a number of countries as an intermediate target of monetary policy. In particular, various exchange rate objectives have played a role in the monetary policies of Germany's EMS partners, of the United Kingdom and of Canada.

These general policy orientations were assumed to govern policies in the counterfactual environment. But it proved impossible to deal with monetary policy in

a mechanical way. This is due partly to the properties of the INTERLINK model in its current form, and partly to the fact that monetary growth rates were clearly allowed by central banks to deviate from announced targets depending on macroeconomic conditions during the period, thus lending plausibility to the view that they would have been different in an alternative environment.

The first difficulty became apparent from a trial simulation in which the paths of monetary aggregates were kept unchanged. The model produced negative short-term interest rates for some countries, reflecting the fact that little attention has been given in the design of the monetary blocks of INTERLINK to money supply and demand processes at very low interest rates since, at least until recently, these were remote from modern experience. Interest rates could not, of course, have been negative. Either interest elasticities of the demand for money would have proven much higher at low interest rates than they are in INTERLINK, or central banks would have found it difficult to maintain money growth at the rates achieved as increasingly liquid banks refrained from expanding their monetary liabilities and lending activity. The likely persistence of inflationary expectations, even with a more rapid unwinding of inflation, would have created market pressures tending to hold interest rates well above zero. Indeed, the record of Japan and Germany in late **1986** and early **1987**, when inflation was negative and market short-term interest rates remained above 3 per cent, supports the view that interest rates could have been forced below this level only very slowly, if at all.

The counterfactual simulation was therefore implemented by setting paths for short-term interest rates. This was done not because it was thought that interest rates were, or should have been, the central focus of monetary policymaking, rather this provided a way to deal expediently with an unrealistic feature of the model and to give some weight to the exchange rate considerations that were important in a number of countries. The short-term interest rate paths for Germany and Japan were set to follow roughly those from the unchanged monetary path simulation at the outset, but interest rate declines in these countries were moderated from those paths so that by **1986** they were only 200 basis points below the levels actually reached. The other EMS currencies and the U.K. pound were assigned interest rate paths that roughly maintained the historical pattern of interest differentials with German rates. The Canadian dollar was assigned an interest rate path to roughly maintain historical differentials *vis-à-vis* the United States.

The resulting paths for short-term interest rates are shown in Table 2. Given these and the other assumptions, money stocks in the counterfactual simulation (not shown in the tables) are below actual levels in Germany, France and Italy; they are higher in Japan, the United Kingdom, and Canada. But they still have the look of money growth paths that are being managed by central banks – that is to say, they neither explode nor collapse.

The pattern of interest differentials imposed in the counterfactual simulation should be evaluated from the standpoint of its consistency with the assumed

behaviour of exchange rates and the resulting pattern of inflation rates. This issue is taken up below, together with other possible tensions in the counterfactual alternative, following a review of the main features of the alternative.

II. THE COUNTERFACTUAL ALTERNATIVE

The counterfactual evolution of inflation, output, unemployment and current-account balances over the period **1978-86** is presented in Tables **3** to **6**. The counterfactual has been derived using INTERLINK, given the assumptions described in the previous section, and diverges from the actual history beginning in **1981**. It is interesting to get the flavour of how this counterfactual history might later have been summarised had it occurred, and without reference to history as we know it to have been. Since actual events are reflected in the counterfactual simulation where paths of exogenous variables and error terms have been left unchanged, they figure in the story. In broad terms this counterfactual history might have been recounted as follows.

Following the second oil shock in **1979**, governments of the OECD generally adopted non-accommodating monetary policies, with greater commitment to monetary targets. Interest rates rose sharply, and substantially positive real interest rates became the norm after a protracted period of low or negative real rates. Inflation began to recede after peaking in **1980**, but not without a slowing of the pace of output growth and outright recessions in a number of countries over the course of **1980-83**. The sharpest contractions occurred in the United Kingdom (**1980-81**), the United States (**1982-83**) and Canada (**1982**). Weak demand and the collapse of commodity prices that accompanied it, following several years of high nominal and real interest rates, precipitated a breakdown of private financial flows to developing countries in **1982** and a subsequent sharp import contraction by them. Although recovery in the OECD area got under way in **1983**, it has remained weak throughout the **1980s** to date. Unemployment has continued to rise in Europe and has fallen only marginally from peak levels in North America. Governments sought to contain public spending and budget deficits, which had ratcheted upwards over the **1970s**. They made little or no headway, however, as weak economic activity pushed up transfer payments, and tax bases grew slowly owing both to weak activity and lower inflation. The tighter fiscal discipline and the financial difficulties of developing countries contributed to the continuing weakness in demand growth. But what has been striking is the failure of a stronger pace of recovery to appear, even in countries where inflation is low and where interest rates are at the lowest levels experienced in the post-war period.

Table 3. Counterfactual inflation – private consumption deflator**Per cent change**

	1978	1979	1980	1981	1982	1983	1984	1985	1986
United States	7.2	9.2	10.8	10.0	8.6	5.0	3.5	3.6	-0.8
Japan	4.5	3.6	7.1	4.4	1.3	0.5	2.1	1.2	0.7
Germany	2.8	3.9	5.8	4.0	2.0	0.4	-1.8	-3.3	-1.8
France	9.1	10.8	13.3	11.3	8.4	6.9	4.1	1.2	0.5
United Kingdom	9.2	13.5	16.3	11.1	8.2	5.6	5.2	3.9	3.7
Italy	12.9	15.0	20.3	14.1	11.1	10.3	6.3	5.2	8.7
Canada	7.6	8.5	10.0	12.0	12.5	8.8	6.9	6.5	3.3
OECD average	7.6	9.0	11.3	9.4	7.5	5.1	3.9	3.1	1.3

Table 4. Counterfactual real GNP/GDP growth rates**Per cent change**

	1978	1979	1980	1981	1982	1983	1984	1985	1986
United States	5.3	2.5	-0.2	3.1	-3.1	-0.7	5.5	2.4	0.6
Japan	5.2	5.3	4.3	4.2	3.3	2.9	4.2	3.7	2.3
Germany	3.3	4.0	1.5	0.5	-0.3	0.7	1.3	1.5	1.4
France	3.4	3.2	1.6	1.4	2.6	0.3	0.9	0.8	1.6
United Kingdom	3.5	2.7	-2.4	-0.9	2.5	3.6	2.6	3.1	1.6
Italy	2.7	4.9	3.9	1.2	1.6	1.6	3.6	3.4	3.0
Canada	4.5	3.5	1.0	3.8	-2.5	2.7	5.0	3.6	1.3
OECD average	4.2	3.2	1.1	2.2	-0.5	0.8	3.9	2.5	1.4

