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Europe after the crash :
economic policy in an era of adjustment

by Charles Bean *

Internal paper

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The Directorate-General for Economic and Financial Affairs,
Commission of the European Communities,
200, rue de la Loi
1049 Brussels, Belgium

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# Europe after the crash : economic policy in an era of adjustment

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* London School of Economics

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# C O N T E N T S

# 1. INTRODUCTION

The worldwide stockmarket crash that took place on October 19th, 1987 threw financial markets into turmoil, brought to a head international disagreements about the appropriate direction of economic policies, and precipitated fears of a re-run of the Great Depression of the thirties. Coming on top of the already horrendously high unemployment levels within the European Community, a major downturn in activity at this juncture would have been disastrous. Fortunately economic indicators do not seem to suggest that economic activity has slowed markedly. However that does not imply all is well for imbalances remain in the world economy and the necessary adjustment process may yet provoke a major recession. This paper first of all looks at why the direct consequences of the crash seem to have been so mild, and then goes on to look at the continued need for policy adjustment and the prospects for avoiding a recession in the European Community.

To preview the conclusions, we argue that the stock market collapse probably did not signal any fundamental change in the prospects for the industrialised economies, but rather represented the ending of a speculative "bubble". As such its direct impact on activity could be expected to be quite small although increased uncertainty and perverse policy decisions could have led to a collapse in investment. It is becoming increasingly clear that there is unlikely to be a major recession in the United States in the immediate future, because monetary expansion and dollar depreciation have provided an offsetting stimulus to any deflationary effects of the crash and there is no sign of fiscal

retrenchment. By contrast, the European economies have been hit by a twin deflationary shock due in small part to the fall in equity prices and more particularly to the appreciation of their currencies against the dollar. However, the overall impact of this shock is really quite modest. The greatest danger at the present juncture is that the major European economies will pursue procyclical policies aimed at achieving given budget deficit and current account targets thus amplifying the original shock. In the medium-term some action will need to be taken to close the American budget deficit. However, a "scissoring" of fiscal policy, with a reduction of the American budget deficit and an increase elsewhere, will do very little to eliminate the present current account imbalances. A further real depreciation of the dollar is probably also required (imparting a further deflationary shock to the Community). For this reason Europe should not seek to stabilise exchange rates with the dollar, but allow it to drift downwards as required. At the same time depreciation of the European currencies against the Yen and the NICs is warranted to help limit the deterioration in competitiveness. European governments should also seek to offset the deflationary shock by increasing internally generated demand growth through the adoption of supply-friendly fiscal policies. Such fiscal measures would also allow governments to simultaneously attack their economies' structural problems.

The remainder of this section reviews the global economic situation, discusses the causes of the crash, and assesses its quantitative significance for demand. Section 2 discuses the medium-term adjustments in economic policies and real exchange rates that are necessary if a more satisfactory pattern of current accounts is to be established. Section 3 discusses policy options within Europe and the need for intra-European co-operation if recession is to be avoided. This section also discusses

the appropriate role of monetary and exchange rate policy. Section 4 concludes.

## 1.1 THE GLOBAL CONTEXT

Before discussing the causes and consequences of the stock market crash in detail, it is worth first summarising briefly the global economic situation in 1987. This was characterised by continued economic growth and falling unemployment in the United States, accompanied by a continuation of the large (federal) budget and current account deficits. The counterpart to these current account deficits was to be found primarily in Japan, West Germany and the Newly Industrialised Countries, especially Korea and Taiwan. Growth was steady in Japan but generally sluggish in the European Community where unemployment, with the exception of the United Kingdom, fell little. Real interest rates remained high and the debt problems of the developing countries continued to cause concern. However, after the marked decline of the dollar in 1986, exchange rates between the major currencies had generally remained fairly stable until the renewed downward plunge in the dollar at the end of the year.

These features are summarised in Tables 1 (budget deficits) and 2 (current accounts and exchange rates). Table 1 reports the general government budget surplus, as a percentage of GNP/GDP, together with the OECD's estimate of the cumulated change in the underlying structural budget surplus for each of the major countries. By stripping out the endogenous changes in taxes and transfers due to variations in the level of activity this provides a crude measure of the exogenous changes in the government's taxation and spending program. It should be emphasised, however, that this is not a good measure of fiscal impact, nor is there any reason for supposing that it should be stabilised over the cycle.[1] It simply provides

a crude summary of autonomous changes in fiscal policy which may themselves be a reaction to economic circumstances.

Also included in Table 1 is the private sector savings ratio. Two features are immediately worth noting. First, the focus on the United States Federal budget deficit is misplaced. State and local government have been running surpluses and the current level of the general government deficit is not, in fact, out of line with the OECD average. Rather the problem lies with the relatively low private savings rate in the United States coupled with the marked ***deterioration*** in the general government deficit (both actual and structural) since 1980. The consequent need to finance the gap between the demand for funds by the government, and by firms for investment, on the one hand, and the domestically generated supply of savings on the other has, in turn necessitated inflows of capital from abroad and, as a counterpart, a current account deficit.

This current account deficit (as a percentage of GNP/GDP), and the counterpart surpluses elsewhere in the world, appear in Table 2, along with associated effective exchange rates. It is apparent that the decline in the dollar in 1986 had very little effect on the size of the United States current account deficit in 1987 and recent statistics are only slightly more hopeful in this regard. We shall expand below on why further realignments of real exchange rates are required, as well as changes in fiscal policy in both the United States and the European Community, if a more satisfactory pattern of current accounts is to be achieved without a major disruption in activity.