Table 5. Counterfactual unemployment rates**Per cent of labour force**

	1978	1979	1980	1981	1982	1983	1984	1985	1986
United States	6.1	5.8	7.2	7.1	9.1	10.8	9.4	8.8	9.4
Japan	2.2	2.1	2.0	2.2	2.3	2.1	2.7	2.7	2.8
Germany	3.7	3.3	3.3	4.4	6.2	7.7	8.1	8.8	9.4
France	5.4	6.0	6.4	7.6	8.2	8.6	10.2	10.8	11.5
United Kingdom	5.1	4.8	6.4	9.5	10.7	10.8	10.8	11.4	12.0
Italy	6.8	7.2	7.1	7.9	8.4	9.0	9.0	8.8	9.5
Canada	8.3	7.4	7.5	7.3	10.1	10.2	11.0	10.4	10.9
OECD average	5.3	5.3	6.2	6.8	8.1	9.2	9.1	9.0	9.4

Table 6. Counterfactual current-account balances

	US\$ billion								
	1978	1979	1980	1981	1982	1983	1984	1985	1986
United States	-15	-1	2	-2	11	9	-37	-20	-12
Japan	16	-9	-11	9	8	5	19	29	46
Germany	9	-6	-1	6	3	7	1	7	8
France	8	7	-3	-4	-19	-15	-14	-17	-14
United Kingdom	2	-2	7	16	8	4	-1	-4	-10
Italy	6	5	-10	-9	-12	-7	-15	-22	-17
Canada	-4	-4	-1	2	-7	7	10	7	-4
Total of above countries	22	-10	-32	15	-4	4	-31	-19	-3
Other OECD countries	-10	-19	-37	-30	-10	-15	-13	-21	-31
Total OECD	12	-29	-69	-15	-14	-11	-44	-40	-34
OECD excluding United States	27	-28	-71	-13	-25	-20	-7	-20	-22
Four large European countries	25	4	-22	6	-16	-17	-23	-35	-33
OECD Europe excluding Germany	12	-4	-36	-10	-35	-23	-27	-47	-56

Exchange rates were reasonably orderly over the period, with a stable mark/dollar rate and periodic adjustments within the EMS – but these adjustments of European cross rates, which roughly compensated for inflation differentials (though falling somewhat short in the case of Italy), were insufficient to avert persistent and ever-growing current-account deficits in a number of Germany's EMS partners. Nevertheless, these deficits proved financeable, and the EMS held together despite rising concern in some quarters about its sustainability. The yen appreciated fairly steadily over the period against the dollar and other currencies, as a sizeable surplus in the Japanese current account indicated a continued strengthening of Japan's non-price competitiveness in international markets. The Canadian dollar declined steadily as Canadian inflation persistently exceeded U.S. inflation.

By 1987, the major economic policy issues in international meetings would have been:

- i)* How can growth be accelerated across the OECD so as to reduce unemployment?
- ii)* Is the European Monetary System sustainable in the face of the large current-account imbalances in Europe?
- iii)* Is there a way out of the debt problems of the developing countries?

This counterfactual history shares many common features with history as it was – for example, successful disinflation, disappointing growth in Europe and the debt crisis of the developing countries. The United States would have looked less different from Europe in its growth and inflation performance. And the behaviour of exchange rates would not pose such great policy challenges or intellectual puzzles – purchasing power parity and current-account economic equilibrium theories of exchange rate determination would have continued to hold sway as a rough guide to the medium term. Tensions across the Atlantic would have been absent, those across the Pacific would have been more muted, and those within Europe would have been more acute. It could not be described as a better outcome for any region of the world up to the middle of the decade. Indeed, it would have been generally worse in terms of output and employment – most markedly so in the United States. But the buildup of a big external deficit in the largest country would not now be clouding prospects for the future.

Comparing the counterfactual and actual histories

The differences between counterfactual alternative and actual history for key macroeconomic variables are shown in Tables 7 to 16 for the seven largest OECD countries and, where available, for groups including smaller OECD countries and the rest of the world. A brief discussion of the main differences for each variable follows. While the main purpose of this paper is to highlight what might have happened outside the United States, developments in that country are also of interest and are noted.

1. *Inflation as measured by the GNP/GDP deflator (Table 7)*

In the United States, disinflation proceeds more slowly in the counterfactual alternative, mainly because it is not accelerated by a strong dollar exchange rate in the first half of the decade. But with a weaker path for output, and in the absence of dollar depreciation in 1985 and 1986, counterfactual inflation falls below actual inflation. By 1986 U.S. prices reach the same level. In Canada, higher inflation in the early part of the period is not offset by lower inflation later and the price level is nearly 10 per cent higher by 1985/86. The Canadian counterfactual inflation rate, however, is roughly the same as actually recorded by then. Elsewhere, inflation is generally lower – markedly so for EMS members and in some cases negative for a few years. Price levels in these countries are 15 to 20 per cent below their actual level by 1986. Thus, the different exchange rate path redistributes inflation across countries and over time. But, on balance, average OECD inflation recedes a little more quickly owing to weaker output and employment.

Table 7. GDP/GNP deflator
Per cent difference from actual

	1981	1982	1983	1984	1985	1986
United States	0.5	2.2	2.7	2.3	2.0	-0.4
Japan	0.1	-0.6	-1.8	-2.0	-3.0	-3.5
Germany	-0.6	-3.3	-5.8	-9.6	-14.8	-17.4
France	-0.4	-2.1	-5.1	-7.1	-11.5	-14.5
United Kingdom	0.1	-0.4	0.3	1.3	0.0	-0.3
Italy	-1.2	-5.6	-9.5	-13.3	-16.8	-16.6
Canada	0.6	2.1	4.5	7.2	9.9	9.7
Total of above countries	0.1	0.1	-0.4	-1.4	-2.8	-4.5
Other OECD countries	-0.4	-1.0	-1.6	-2.4	-3.5	-4.7
Total OECD	0.0	0.0	-0.6	-1.5	-2.9	-4.6
OECD excluding United States	-0.3	-1.6	-2.8	-4.0	-6.0	-7.2
North America	0.5	2.2	2.4	2.1	2.1	0.5
OECD Europe	-0.5	-2.3	-3.8	-5.6	-8.2	-9.4

2. Total domestic demand and its major components (Tables 8- 11)

In the United States, domestic demand grows substantially more slowly after **1981** and stands almost **10** per cent below actual in **1986**. Elsewhere, it generally grows more strongly earlier in the period, but then recedes to a slower pace leaving levels of domestic demand, on average, less than **1** per cent above historical levels in **1986**. Italy is notable in achieving a **6½** per cent higher level of domestic demand in **1986**. This is one of several aspects of the behaviour of the Italian counterfactual history that are idiosyncratic. These will be reviewed together in the plausibility discussion below.

Real government consumption is, by assumption, unchanged except in the United States, where it is **8** per cent lower by **1986**. But government budget balances as measured by the net lending of the public sector are affected by output, interest rates and inflation. For the United States, these effects mean that there is not a consistently better budget outcome, despite the assumed fiscal policy change. Most other countries achieve somewhat smaller nominal deficits, but in Germany, government deficits are larger in **1985** and **1986**.

Consumption is, of course, weaker in the United States owing to assumed higher saving and endogenously lower income. The endogenous response of investment to a weaker economy is strong enough to pull its growth down more than the other components of domestic final demand. In other countries several patterns of consumption and investment behaviour can be observed. In Italy, both

Table 8. Total domestic demand, volume
Per cent difference from actual

	1981	1982	1983	1984	1985	1986
United States	0.8	-0.8	-5.9	-1.4	-8.4	-9.8
Japan	0.4	1.8	2.6	2.1	1.3	0.6
Germany	1.1	2.1	2.4	1.1	0.6	-0.9
France	0.8	1.1	1.8	2.0	1.6	-0.4
United Kingdom	0.4	1.9	2.4	2.5	2.8	1.9
Italy	0.8	3.1	4.6	5.3	6.1	6.5
Canada	0.1	0.8	0.1	0.3	0.5	-0.2
Total of above countries	0.1	0.1	-1.6	-2.6	-3.2	-4.4
Other OECD countries	-0.1	-0.3	-0.5	-0.8	-1.2	-1.1
Total OECD	0.6	0.5	-1.4	-2.4	-2.9	-3.9
OECD excluding United States	0.4	1.4	1.7	1.4	1.2	0.4
North America	0.1	-0.7	-5.4	-6.8	-1.6	-9.0
OECD Europe	-0.5	1.5	1.1	1.6	1.5	0.1

	Actual level in 1986	Difference from actual					
		1981	1982	1983	1984	1985	1986
United States (US\$ billion)	-140	-6	25	10	-6	1	-14
Japan (¥ trillion)	-3	0	2	2	2	1	0
Germany (DM billion)	-24	3	12	13	4	-8	-23
France (FF billion)	-148	8	21	42	56	60	46
United Kingdom (£ billion)	-11	1	2	5	6	7	6
Italy (L trillion)	-101	2	10	18	28	38	48
Canada (C\$ billion)	-27	1	4	4	7	10	10

Table 10. Consumption volume
Per cent difference from actual

	1981	1982	1983	1984	1985	1986
United States	0.4	-0.8	-5.2	-1.0	-1.1	-8.7
Japan	0.3	1.4	2.1	1.5	1.0	0.2
Germany	1.4	3.0	3.2	3.4	4.0	2.5
France	0.6	1.6	2.1	2.5	3.1	2.5
United Kingdom	0.3	1.4	1.1	1.9	2.3	1.3
Italy	1.0	3.2	4.8	6.3	1.8	1.1
Canada	-0.1	-0.3	-0.9	-1.6	-2.0	-2.0

Table 11. Business investment volume
Per cent difference from actual

	1981	1982	1983	1984	1985	1986
United States	1.5	0.2	-8.0	-9.0	-9.4	-12.1
Japan	0.6	2.1	3.8	3.3	2.3	2.0
Germany	1.0	3.5	1.1	-2.8	-5.6	-8.4
France	2.4	3.6	2.6	1.0	-3.1	-10.6
United Kingdom	1.6	6.7	10.5	11.6	12.0	10.5
Italy	0.6	5.4	9.1	9.1	12.4	12.9
Canada	0.1	0.9	2.0	2.1	3.1	4.3

are strong; in Canada and the United Kingdom, investment is strong with consumption only a little stronger in the former and quite weak in the latter; in Japan, both are stronger in the early **1980s** and then level off; in Germany and France, greater strength in both gives way to weakness, especially of investment, in the middle of the decade. Perhaps the most important general observation to make about these outcomes is that investment performance is not consistently higher outside the United States in the absence of net U.S. absorption of savings from the rest of the world.

3. *Exports* of goods and services - volume (Table 12)

U.S. export volume grows somewhat more strongly through **1985** as stronger U.S. price competitiveness in the counterfactual outweighs greater market weakness. In several years, however, this means that export volume would merely have declined less than it did, not that it would have risen. In **1986**, without the boost in competitiveness from dollar depreciation and with slower growth abroad, export growth is weaker than in the actual history. However, the level of exports volume is still 6 per cent higher. In Canada, competitive gains are more quickly swamped by weak market growth owing to weaker demand in the United States, its major trading partner. Hence, Canadian export volume falls increasingly below historical levels after **1982**. Export volumes elsewhere in the OECD also generally follow lower paths, with Japan experiencing the largest difference owing to the assumed appreciation of the yen and the importance of the U.S. market for Japanese exports. Poorer export performance is not confined to the OECD area outside the United States: non-OECD export volumes are 6 per cent below their historical level in **1986**.