Of course, the Louvre Accord, as well as signalling a commitment to stabilise exchange rates, also contained statements about intentions on fiscal policy. In particular the United States was expected to take steps to reduce its budget deficit while its trading partners, especially Japan

and West Germany were supposed to increase theirs. Although this could not, of itself lead to an immediate and significant reduction in trade imbalances it was hoped that the signal that fiscal rebalancing was underway would have beneficial expectational effects and stabilise the exchange markets. While the Accord contained no specific fiscal commitments, there was some action in Japan where the government announced a 6 trillion yen (about 1½ per cent of GNP) package of increased spending and reduced taxes, and also in Europe, with West Germany declaring its intention of bringing forward the 5 billion mark tax cut scheduled for 1990 to supplement those already scheduled in the second phase of the tax reform and the United Kingdom pressing ahead with already scheduled tax cuts. As the changes in the structural budget surplus appearing in Table 1 make clear, however, these movements in fiscal stance were relatively modest. Surprisingly the figures suggest a marked movement in a restrictive direction in 1987 in the United States, but this is misleading since the figures include certain non-recurring revenue effects from tax reform. Overall the picture is one of rather limited discretionary changes in fiscal policy in 1987.

It is instructive to record how this continuing gap between the demand for, and supply of, savings in the United States was met, because it has a bearing on the sustainability of the present global monetary and fiscal policy mix. Until 1986 optimistic expectations, interest and exchange rate developments, changing US attitudes to foreign investment, and a thirst for diversified US assets on the part of the major surplus countries of the Far East meant that the current account deficit was financed entirely by private capital flows. This was firstly through US banks, subsequently through securities, particularly Treasury and Eurobonds. Finally in the first half of 1987 direct investment in equities and real estate became a

major feature. However, in 1986 and especially in the first half of 1987 official financing played an important role. In 1986 official finance, primarily increased US liabilities to foreign monetary authorities rather than a rundown of holdings of foreign assets, covered around a quarter of the current account deficit. In the first half of 1987 this rose to nearly 40 per cent, reflecting massive official intervention during April to support the dollar under the Louvre Accord as private capital inflows dried up. It then fell back abruptly in the third quarter as private capital inflows resumed. However, these figures understate the role of official intervention in the financing of the current account deficit because investments by foreign central banks in the Eurodollar market will be recorded as private rather than official capital inflows. The counterpart of this intervention was an increase in the reserves of the surplus countries with official flows representing 70 per cent and 50 per cent of the current account surpluses in Japan and West Germany respectively in the first half of the year. Given central bank statements that G-10 countries had undertaken foreign exchange intervention of 70 billion dollars between January and May of 1987, it seems quite possible that intervention by the major central banks could be responsible for financing virtually all the United States current account deficit in the first part of the year.

On the face of it these reserve flows do not seem to have been sterilised[2] by the authorities since in Germany and Japan they resulted in growth in the monetary aggregates above the top of their target ranges. Thus by September 1987 broad money (M2 and CD's) in Japan was growing at an annual rate of around 14 per cent, compared to a target rate of 10 per cent, while in Germany the rate of growth of Central Bank Money was around 7½ per cent compared to a target range of 3-6 per cent. This provoked fears of a resurgence of inflation, perhaps justified in Japan, but

probably overstated in Germany for two reasons. First, growth there had been sluggish and there seemed little immediate danger of demand outstripping supply. Second, the process of disinflation could be expected to lead to an increase in the demand for real money balances and hence a fall in velocity. The unexpectedly rapid monetary growth therefore need not be associated with an acceleration in the rate of growth of nominal demand. In any case, the increasingly apparent conflict between domestic monetary objectives and the aim of stabilising exchange rates came to a head in September and early October as the dollar weakened in the face of continuing poor American trade figures. The Bundesbank maintained a firm stance on interest rates, raising money market rates slightly. At the same time the American administration were concerned that growth might be slackening and so were unwilling to see domestic interest rates rise further in defence of the dollar. The resulting public disagreement between the Secretary to the US Treasury, James Baker, and representatives of the Bundesbank signalled the final demise of the Louvre Accord and upset the already nervous financial markets.

As explained below, we believe the public disagreement over the direction of macroeconomic policies in general, and monetary policies in particular, may have been a proximate cause of the stock market crash but cannot explain the size of the fall. However, the experience does provide a simple but important lesson for future attempts to stablise exchange rates: namely that in a world of highly mobile capital exchange rate stabilisation can only be successful so long as governments are willing to pursue the necessary supporting fiscal and monetary policies. Although the Louvre Accord contained statements about the direction that fiscal policy should take in the major OECD economies, there were no explicit commitments and it is clear that governments still disagreed on where the primary

burden of action lay and/or were unwilling to take such action when it conflicted with the pursuit of domestic objectives. Thus in the face of continuing current account deficits in the United States and counterpart surpluses in Japan and Germany (as well as the NICs) and only limited fiscal action to redress these, monetary movements became the prime mechanism for equilibrating the world economy - as under a classical fixed rate system - leading to contractionary pressures in the United States and expansionary ones in the rest of the world. With the American government concerned about maintaining growth, and inflation remaining a major concern to policy-makers in Germany and Japan, the maintenance of a stable dollar ceased to be viable.

## 1.2 THE STOCK MARKET CRASH: FUNDAMENTALS OR BUBBLE?

The crash of 19th October 1987 at a stroke reduced the valuation of the world's stock of equity by around a quarter - a fall of roughly 1½ trillion dollars - with all markets experiencing falls of similar magnitude (see Table 3). However, the decline is less spectacular when looked at over a longer time frame. While the French and Italian stock markets were 30 per cent lower, and Germany 40 per cent lower, at the end of 1987 than at the beginning, the valuation of American and British equity was virtually unchanged over the whole year while the Japanese market was some 15 per cent higher. Overall world stock market valuation was still some ½ trillion dollars higher at the end of 1987 than at the beginning. What could have caused such violent fluctuations in such a short period of time? One view would suggest that these movements simply reflect the variation in underlying fundamentals - expectations of future profitability and discount rates. At the opposite extreme is the view, exemplified by the Reagan administration, that it was an unwarranted fluctuation largely unrelated to

economic events and greatly exacerbated by the operation of portfolio insurance schemes, programmed trading rules and a herd instinct amongst traders.