Table 12. Exports of goods and services, volume
Per cent difference from actual, national accounts basis

	1981	1982	1983	1984	1985	1986
United States	2.7	7.5	8.9	8.6	10.7	6.4
Japan	0.7	-3.4	-8.9	-10.9	-12.6	-12.5
Germany	-1.0	-2.3	-5.5	-7.6	-9.1	-9.0
France	-1.0	-3.0	-5.2	-7.8	-10.2	-9.4
United Kingdom	0.8	1.4	0.7	-0.7	-2.7	-4.7
Italy	-1.6	-2.5	-2.1	-4.3	-5.7	-4.5
Canada	1.5	1.7	-1.7	-3.2	-4.9	-8.5
Total of above countries	0.8	1.2	-0.5	-2.2	-3.1	-4.5
Other OECD countries	-0.1	-0.1	-1.4	-2.8	-4.0	-5.4
Total OECD	0.6	0.9	-0.7	-2.4	-3.3	-4.7
OECD excluding United States	-0.1	-1.2	-3.4	-5.3	-6.9	-7.6
North America	2.5	6.4	6.7	6.0	7.1	2.9
OECD Europe	-0.4	-0.9	-2.5	-4.3	-5.9	-6.5
Non-OECD countries	0.1	0.4	-1.1	-3.3	-4.7	-6.2

4. Imports of goods and services - volume (Table 13)

U.S. and Canadian import volumes follow lower paths in the counterfactual simulation, substantially lower in the United States, as price competitiveness and domestic demand operate in the same direction. Indeed, about three quarters of the net difference in U.S. trade volumes in **1986** appears on the import side. Elsewhere in the OECD, imports are higher through **1984**. By **1986** some countries, but not Italy and the United Kingdom, which both have higher levels of domestic demand, have lower imports in the counterfactual simulation. Financing constraints on import growth are even stronger for the non-OECD than in actual history owing to weaker exports. Hence import compression is more draconian in these countries.

5. Real GNP/GDP (Table 14)

GNP/GDP growth for the OECD area averages a little less over the period as a whole in the counterfactual history, the level of GNP standing about $3\frac{1}{2}$ per cent lower in **1986**. As one would expect, given the assumptions, U.S. output is reduced

Table 13. Imports of goods and services, volume
Per cent difference from actual, national accounts basis

	1981	1982	1983	1984	1985	1986
United States	-0.5	-5.0	-13.1	-11.9	-21.7	-21.7
Japan	0.2	2.8	4.6	2.8	2.3	-0.9
Germany	0.8	2.3	1.8	0.4	-0.3	-1.4
France	1.1	3.9	3.8	3.8	3.2	-0.8
United Kingdom	0.6	2.9	3.3	2.9	3.6	1.9
Italy	1.9	5.4	1.5	8.0	9.3	8.1
Canada	0.3	-0.2	-2.9	-3.9	-3.9	-4.1
Total of above countries	0.4	0.5	-2.1	-4.8	-6.2	-7.7
Other OECD countries	0.4	1.0	0.1	0.3	0.0	-1.0
Total OECD	0.4	0.6	-1.4	-3.5	-4.6	-6.0
OECD excluding United States	0.1	2.2	2.3	1.6	1.5	-0.1
North America	-0.3	-4.2	-11.4	-15.1	-18.1	-19.0
OECD Europe	0.8	2.2	2.2	1.1	1.6	0.2
Non-OECD countries	-0.9	-1.0	-1.6	-4.2	-6.0	-5.9

Table 14. Real GNP/GDP
Per cent difference from actual

	1981	1982	1983	1984	1985	1986
United States	1.1	0.6	-3.5	-4.4	-4.7	-6.4
Japan	0.5	0.7	0.4	-0.4	-1.4	-1.6
Germany	0.5	1.2	0.1	-1.6	-2.5	-3.5
France	0.2	0.3	-0.1	-0.1	-1.5	-2.3
United Kingdom	0.5	1.5	1.1	1.4	1.0	-0.1
Italy	0.0	1.4	2.5	2.6	3.2	3.5
Canada	0.4	1.2	0.9	0.4	0.0	-1.8
Total of above countries	0.8	0.8	-1.3	-2.1	-2.6	-3.8
Other OECD countries	-0.3	-0.1	-1.2	-1.9	-2.1	-2.8
Total OECD	0.6	0.6	-1.3	-2.1	-2.6	-3.6
OECD excluding United States	0.2	0.6	0.2	-0.5	-1.2	-1.1
North America	1.1	0.6	-3.2	-4.0	-4.3	-6.0
OECD Europe	0.2	0.6	0.3	-0.3	-0.9	-1.5

the most – over **6** per cent by **1986**. For the rest of the OECD, output is only a little more than $1\frac{1}{2}$ per cent lower in **1986**. All of the major seven countries, including the United States, experience slightly stronger growth in the early part of the period (when the exchange rate and interest rate paths are different, but U.S. total saving has not yet begun to diverge from its historical path). Countries stay ahead of actual history for varying lengths of time, with only Italy registering higher GNP (as well as a slightly higher GNP growth rate) in **1986**.

6. *Employment* (Table 15)

Employment is initially a little stronger and, in most countries, subsequently weaker in the counterfactual simulation, with the U.S. showing the largest employment loss relative to actual history. The United Kingdom and Italy are exceptions in having higher employment throughout the period, although the difference in the former by **1986** is negligible. These employment developments correspond roughly to the evolution of **GNPs**, but employment is affected by wage and profitability developments, as well as by the path of output.

Table 15. Total employment
Per cent difference from actual

	1981	1982	1983	1984	1985	1986
United States	0.6	0.8	-1.3	-2.1	-1.9	-2.8
Japan	0.1	0.1	0.0	-0.1	-0.3	-0.3
Germany	0.2	0.6	0.6	0.1	-0.6	-1.7
France	0.1	0.1	0.0	-0.2	-0.6	-1.0
United Kingdom	0.1	0.4	0.9	0.9	0.5	0.1
Italy	0.1	0.1	0.2	0.3	0.4	0.6
Canada	0.4	1.4	1.1	0.6	0.3	-1.8
Total of above countries	0.3	0.5	-0.3	-0.7	-0.8	-1.4
Other OECD countries	0.0	0.0	-0.2	-0.5	-0.8	-1.1
Total OECD	0.2	0.4	-0.3	-0.7	-0.8	-1.4
OECD excluding United States	0.1	0.2	0.2	0.0	-0.3	-0.7
North America	0.5	0.9	-1.1	-1.9	-1.7	-2.7
OECD Europe	0.1	0.2	0.3	0.1	-0.2	-0.7

7. *Current accounts* (Table 16)

The U.S. current account is much stronger by design. The Japanese and German current-account surpluses are substantially smaller, although a sizeable

Table 16. Current balance
Differences in **US\$** billion from actual

	1981	1982	1983	1984	1985	1986
United States	-8.6	19.9	55.1	69.3	91.4	128.5
Japan	4.3	1.1	-16.3	-16.0	-19.4	-40.4
Germany	8.3	2.9	-2.8	0.2	-5.1	-21.1
France	0.9	-1.1	-9.8	-13.1	-11.2	-11.8
United Kingdom	3.3	1.0	-0.7	-3.0	-1.5	-8.9
Italy	-0.4	-6.3	-1.8	-11.9	-11.4	-20.1
Canada	2.1	5.0	5.4	1.8	1.8	2.0
Total of above countries	10.5	11.1	23.8	33.3	38.6	15.1
Other OECD countries	0.9	-2.3	-1.1	-11.6	-19.8	-29.1
Total OECD	11.4	14.8	16.1	21.7	18.8	-14.0
OECD excluding United States	20.0	-5.1	-39.0	-47.7	-18.6	-142.5
North America	-5.8	24.9	61.1	77.1	105.2	130.5
OECD Europe	14.0	-9.0	-24.3	-33.2	-59.3	-99.5
Non-OECD countries	6.1	-1.4	-2.6	6.7	11.9	12.4

Note: Totals may not add due to rounding.

current-account surplus emerges in Japan (about \$25 billion in 1985 and \$45 billion in 1986) despite the assumed appreciation of the yen. The much weaker current-account positions that emerge for Italy (where the effects of weaker price competitiveness and weaker markets are reinforced by stronger domestic demand), France and the aggregate of the smaller OECD countries, highlight one of the main tensions that appear in the counterfactual history. OECD Europe has a current-account deficit in the neighbourhood of \$40 billion in 1985 and 1986 compared with surpluses actually recorded of about \$20 billion and \$50 billion in these two years.

III. COULD THINGS HAVE WORKED OUT THIS WAY?

Several features of the counterfactual history warrant examination as to their plausibility. They involve questions about both the adequacy of the behavioural relationships embedded in **INTERLINK** and the policy assumptions imposed. It is fair to ask whether the broad features of the **INTERLINK** responses are plausible, given the assumptions. The main focus of this section, however, is on the reasonableness of some of the assumptions when looked at in light of the resulting simulations. Two

areas of tension are examined, then three kinds of alternative outcomes are discussed.

1. *Exchange rates*

Given the puzzle thrown up by the actual behaviour of dollar exchange rates in this decade, it is difficult to claim that one constellation of exchange rates is more plausible than another for a particular set of values of macroeconomic variables. In some respects, the counterfactual pattern of exchange rates would have been easier to explain; the rough stability of the dollar against the German mark would have been seen against conflicting pressures – much lower inflation in Germany and higher inflation in the United States on the one hand, and nominal interest rate differentials much more in favour of the dollar on the other hand. If market psychology had somehow been different early in the decade and dollar appreciation had not taken hold, strengthening the disinflation process in the United States as it did, and if the strong U.S. recovery from the 1982 recession had not occurred, one could perhaps accept the possibility that rather large nominal interest differentials in favour of the U.S. dollar would have been consistent with exchange rate stability. Similarly, a continuing appreciation of the yen might have been sustainable in a different psychological climate as a Japanese current-account surplus emerged. Expectations of such an appreciation would have been qualitatively consistent with the interest differential in favour of the U.S. dollar which appears.

Nevertheless, the assumed alternative behaviour of dollar exchange rates is not derived from a theory of exchange-rate determination and must be taken for what it is – one of the key "what if" elements used to construct the alternative. If this element of the counterfactual simulation is not accepted, one would be forced to more extreme views about how other factors might have evolved, or to the conclusion that at least part of the U.S. current-account deficit was inevitable as a consequence of the commitment to monetary policies of disinflation. The United States started with higher inflation than Germany or Japan, and this meant a sharper increase in dollar real interest rates.

The assumed behaviour of exchange rates for Germany's largest **EMS** partners, Italy and France, given the mark/dollar rate, also poses intriguing questions. The interest rates and inflation performance of these countries relative to that of Germany is not markedly different in the alternative, and current-account balances are reduced by slightly less in these countries than in Germany. These observations suggest that the historical **EMS** cross rates might have been sustainable. But the absolute pattern of current accounts would have looked quite different. Germany would have still registered a surplus, while Italy and France would have developed very large, chronic deficits. The same would have been true for most of the smaller **EMS** members, for which individual country figures are not shown in the tables. Given the tendency for **EMS** pressures to emerge when sizeable deficits appear,

policies might have had to have been quite different within Europe to have maintained the parities that actually prevailed.

While Italian policies could clearly have been more restrictive, given that it is the only country to have consistently higher GNP growth in the counterfactual simulation, France and the smaller EMS participants would have had to pay a higher price to uphold European currency stability. In an environment of greater stability of the dollar, intra-European stability may well not have been valued as highly as it was when the dollar was subject to wild swings. This consideration suggests also that Germany might not have modified its policy to any great extent in the interests of intra-European exchange-rate stability. Might the EMS not have survived or survived only with much larger parity changes in such a world? This possibility needs to be assessed against the background of output and inflation performance.

2. Output, inflation and macroeconomic policies

The counterfactual simulation shows weaker output paths for Germany and Japan, while disinflation proceeds more quickly in these countries. Indeed each country experiences earlier and larger periods of declining prices than actually occurred. Might private domestic demand have been substantially stronger autonomously with the given policies? Might policies in these countries have been much more stimulative?

The experience of **1985-87** would suggest neither possibility should be considered very likely, although they are of course conceivable (as is the possibility of still weaker domestic demand). Both economies have grown more slowly in this decade than earlier, with Germany experiencing much higher unemployment. At first, this seemed to be reasonably ascribable to policies committed to controlling inflation, made more difficult by weak currencies, and to efforts to reduce budget deficits. But slow growth of domestic demand persisted even after these factors receded. For some time, both economies failed to respond strongly to the elimination of inflation. Saving rates edged up rather than down. In the face of weak growth of demand, investment did not respond strongly to high rates of profit. While there are indications from recent developments that this situation may be changing in Japan, it has not yet done so in Germany. Thus the conclusion seems justified that domestic private demand in these countries, and especially in Germany, is not more strongly self-levitational, nor is it more strongly responsive to low money market interest rates and ample liquidity levels than **INTERLINK** allows for. In this respect, it should be noted that the household saving rate is $1\frac{1}{2}$ percentage points lower in Japan and $3\frac{1}{2}$ percentage points lower in Germany by **1986** in the counterfactual simulation – there is considerable endogenous crowding-in of private consumption spending in **INTERLINK**.