Is it reasonable to attribute the crash to fundamentals? Traditional finance theory suggests the real share price should simply equal the present value of the stream of real (after-tax) dividends, i.e. profits net of investment and borrowing. In that case a 25 per cent fall in the stock market could be triggered by either a ***permanent*** fall of 25 per cent in expected future dividends, or a ***permanent*** rise of 25 per cent in the interest rate used to discount these profits, or a suitable combination of the two. In the case of a rise in the discount rate, this could be due to either a rise in the rate of return on safe assets, or a rise in the risk premium on equity earnings.

The question of whether share prices accurately reflect fundamentals is still a matter of dispute. The fact that stock prices fluctuate widely while dividends vary very little seems to constitute a prima facie case against the fundamentalist viewpoint.[3] However, this is not incompatible with the fundamentalist view if the underlying process determining the market value of the company i.e. profits net of investment, is a sufficiently volatile series and managers deliberately smooth dividends by varying retained earnings/borrowing.[4] On balance the literature is probably not very favourable to the idea that stock prices are determined solely by fundamentals, but it cannot be dismissed out of hand. Instead we must see if the model can provide a plausible account of what actually happened.

The fundamentalist explanation of the volatility of equity prices and the simultaneous smoothness of dividends requires not only that the underlying profits-net-of-investment process is very volatile, but also

that fluctuations persist. (If shocks, however large, were purely temporary they could have only a very limited effect on the price because it is a weighted average of a whole stream of future net profits.) Whether this is indeed the case has been at the core of recent empirical debates. The idea that shocks to company fortunes may persist indefinitely seems reasonable at the level of the individual enterprise. After all some firms turn out to be successes and can continue to grow almost indefinitely while others end up as failures and disappear without trace - there is no reason to expect any necessary tendency to return to a common level of performance. However, it is much less plausible to assume such long-lived persistence at an economy-wide level where differences in individual performance wash out. Although the profit rate can show quite long-lasting deviations in response to changes in activity, historically the profit rate in most countries tends to revert over time to a fairly constant underlying level.[5] Consequently fluctuations in the profit rate cannot be truly permanent. Similarly, in the long run, the real interest rate also seems to revert to a roughly constant underlying level. It follows that it is extremely unlikely that a truly permanent downward assessment of future profitability or a truly permanent upward shift in real expected interest rates occurred. The required revisions in expected profits and interest rates in the near future would then need to be even larger than 25 per cent. Thus if we start from an initial stationary state with a real discount rate of 5 per cent per annum, and the downward revision in profits were expected to last for five years only, we would require a massive 115 per cent downward re-estimate of expected profits in that five years to rationalise a 25 per cent fall in the market value!

Is there any event which could rationalise a re-evaluation of economic prospects on such a scale? The public dispute over monetary policy was

important because it signalled the end of attempts to stabilise the dollar, but it is difficult to believe the *direct* effect on fundamentals of the implied change in monetary policies could of themselves justify such an enormous re-evaluation of economic prospects.[6] Other events both economic - such as continuing poor American trade figures - and political - such as increasing tension in the Gulf - may also have increased pessimism and uncertainty in the financial markets. However, many of these events were specific to the United States and if the crash were due to a downward revision of profit expectations one is led to ask why the stock markets of other countries were affected to a similar or greater degree. Contrarily if the crash were primarily due to an upward revision in interest rate expectations this should have been reflected in lower bond prices, but this was not generally the case. An increase in the risk premium on equity earnings is a possibility, and the price of Chicago put options in the Standard and Poor index - which provides an indication of the market's assessment of risk - had been moving upwards immediately prior to the crash.[7] However,the required increase in the risk premium is enormous and again it is not clear why all of the world's stock markets should have been affected equally.

Furthermore, timing is a problem. Although there had been some downward drift in American share prices in the week ending 16th October, there was no major economic "news" occurring over the weekend prior to 19th October. One would have expected instead a gradual drift downwards of the market as successive bits of new information were gradually discounted into the market price.

This is supported by evidence from a survey of nearly a thousand individual and institutional investors in the United States carried out in the wake of the crash by Robert Shiller,[8] which indicates that no news

story or rumor appearing on or immediately before 19th October was responsible for behaviour that day. Instead market psychology seems to have played a crucial role with most investors believing the market was overpriced prior to the crash, but still continuing to buy stocks in the belief they could out guess the market in predicting when the collapse would come.

Finally, as Figure 1 shows, equity prices in the United States, Japan and the United Kingdom, at least, had been growing especially rapidly since about the middle of 1986, and far outstripping bond prices. In Germany and France where the stock market had been fairly stagnant since the start of 1987, one would probably have expected to see significant falls as growth turned out lower than was generally expected. To explain the stock market crash in terms of fundamentals alone one needs not only to identify the reasons for the crash itself, but *also* explain why the market had been so buoyant in the preceeding months and how an increasingly optimistic outlook on company profitability could evaporate so quickly, or how decreasing uncertainty and a falling risk premium on equity earnings could suddenly reverse. Consequently it seems inconceivable that the movements of the world stock markets in the last year or two can be explained entirely by movements in fundamentals. In the light of Shiller's survey evidence a better explanation is simply that the crash was the bursting of a "bubble".