It is also not self-evident that policies would have been more expansionary than assumed, simply because of the different external environment. The real growth and employment developments in the counterfactual history are not so radically different from actual history as to call into question the basic orientations of monetary and fiscal policy which were assumed to be maintained in constructing the counterfactual history. As noted previously, interest rates are substantially lower through much of the period, reflecting lower inflation. And they fall somewhat below what the central banks and markets seem to view as floors in Germany and Japan. Moreover, they result in interest differentials *vis-à-vis* the dollar that cast some doubt on the assumed path of exchange rates. Much easier monetary policies in these countries, while the Federal Reserve was pursuing a tight **anti-inflationary** monetary policy, would very likely have triggered dollar appreciation, at least some shift towards deficit in the U.S. current account, and enough reason to be concerned about inflation in Germany and Japan to deflect the central banks of these countries from such a course. Indeed, this is akin to what actually happened.

As for other countries, the question arises whether the emergence of current-account deficits would have forced tighter policies to maintain stable exchange rates. This is a possibility not only for Italy, where the response of private demand to lower inflation is strong and growth is higher, but also for other European countries where output falls below the levels actually achieved. It seems reasonable to believe that this tension in the counterfactual simulation, if it resulted in exchange rate pressures, would have been resolved partly through larger intra-European exchange rate changes and partly through more restrictive policies in countries with large current-account deficits. The result would have been still weaker output, although perhaps not markedly so.

In Canada, there is tension of a different sort. While the current account is somewhat stronger, the inflation differential with the United States is wider and the current-account balance falls back to only \$2 billion higher than in actual history by 1986. Under these conditions, greater monetary restraint than allowed for in the counterfactual history might well have been forthcoming. In its absence, the Canadian dollar might have slipped further against the U.S. dollar.

Plausible alternatives

As noted in the Introduction, in principle there are an infinite number of alternative sets of assumptions that could have produced a roughly constant U.S. current account. Many of them – such as different ways of distributing the reduction in U.S. absorption between government spending, investment and private consumption, would matter little for an investigation focused on the rest of the world. As for others, limits of possible assumptions must be imposed judgmentally; they are not restricted by the model. Four possibilities warrant consideration.

1. *Different policies outside the United States*

INTERLINK simulations, presented elsewhere, indicate small short-run effects on the U.S. current account from policy changes of a plausible magnitude in other countries, although the simulated effects cumulate over time (Dean and Koromzay, **1987**). This suggests that it would be impossible to produce a realistic alternative case of a stable U.S. current account without imposing most of the *ex ante* absorption change in the United States. The reasons for this are the very large apparent elasticity of U.S. imports with respect to U.S. domestic demand, and the weight of the United States in OECD area demand.

2. *Different behaviour of the U.S. exchange rate and the U.S. economy*

One possibility of particular interest, given the debate surrounding U.S. policy at the time, involves U.S. saving. Suppose the U.S. personal saving rate had risen over the early **1980s** as predicted at the time by a number of the advocates of the tax policies enacted then. U.S. interest rates might have been lower after **1982** than in either the actual or counterfactual history, and U.S. growth might not have been too far below the counterfactual path. This would have depended on precisely how the Federal Reserve responded. The current account could have remained in balance with some appreciation of the dollar (say, owing to safe haven flows) if growth had been lower. As compared with the counterfactual simulation, the other OECD countries would have faced roughly the same net U.S. demand support for their output as in the counterfactual, but somewhat slower disinflation to the extent the dollar appreciated. Therefore, monetary policies in these countries might well have been tighter than in the counterfactual, although perhaps not as tight as they actually were. This would seem to suggest that even weaker growth abroad than in the counterfactual simulation would have resulted.

3. *A different distribution of effects across OECD countries*

The precise pattern of output, inflation, and current-account effects on countries other than the United States is the combined result of the specific assumptions made about the patterns of exchange rates and interest rates and of the properties of the individual country models. Neither of these can be assigned as much confidence as the broad behaviour of this group of countries. Without an appreciation of the yen, for example, the Japanese current-account surplus would have been larger and the deficit of Europe would have been even more disconcerting. The pattern within Europe could easily have looked quite different – especially the strong performance of Italy, which reflects model properties about which there is room for scepticism. But it seems unlikely that Germany would have failed to emerge in a relatively strong position within Europe – as judged by the current account or inflation. Thus, the likelihood of greater tension within the EMS seems robust, although perhaps not the identity of the countries under pressure.

4. *Structural change*

It has become increasingly recognised that microeconomic interventions of governments – in labour markets, financial markets and goods markets – shape the macroeconomic structure and hence have an important bearing on macroeconomic outcomes. It follows that the behaviour observed in historical macroeconomic data – price sluggishness, weak responses to changing patterns of demand and relative price changes, and the persistence of high unemployment – should be seen as the macroeconomic reflection of microeconomic conditions. Thus policies to improve macroeconomic outcomes over the medium term extend to microeconomic reform and are not exclusively the domain of macroeconomic policies. Governments have acted in recognition of the possibilities to strengthen economic adjustment mechanisms by reducing regulation, reforming tax systems, and privatising public corporations. But, at the same time, production subsidies for weak sectors have tended to increase in some countries, as have non-tariff trade barriers to international trade. Thus, while there seems to be a trend towards increased flexibility of economies, progress has been uneven.

It has not proven possible to identify very large effects on macroeconomic structural relations of the microeconomic measures governments have taken, although there is some weak evidence of change. Perhaps one should not be surprised that the links between microeconomic policies and macroeconomic structural change are difficult to observe statistically. The effects of individual policy actions may be small and many of them have been quite recent (see Chan-Lee, Coe and Prywes, 1987 for an examination of this issue in OECD labour markets.) To the extent that microeconomic structures have changed, the net macroeconomic effects are reflected in the error terms or in unstable parameter estimates within a macroeconomic model. The question is, might these policies have been different and might they have affected coefficients or the error terms in the INTERLINK model if the U.S. current-account deficit had not appeared? In particular, might growth have been stronger or weaker than the counterfactual simulation suggests?