Does this imply that markets are necessarily inefficient[9] or irrational? The answer is no. For instance between the beginning of 1987 and 19th October the rate of interest on Treasury bonds averaged 6 per cent. Over the same period the dividend yield on Standard and Poor index stocks averaged just under 3 per cent, while the index itself rose at an annualised rate of nearly 50 per cent, implying an excess total return on equities of 47 per cent per annum. However, if market operators believe

there is a possibility that the market may crash the ex ante expected return will be much less. Even if they are completely indifferent to risk, they may still be willing to hold Treasury bonds even though in the run-up of the market before the bubble bursts the total return on equities vastly exceeds that on Treasury bonds. For instance suppose we date the start of the bubble as the beginning of 1987 and assume that the rate of capital gains, conditional on the bubble continuing, was correctly foreseen. Let us also assume that investors believed that in the event of the bubble bursting it would revert to its end-1986 level. Then one only needs a probability of the market collapsing within a month of 30 per cent to rationalise the sort of figures just discussed (the figure would be even lower if risk were allowed for).[10] Given the amount of discussion in the financial press in 1987 on how long the bull market could go on, such a number does not seem at all implausible.

This view of the crash does not rule out an important trigger role for economic (and political) variables, for there is no reason why the collapse of the bubble need be a purely exogenous event. In general such a "rational bubble" i.e. one in which large excess returns are offset by the possibility of a very large loss, can be conditioned on a whole range of factors, including those which also affect the fundamental value of the asset.[11] In such a case the market can therefore give the appearance of overreacting to bits of news that imply only a small change in fundamentals. Thus even though the public disagreement between the American administration and the Bundesbank cannot possibly justify a reassessment of underlying fundamentals of 25 per cent or more, it may well have played an important role, along with other factors such as the American trade deficit, in triggering the crash.

It should, however, be acknowledged that there are some apparent inconsistencies in the view that the crash was simply the ending of a rational speculative bubble. Firstly the fact that the French and German stock markets suffered more than the United States, the market that seemed most obviously overvalued, is problematic. Even given the fact that one would probably have expected to see French and German equity prices falling during the first nine months of 1987 in response to slower than expected growth in those economies, it seems difficult to sustain the argument that by the end of September they were just as overvalued, relative to fundamentals, as the American market. Thus it seems that one probably needs to introduce "contagion" stories[12] to explain the close linkages between different financial centres as well as the speed of the fall. However the precise nature of the transmission mechanism between markets, and the role of programmed selling arrangements which led to many financial institutions simultaneously placing large block sell orders, while no doubt important from a regulatory viewpoint, is of secondary interest in establishing the ultimate causes of the crash. For it is difficult to believe that these were the ***prime movers*** behind events, and that the crash was simply an aberration on the part of operators in financial markets. If that were the case one would have expected the market to have quickly recovered as speculators moved in to pick up stocks at bargain prices. Although there was some evidence of this in the weeks following the crash, it has not occurred on anything like the scale one would have expected if equities were subsequently priced substantially below their fundamental value.

A second difficulty is that the growing likelihood of a very large capital loss in the run-up to the crash should have manifested itself in the price of put options. Except immediately before 19th October this did

not seem to be the case. The most likely rationalisation here is that investors worried about the risk of a crash turned to portfolio insurance schemes rather than the option market as a way of insuring themselves. The problem, of course, with this strategy is that while this is rational for an individual, portfolio insurance schemes cannot work for the market as a whole because the risk is non-diversifiable. It seems that otherwise rational market investors may have made a fallacy-of-composition error in assuming this strategy would still work even if pursued by other investors.

## 1.3 THE CONSEQUENCES OF THE CRASH

The two direct channels through which a revaluation of wealth affects the economy are via consumption and investment (and indirectly as these same mechanisms affect export demand). The first of these, through the so-called wealth effect, received most attention in the immediate aftermath of the crash. If households accumulate wealth to finance their retirement, to bequeath to their children, or simply for a rainy day, then a reduction in wealth will lead them to increase savings in order to rebuild their stock of assets. Under the pure life-cycle permanent-income view of consumption the fall in expenditure should be simply the fall in wealth times the real (long) rate of interest, i.e. the amount by which the indefinitely sustainable level of consumption has fallen. With a global 1½ trillion dollar fall in stock market wealth, this implies a fall in consumers expenditure of 30-45 billion dollars worldwide. In the United States and Japan, the same calculus implies a direct (i.e. ignoring multiplier effects) fall in consumers' expenditure of around ¼-½ per cent of GNP. In the United Kingdom the figure is rather larger at ½-1 per cent of GNP, while in France, Germany and Italy with their relatively smaller stock markets it is a meagre ⅛-¼ per cent of GNP. These figures could

understate the size of the wealth effect in so far as consumers have a shorter time horizon than envisaged in the basic life-cycle permanent income consumption model or suffer liquidity or capital market constraints. On the other hand only in the United States are there extensive direct individual equity holdings. In the other countries much of the equity capital is held indirectly via pension funds and the like. This is likely to attenuate the size of the effects on consumption and/or produce a rather delayed response in these countries. So overall the numbers seem of the right order of magnitude. These effects, which after allowing for multiplier effects are of the same order as those put forward by the IMF and the OECD in their assessments of the quantitative significance of the crash, although not completely insignificant, are generally rather small beer.

It might be thought that if the diagnosis of the crash as the ending of a speculative bubble is correct, then realising the capital gain might only be temporary, consumers would not have increased their spending before the crash, nor reduced it afterwards. This argument is not strictly correct because individual equity holders always had the option of switching to less risky assets prior to the crash and so ensuring the capital gains they had experienced previously were not reversed. Put differently the continued growth in equity prices during the first nine months of 1987 represented a succession of pieces of good news with the possibility of future bad news (a crash) being offset by the possibility of continued pieces of good news (further prices rises). However, it is quite possible that some of those consumers who hold equities are not as calculating as this, in which case the argument may have some force, attenuating the wealth effects further.

It is becoming increasingly clear through 1988 that indeed consumption does not seem to have faltered in the United States or elsewhere. One way to assess the size of the wealth effect on consumption would be to compare the outturn, with the levels of consumption predicted by an econometric model of the consumption function. Here, however, we rely on a simpler and more straightforward approach. The life-cycle permanent income consumption model predicts that households smooth consumption in the face of temporary income fluctuations, etc. More particularly, if households are forward-looking in forming their expectations of future income the best predictor of future consumption will be, roughly speaking, today's consumption,[13] and changes in consumption will solely be the result of news about income prospects, wealth, etc. Thus under the life-cycle permanent income model, one would have expected to see a fall in the growth rate of consumption in the period after the crash and, for those countries like the United States who experienced a bull market, above average growth in the first nine months of 1987.

Figure 2 presents a plot of recent data on the monthly growth rate of consumption in the United States (where the largest wealth effects are likely to be found). To facilitate interpretation a 6-month moving average is also plotted. As can be seen there is a period of slightly above average growth during the first part of 1987, and a negative spike just after the crash, but the size of the adjustments to the consumption path are if anything smaller than suggested above, indicating that if anything the illustrative calculations overstate the quantitative importance of the wealth effect.

The likely impact on investment by contrast does depend heavily on the reason for the fall in the stock market. If the fall was due to an adverse movement in fundamentals - a reduction in the profitability of investment

or an increase in expected real interest rates - then a sympathetic fall in investment can be expected. However, empirical implementation of the "Q" model of investment which links capital formation directly to the real stock price have generally not been especially successful, there being usually an important additional explanatory role for output. Although this can be rationalised by allowing for imperfect competition in goods markets, it is fair to say that economists' understanding of the forces driving investment is still at a fairly rudimentary level and one must rely on a more empiricist approach. Studies in this tradition[14] generally introduce demand and profitability/cost of capital variables into investment functions in a more or less ad hoc fashion which makes them rather unsuitable for quantifying the effects of the crash on investment.

However, we have argued that the crash is best understood as the collapse of a bubble. If this diagnosis is correct then the link between the stock price and investment that underlies the "Q" model is severed, because the role of the stock price in the theory is simply to proxy the unobservable present discounted value of future (net) profits. If the stock price no longer accurately reflects fundamentals, then it no longer reflects the marginal efficiency of investment either.[15] Indeed, one is tempted to suggest that if the underlying fundamentals have not changed, there is no reason why investment should be adversely affected at all. Things are not quite so simple because the fall in the stock market has, of course, raised the cost of equity finance, relative to pre-crash levels. Unfortunately, our understanding of the determinants of the financial structure of firms is even less good than our understanding of investment behaviour! If equity capital is the marginal source of finance for investment some adverse effect might be anticipated. On the other hand, if debt finance is the marginal source of finance, as some have suggested,

then there should be no effect (assuming the required return on debt finance remains unchanged of course).[16] It is difficult to know, therefore, how big such a cost-of-capital effect might be, but in view of the difficulty in isolating any link from the cost of capital to investment empirically, it seems likely to be very small.

The greatest danger as far as investment is concerned is that increased uncertainty about economic developments - and particularly about policy reactions - will lead to managers postponing or even cancelling investment projects that they would otherwise have undertaken. In the absence of countervailing policy action, such a fall in investment due to increased uncertainty could well become a self-fulfilling prophecy, with the resulting reduction in demand leading to a recession, and reduced profitability justifying ex post the original postponement or cancellation of the investment. Thus while the direct effect of the crash on investment through the cost of capital is likely to have been modest, there was a danger that a more pessimistic and bearish outlook amongst managers could have led to a collapse in investment.

Fortunately, such a collapse does not seem to have materialised so far. Rather than focussing on the latest data on investment expenditures as we did with consumption, given the lags between the decision to invest and the actual realisation of these plans, it is more informative to look at the latest survey evidence on businessman's intentions. Unfortunately, results of the March/April survey of investment intentions in the Community are not available at the time of writing, but a good guide in its absence is provided by the industrial confidence indicator constructed by the European Commission from monthly industrial trends surveys. As Table 4 makes clear, this does not seem to have been significantly dented by the crash.

However, there is still considerable uncertainty about economic developments in the medium-term, and the robustness of the world economy in the wake of the crash has led to a worrying degree of complacency amongst the world's leaders. As we discuss below, there is still the possibility of a major recession, especially in Europe, around the corner and fears of this may yet provoke a collapse in investment, despite the prospects afforded by the completion of the internal market in 1992. Such a collapse is much less likely if firms can be confident that the demand for their products will be sustained. An investment collapse is therefore less probable if governments commit themselves to maintaining (nominal) demand in the face of adverse shocks.

## 1.4 A COMPARISON WITH THE THIRTIES

If the direct effects of a stock market crash are so modest, one is naturally led to ask: Why did the stock market crash of 1929 apparently have such a disastrous impact on the United States and world economies? An in-depth study of the Great Depression would be inappropriate here. However, a crucial ingredient was the extent to which economic policies moved in a perverse direction. Thus in the immediate aftermath of the crash of 1929 the Federal Reserve, rather than responding to the increased demand for liquidity, instead tightened monetary policy resulting in a massive contraction in the money supply and a wave of bankruptcies.[17] Fortunately the lessons of this experience seemed to have been learned and all central banks responded to the crash of 1987 by lowering interest rates, even in Germany where fears of excessive money growth were greatest. The possible collapse of any major financial institution and the sparking off of a run on the banks seems to have been successfully avoided.[18]

Moreover, not only monetary, but fiscal and trade policies moved in a perverse direction during the early thirties. There was a widespread move towards balanced budgets which augmented the deflationary impulses set in train by the monetary contraction. Finally in response to the Hawley-Smoot tariff in the United States and growing unemployment there was a widespread adoption of protectionist measures. While such beggar-my-neighbour policies might prevent unemployment rising in a single country, they are clearly self-defeating if pursued by all, and the result was a fall of 30 per cent in world trade between 1929 and 1932. ***While the monetary mistakes of the Thirties have been avoided, the unwitting adoption of similarly perverse fiscal and trade policies represents the greatest threat to the world and European economies in the next few years.***