The answer one gives to this question will depend on an evaluation of the balance of considerations in the debate over the politics of macroeconomic reform. Many policymakers and commentators have argued that the slow growth and high unemployment of the 1980s have created a poor environment in which to build political support for reform. In this view, the no-better situation in the counterfactual history would have made reform even more glacial and perhaps would have resulted in more recourse to subsidies and protection. As a result, inflation might have been higher and aggregate employment and output lower than in the counterfactual simulation, even if some groups might have managed to do better with greater protection.

Others argue that deep reform will occur only under intense distress. On this view, one might conclude that by the middle of the decade a stronger consensus for

change might have emerged. But without the good growth and dazzling job creating performance of the U.S. economy under a President committed to strengthening the role of markets, would this have been the direction of change that other countries would have moved towards? It seems at least as likely that the political-economic dynamic would have corresponded more closely to that of the 1930s, with the crisis perceived to be one of the failure of capitalism rather than one of the failure of the interventionist state. What actually happened – a combination of moderately disappointing economic performance in Europe, combined with relative good performance in the United States (even though marred by a large current-account deficit) – may have created conditions relatively favourable to addressing the rigidities and distortions introduced by policies into national economies and the world trading and financial systems.

IV. SOME LESSONS

The principal ways in which the assumed forces behind the growing U.S. current-account deficit shaped world macroeconomic developments in the first half of the 1980s have been identified by comparing actual developments with a counterfactual history. The analysis certainly accords with the view that the emergence of the deficit was a major event in the world economy. It does not, however, lead to the conclusion that it was responsible for the generally poor economic performance over this period in Europe or that, by drawing savings to the United States, it resulted in lower business investment elsewhere. Most countries probably achieved higher levels of output and investment than they otherwise would have. Nor does it suggest that tensions in the international economic arena would have been less, although the lines of conflict might have been different – less focused on the United States, more focused within Europe, and perhaps within each country between those who saw the way to renewed prosperity through control of government spending, government deficits and microeconomic liberalisation on the one hand, and those who sought a way out through more extensive controls and expansionary demand policies on the other hand.

The reasons the story comes out this way are important. There are two. First are the forces that shaped actual economic developments. The major reason that output performance in the OECD area was so poor in the early 1980s would seem to be that policies were directed towards reversing the upward trend of inflation over the previous decade. Two other developments also contributed. First, in Europe and Japan efforts were made to contain budget deficits that had built up over the previous decade, and second, the debt crisis constrained the import possibilities of

the developing countries and compounded the global demand weakness. These features of the history of the 1980s were retained in the counterfactual history.

The U.S. took a different budgetary course from most other countries after 1982 and budget deficits ballooned even though the economy was expanding at a surprisingly strong pace. The appreciation of the dollar allowed this to occur while U.S. inflation continued to recede. Growth was driven, not only by fiscal stimulus, but also by strong consumption demand and an investment recovery sustained by both renewed confidence in future economic growth and a pro-business orientation in Washington. One consequence of this course of developments in the U.S. economy was considerable spillover of demand to other countries – the U.S. current-account deficit.

The second reason the story comes out as it does is that INTERLINK predicts that stronger domestic demand growth outside the United States would not have fully compensated for the **loss** of **U.S.** demand, even though inflation would have receded more quickly, the terms-of-trade would have been more favourable, and interest rates might have been substantially lower. Does this reflect a model structure that is overly pessimistic about the response of consumption and investment to such developments? The author was inclined to this view eighteen months ago. But the weak response of private spending outside the United States to the improving terms-of-trade, low inflation and lower interest rates that came in the wake of the decline of the dollar and lower oil prices lends credence to the behaviour embodied in the model. This is not to say that all countries failed to respond, either in the counterfactual simulation or in reality over the last two years. But, on average, the **pickup** in investment and consumption spending has been weak. The weakness of German domestic demand is especially important in both the counterfactual history and in recent events because it has by far the largest current-account surplus in Europe. Looking to a future when the U.S. current-account deficit seems bound to shrink one way or the other, a shrinking European surplus is likely to impose external constraints on the growth of European countries other than Germany unless German domestic demand growth picks up substantially.

Japan does better than Germany in maintaining output growth in the counterfactual simulation despite a greater **loss** of exports. Thus it might have got by better in a world of weak U.S. markets than is often supposed. But its current-account surplus, although much reduced, would still have been large enough to be a point of some international tension. This underscores the magnitude of the challenge that lies ahead to achieve a better balance of competitiveness between Japan and others in world markets and in Japanese markets, even with the value of the yen having now risen to the path assumed in the **counterfactual** history. The surplus predicted by the model seems to have partly reflected trend developments in Japan's export prowess and the low historical propensity of Japan to import manufactured goods. The developments assumed to have given rise to the U.S.

deficit do not seem to have been more than half the story behind Japan's surplus.

If the view developed in this paper is accepted as reasonable, it leads to a relatively pessimistic view about prospects for strengthening growth and reducing unemployment in Europe while the U.S. current-account deficit is declining. There may be room for somewhat more expansionary demand policies if Germany were to take the lead. And it would seem to make sense to use all of the available means to correct unemployment problems that have deepened in Europe year by year. But when one looks at the contribution that larger budget deficits could make without building up future problems, it looks small in comparison with the need. So, too, does the contribution that could be expected from monetary policy, given the resistance levels for interest rates on Deutschemark bonds that seem to have been reached.

One can hope that economies will begin to show more dynamic growth than INTERLINK would predict or than has been apparent thus far in this decade. But action is needed to improve the structural functioning of economies and brighten the prospects for such a development. If the pace of such action were accelerated, the structure of models such as INTERLINK, which point to chronic weak growth without unsustainable stimulus from exports or fiscal deficits, would become invalid. The future need not be as bleak as the past was, or might have been.

The general conclusion would seem to be that there were deep problems in all of the OECD countries at the outset of the decade. The policies that were pursued exchanged some of them –inflation, large government deficits in Europe and Japan – for others –high unemployment in Europe, large current-account imbalances and corresponding domestic imbalances between saving and investment. Fundamental solutions have not yet been put in place.

The complete story of the effects of the large U.S. current-account deficit cannot be told yet. This will depend on how it is unwound. In this respect, the focus of this paper on macroeconomic developments in the first half of the decade has neglected some of the costs of the course that was followed. World patterns of trade and production have been distorted, and these distortions must now be reversed. The United States must reclaim lost markets. Others must accept this adjustment. Indeed, if the shortfall in demand growth abroad relative to that in the United States over the decade to date is not made up, the market share developments over this period will have to be more than reversed.