## 2. ADJUSTMENT IN THE MEDIUM TERM: WHERE DO WE WANT TO GET TO?

### 2.1 FISCAL POLICY

We next consider what direction economic - particularly fiscal policies - need to move in the medium term. As noted above, the United States general government deficit is now not very different from the OECD average. Further the primary balance i.e. excluding net debt service, is expected to be roughly zero for the next two years (see e.g. OECD, ***Economic Outlook***, December 1987). As a consequence the growth of the net debt-income ratio should slacken significantly. Indeed, so long as the current gap of around 2 per cent between the real interest rate and the rate of growth of United States output does not widen the current net debt-income ratio of 30 per cent could be sustained indefinitely with a further fall in the general government deficit of only ½ per cent of GNP.[19] Does this stabilisation of the United States debt-income ratio imply that no further fiscal adjustment on the part of the United States is required? The answer is "No" on two counts.

First, so long as the private savings rate remains so low in the United States a satisfactory rate of growth and capital accumulation can only be sustained by a continuing inflow of funds from abroad, and the associated accumulation of foreign debt. This could rise to as much as 35 per cent of United States GNP by 1995.[20] This seems unlikely to be a viable option as the growing risk of de facto debt repudiation through exchange rate depreciation will lead foreign investors to require a greater risk premium on dollar-denominated debt, or else that the United States authorities issue increasing quantities of debt denominated in other currencies. Even if this course of action were economically feasible it would not seem to be possible in domestic political terms for the United States to be so heavily dependent on foreign investors.

Second, even if this scenario were achievable it does not seem particularly desirable on normative grounds that the most capital-rich country in the world should be importing yet more capital from the rest of the world. Rather capital should flow from the industrialised countries to the developing countries where the rewards to investment ought to be greatest. Of course, political instability, economic mismanagement, and similar considerations often reduce the attractiveness of foreign investment in many developing countries. Further, at the present time the juxtaposition of a heavy existing debt burden, continued high real interest rates and generally sluggish growth in the demand for their exports make private investment in the developing countries especially unattractive. Nevertheless, the conclusion still stands that in the medium term a reduction in the absorption of savings by the United States and an increase in the flow of capital to developing countries is desirable. Consequently one would like to see the industrialised countries as a whole running a current account surplus in order to finance these capital flows. It should, of course, be emphasised that this pattern of current accounts and capital flows is merely an ***equilibrium*** characteristic and does not of itself justify measures to contract activity in the developed countries in order to improve (or maintain) their current accounts - that would reduce the demand for the produce of the developing countries and just exacerbate matters.

It is clear, therefore, that in the medium term a reduction in the United States budget deficit is both desirable and necessary. One is naturally led to ask what other changes will be necessary? In particular will a fiscal contraction in the United States also eliminate, or at least very significantly reduce, the United States current account deficit? Given the coincidence of the rise in both the budget and current account

deficits and their approximately similar magnitudes it is tempting to say that the elimination of the budget deficit would by itself be sufficient to restore current account equilibrium. This is a rather "New Cambridge" view that might have some truth for a small, very open, internationally highly integrated economy such as Luxembourg. It is most definitely incorrect for a country such as the United States. For, as emphasised in the CEPS Macroeconomic Policy Group's latest report,[21] the trade linkages between the United States and the other industrialised countries, including Europe, are still fairly small with the major international linkages coming through the financial markets. Thus the share of imports in United States output is still, despite the recent surge, only around 10 per cent. Empirical import equations usually produce marginal propensities to import of around 1½. Thus the direct effect of a cut in government spending or an increase in taxes could be expected to impinge primarily on domestically produced rather than foreign goods. A cut of 100 billion dollars in the budget deficit might therefore lead to an initial improvement of the current account of a mere 15-20 billion dollars (after allowing for multiplier effects). This could understate the impact of a fiscal contraction on the United States trade balance to the extent that output in the United States is predominantly supply rather than demand-determined. In that case the resources released by the fall in domestic expenditures would flow into exports or import-substitution. However, the effect is likely to be considerably less than one for one even near full employment.

Simulations with macroeconometric models support this figuring. A recent Brookings study[22] reported the results of a number of standard simulations on the leading econometric models of the international economy. These suggest that at the current time a 100 billion dollar fiscal contraction in the United States would produce a fall in the trade deficit

of around 20 billion dollars in the second year (the OECD's model is something of an outlier in suggesting a figure nearer 30 billion dollars).

A corollary of this is that ***increased growth in Europe (or elsewhere) can do very little to solve the problem of the United States current account deficit***, for the required increase in demand would be of the order of a trillion dollars! While there may be underutilisation of resources in Europe today, especially labour, there is no possibility of non-inflationary growth on this scale.

The great paradox of the present world economic situation is that while public debate focusses on the need for the Japanese and Europeans - especially Germany - to undertake expansionary fiscal action to stimulate their economies, this will do very little to solve the global imbalances in trade. Yet at the same time, as laid out in the Commission's own strategy for growth, European self-interest argues for exactly this sort of supply-friendly fiscal action. Given the inability of fiscal changes alone to solve the problem it is therefore clear that other adjustments and mechanisms - in particular through the real exchange rate - will be required.

## 2.2 HAS THE DOLLAR FALLEN ENOUGH?

As Figure 3 shows, the dollar real exchange rate is now nearly back to 1979 levels, a period when the United States current account was approximately in balance. An obvious question is whether the real depreciation that has occurred since the dollar peaked in 1986 will, ***if maintained***, be sufficient to restore a sustainable current account position in due course. By sustainable we mean a position in which the net foreign debt-national income ratio is stabilised. There are a number of reasons for thinking that some further real depreciation may be required.

First, output growth in the United States since 1979 has averaged 2.6 per cent, faster than the 2.3 per cent achieved in the rest of the OECD and much faster than the meagre 1.7 per cent achieved in the Community. This differential growth means that the domestic market has grown faster than export markets which would naturally tend to worsen the current account at a given real exchange rate. However, given the relatively low marginal propensities of the United States to import from the rest of the OECD and vice versa, the effect on the current account is rather small - around 10 billion dollars or a ¼ per cent of GNP.

Second, since the beginning of the decade the net foreign asset position of the United States has worsened by more than ½ trillion dollars. Meeting the interest payments on this debt will require running a trade surplus. However, the effect is not that large because all that is required to stabilise the foreign debt-national income ratio is that the United States run a trade surplus sufficient to meet ***real, growth-corrected*** interest payments. With a real interest rate of, say, 4 per cent and a growth rate of 2 per cent the required improvement in the trade balance (relative to 1979) is only 10 billion dollars or something like a ¼ per cent of GNP. Even if the aim was to pay off the accumulated debt, the required improvement in the trade account need not be much larger provided the adjustment took place within a reasonably long time period.

A more serious issue relates to the effect of movements in the real exchange rate on trade volumes. The J-curve phenomenon whereby an exchange depreciation produces an initial deterioration in the trade account as relative prices move in advance of the response of trade volumes to changes in relative prices has long been a bugbear of forecasters and policy makers, and it may well be that some of the persistence of the United States current account deficit in the face of the 30 per cent real

depreciation (measured in terms of relative unit labour costs) of the last two years simply reflects the slow working out of these lags. (The recent, better than expected, United States trade figures were hopeful in this regard, but it is easy to read too much into the figures for a particular month.) However, it is likely that the stubborness of the trade deficit may reflect something more fundamental, namely "hysteresis" - or state dependence - in traded goods markets.

Hysteresis could arise in trade performance for a number of reasons. First, consumers having sampled a particular product are likely to develop loyalty to that brand, especially if the quality of competing brands is unknown (this sort of process seems to apply particularly well to automobiles). Thus it might take a very large movement in relative prices to encourage the consumer to switch from one (a domestically produced) brand to another (a foreign one) in the first place, but a simple return of relative prices to the status quo ante may not be sufficient to force the consumer to return to the original brand. Instead a period of considerable underpricing of the original brand may be required. A similar argument can be developed when consumers experience considerable costs in switching between suppliers - again there may be a "locking-in" effect (this would be relevant to, say, computers).

However, the channel that has gained most attention emanates from the supply rather than demand side of the market.[23] There are usually very substantial fixed costs in entering a market in the form of setting up distribution networks, advertising campaigns to announce the product, etc. A firm will only enter a market and incur these costs if the present value of the expected future profits covers these fixed costs. However, once these costs have been incurred a firm will stay in the market provided the present value of the expected future profits is positive, not that they

exceed the fixed costs.[24] Thus it may take a large deterioration in profitability to persuade a company to quit a market, but it will not be sufficient for profitability merely to be restored for the company to re-enter - there will actually have to have been a period when profitability is extremely high to justify incurring the entry costs.

The moral is that small movements in real exchange rates may have relatively minor effects on the structure of trade, but large, sustained although nevertheless temporary, movements can have major and relatively permanent effects. Thus in the last decade European and (especially) Far Eastern producers have, in the face of the sustained overvaluation of the dollar, been keen to enter the United States domestic market, while American producers have similarly been willing to undertake the substantial costs of relocating production abroad to take advantage of the large gap that was opened up in relative unit labour costs. The unwinding of the overvaluation will not necessarily be sufficient to reverse these structural changes, and a corresponding period of sustained undervaluation of the dollar may be required.

It might be thought that, although fixed costs of entry may be significant, they cannot be that large. There is, however, another and yet more subtle channel through which hysteresis effects might arise.[25] This stems from the uncertainty engendered by volatility of the exchange rate which may encourage firms to take a wait-and-see attitude. The point is that even if it is currently unprofitable to produce in a market if there is a *possibility* that it may become profitable in the future it may be worth staying in. The choice is not merely between being in a market or out of it but also between entering (exiting) today rather than entering (exiting) tomorrow. Essentially a firm that is not now producing owns an *option* for entering in the future and a firm that is producing owns an

*option* for exiting. The implicit cost of exercising these options adds an additional invisible cost to the visible fixed costs of entry.

Empirical support for the thesis of hysteresis comes from the recent behaviour of United States import prices. As Figure 3 demonstrates, exporters to the United States have preferred to fix their dollar price, cut profit margins and maintain volumes in the face of the dollar depreciation. As a consequence trade volumes and the current account have been much slower to respond to the fall in the dollar than might have been expected, and consquently a further fall in the real value of the dollar may well be required.[26] How big that further fall needs to be is unfortunately impossible to quantify since past experience as embodied in econometric trade equations is no longer a good guide to the future but numbers like 10-20 per cent seem to be in the right ball park.

## 2.3 THE ROLE OF THE NICs

So far the discussion has concentrated on the United States on one hand, and Europe and Japan on the other. Yet this ignores other major players in the world economy. Aside from the developing countries, who ought to be running current account deficits but are not currently in a position to, the Newly Industrialised Countries also have a role to play in picking up some of the present American trade deficit. In 1987 the Asian NICs ran a collective surplus of 30 billion dollars (more than 10 per cent of their GNP). As Table 5 shows most of this was concentrated in Taiwan. Korea has also been running a significant surplus, but this is a comparatively recent phenonenon, and indeed Korea suffered from external debt problems during the early eighties. The Taiwanese surplus is, by contrast, more persistent.