The scale of the adjustment challenge in manufactured trade, which represents three-quarters of U.S. merchandise trade, is indicated by Tables 17 and 18. While favourable changes may occur in commodities and services trade, manufacturing is likely to be where the forces of adjustment operate most strongly.

The evolution of the seven major countries' shares of exports in world trade of manufactures is shown in Table 17. These have declined on average, as non-member countries have expanded their manufactured exports. As a group, they

Table 17. Index of manufactured export market shares
1979 = 100

	1979	1980	1981	1982	1983	1984	1985	1986
United States	100	106	97	87	84	83	85	89
Japan	100	111	114	113	117	120	120	114
Germany	100	95	100	102	100	101	104	101
France	100	94	92	91	91	90	87	83
United Kingdom	100	95	85	85	83	83	87	86
Italy	100	91	89	88	92	92	93	92
Canada	100	99	96	93	89	86	85	81

Table 18. Index of ratio of manufacturing value added to manufactured imports
1979 = 100

	1979	1980	1981	1982	1983	1984	1985
United States	100	95	90	84	75	63	60
Japan	100	111	104	110	116	107	115
Germany	100	97	98	98	89	86	86
France	100	90	91	86	89	88	n.a.
United Kingdom	100	92	89	82	75	71	68
Italy	100	92	101	100	102	87	82
Canada	100	103	103	109	100	96	90

are likely to continue to do so. The United States, along with the United Kingdom, **lost** market shares most rapidly from **1979** to **1984**. Since then both have gained, and the United States has returned to the middle of the standings. Japan continued to gain market share until **1984**; its loss in **1986** is likely to have to be followed by many more if a better balance of current accounts is to be achieved. Germany, too, would seem to face loss of market share.

A perspective on performance in each country's own market for manufactures is given in Table **18**, which shows the evolution of ratios of domestic value added to imports in manufacturing in index form. The general trend is downward, as one would expect so long as there is a trend towards increasing international integration of markets for manufactures. But Japan stands out against this general trend as having become more self-contained as a manufactured goods market. This cannot be ascribed to the emergence of the strong dollar and a large U.S. current-account deficit: other countries have also clearly failed to penetrate the Japanese market. The establishment of a trend in Japan towards rising imports relative to domestic

value added will have to be a part of the process of reducing the Japanese current-account surplus and the U.S. deficit. The U.S. stands out in this table as having lost domestic markets to imports more rapidly than other countries through **1985**. Its producers must now take on the challenge of stemming this erosion and reclaiming a larger share of their domestic markets.

Table 19. Value added growth in tradables and non-tradables
Per cent *per annum*

	1960-1984 ¹		1980-1985 ²	
	Tradables	Non-tradables	Tradables	Non-tradables
United States	3.0	3.5	3.3	3.2
Japan	7.7	8.6	6.8	3.0
Germany	3.5	3.9	0.1	1.8
France	4.8	4.9	1.0	1.5
United Kingdom	1.3	2.4	1.7	3.3
Italy	4.9	4.4	-0.1	1.9
Canada	4.3	5.4	2.9	3.0

1. 1961-1980 for Canada.
2. 1980-1984 for Germany and France.

A third indicator of what structural changes might have accompanied the growth of the U.S. current-account deficit shows surprisingly little evidence of such changes. This is the relative growth of tradable and non-tradable value added in major countries, shown in Table 19. Tradables are defined here as goods less construction; non-tradables are market services plus construction. Non-market government services are excluded. The table shows no general skewing of relative growth rates in the **1980-84** period as compared with the twenty previous years. Only for Japan, where non-tradable growth slowed down much more than tradable growth, is there a strong correlation with current-account developments. These observations are based on a disaggregation that is too crude to draw firm conclusions. But it seems possible that the shifts in market shares in international manufacture trade, while large in relationship to that trade, do not loom so large in the context of overall production patterns, especially as differential market growth has also accounted for much of what has happened to current accounts. Thus, for example, the U.S. share in its own market for manufactures has eroded, but it has had a relatively rapidly growing market since **1980**.

Taken together, these indicators suggest that the main challenge of the future with respect to the evolution of trade and production patterns will be to reverse the relative market share developments in the early part of the decade. Productive

capacity will need to evolve in line with these requirements. But adjustment of the U.S. current-account deficit would not seem to require that tradables goods sectors shrink outside the United States. It will be necessary, however, for growth in the OECD area to be sustained if this is to be avoided. The demand expansion to sustain this growth will need to be stronger in Europe and Japan than it was in fact or than it was in the counterfactual history.

BIBLIOGRAPHY

- Bryant, Ralph C. and Gerald Holtham (1987), "The U.S. external deficit : diagnosis, prognosis and cure", *Brookings Discussion Papers in International Economics*, No. 55 (March).
- Chan-Lee, James H., David T. Coe and Menahem Prywes (1987), "Microeconomic changes and macroeconomic wage disinflation in the 1980s". *OECD Economic Studies*, No. 8 (Spring), pp. 121-157.
- Dean, Andrew and Val Koromzay (1987). "Current-account imbalances and adjustment mechanisms", *OECD Economic Studies*, No. 8 (Spring), pp. 7-34.
- Richardson, Pete (1987a), "Tracking the U.S. external deficit 1980-1985: experience with the OECD INTERLINK model", *OECD Economics and Statistics Department Working Paper*, No. 38 (February).
- Richardson, Pete (1987b), "Recent developments in OECD's international macroeconomic model", *OECD Economics and Statistics Department Working Paper*, No. 46 (June).
- Richardson, Pete (1987c), "A review of the simulation properties of OECD's INTERLINK model", *OECD Economics and Statistics Department Working Paper*, No. 47 (July).
- Richardson, Pete (1988), "The structure and simulation properties of OECD's INTERLINK model", *OECD Economic Studies* (this issue).
- Taylor, John B. (1987). "The U.S. trade deficit, saving-investment imbalance and macroeconomic policy: 1982-1987", paper presented to a conference on The U.S. Trade Deficit, Causes, Consequences and Cures at the Federal Reserve Bank of St. Louis, October 23 and 24, 1987 (forthcoming in a conference volume).