(5)

Overall the Asian NICs have exhibited a meteoric increase in their share of the world manufactured trade from a little over 4 per cent in 1975 to around 10 per cent in 1987 - nearly as high as Japan's share. Much of this growth has been directed at the American market especially in the eighties as producers benefitted from the overvaluation of the dollar. Overall the United States has experienced an adverse shift of 60 billion dollars in trade in manufactures with these countries since 1980.

There is no good reason for Taiwan or any other of these countries to be capital exporters, especially since their past capital growth has been domestically financed and so trade surpluses are not necessary to finance interest payments on foreign debt. Rather these countries will need to increase domestic absorption. Both Taiwan and Korea have started removing restrictions on imports. However import growth alone will be insufficient, and real exchange rate adjustment is also required. As Table 6 demonstrates, however, there has been very little sign of any real appreciation of the Taiwanese dollar since 1985 and in nominal terms these currencies have only risen 15 per cent against the dollar since the start of 1986 as opposed to the 35 per cent appreciation experienced by the rest of the OECD.

An obvious question in the light of this is whether further real depreciation of the dollar against the European currencies is called for, or whether an appreciation of the Yen and the NICs alone will be sufficient. The answer would seem to be that the European currencies need to appreciate against the dollar but depreciate against the Far Eastern currencies. As already noted the Far East producers in particular took advantage of the dollar overvaluation, resulting in a semi-permanent shift in the structure of trade between the two blocs. However increased growth in the Far East bloc and/or a real appreciation of their currencies is not

likely to particularly benefit American suppliers. Consequently restoring equilibrium in world current accounts will require that the United States exports more to, or imports less from, Europe. Hence the suggestion that further real depreciation of the dollar against the European currencies is warranted. At the same time real depreciation of the European currencies against Japan and the NICs should partly offset the resulting loss in European competitiveness vis-a-vis American producers. Given the sluggishness with which prices tend to respond to quantity signals, there are good reasons why the required changes in relative prices are best brought about relatively painlessly through nominal exchange rate movements rather than relying on recession or inflation to generate domestic price adjustment.

To summarise this section, action to reduce the imbalance between the budget deficit and the private savings rate in the United States is required to lower real interest rates and free capital for other uses, particularly in the developing countries. However, this will do little to solve the United States current account problem and faster growth by the rest of the OECD, including the Community, will do little to help. Real exchange rate adjustments are also called for, and it is likely that recent movements in real exchange rates, large as they are, may turn out to be insufficient and some further real depreciation of the dollar against the European currencies as well as against the Yen and the NICs will be required.

## 3. THE SHORT-TERM OUTLOOK

Sections 1.2–1.3 argued that the stock market crash was primarily an epiphenomenon whose direct effect on activity would be fairly limited provided that policy-makers did not repeat the mistakes of the thirties. Indeed it could have turned out to be quite a fortuitous event if it triggered the necessary, but much delayed, adjustment in fiscal and monetary policies. However, the very fact that the world economy did not collapse as some had feared also runs the danger of engendering a complacency that all is well.

The immediate concern after the crash was that the United States would lead the rest of the world into recession, but this was always unlikely in an election year. Some slackening of the growth rate was certainly to be expected as firms approach capacity working and labour shortages start appearing, but there was no reason for a recession to develop so long as nominal demand continued to grow steadily. While the need for action to reduce the United States budget deficit is recognised almost universally, Congress and the Administration have shown themselves unwilling or unable to act decisively, and it was clear that no significant contraction in fiscal policy could take place until a new President was installed in the White House. The fiscal adjustment of $76 billion over two years agreed earlier this year, containing largely creative accounting exercises, such as asset sales, but no significant increases in taxes scarcely represented a serious move in the required direction.

Of course there was still the relatively small deflationary impulse coming from reduced consumption and investment, but this seems to have been more than adequately offset by the monetary expansion engineered by the Federal Reserve, which went beyond that necessary to maintain the liquidity

of the financial markets in the wake of the crash. The result has been a fall in short-term real interest rates (see Table 9) and a further dollar depreciation which has helped to sustain investment and ensure that net exports expanded to fill any gap in demand left by reduced consumption.

The political calculus dictates that the most propitious time for a President to make inroads into the United States budget deficit is in the early part of his presidency. Thus if there is to be action on the deficit it is likely to start in the first half of 1989. Of course, swingeing cuts in the deficit would also be undesirable because attempts to eliminate the deficit at a stroke by cutting spending or raising taxes almost certainly would throw the United States economy into a deep recession, even if monetary policy were simultaneously relaxed. The ideal would be a pre-announced steady year-by-year reduction in the deficit (such as embodied in the British Medium Term Financial Strategy) accompanied by some monetary expansion as required. The beneficial expectational effects of such a strategy on long interest rates would probably help significantly to cushion the adverse effects of the cuts themselves. The desire to avoid a recession at this time means that some monetary relaxation is likely and consequently the dollar will come under downward pressure next year.

Of course, it is possible that the new president will not take immediate steps to close the budget deficit. But in that case the financial markets are likely to start demanding an ever higher rate of return on American government debt or else lending to the government may even dry up completely, thus forcing the authorities to take action. The adverse shift in the net supply of foreign assets will again be associated with downward pressure on the exchange rate. Some monetary tightening would be likely in order to defend the dollar, but fear of provoking a

domestic recession will also be an important factor working in the other direction, especially if the current account deficit is still there.

As far as Europe is concerned in 1988 there has been some modest deflationary stimulus coming from the domestic effects of the stock market crash on consumption and investment, worth perhaps a ¼ per cent of GNP. In addition to this domestic demand shock there is a further negative demand shock coming from abroad as a result of the increased competitive pressure due to the post-crash depreciation of the dollar, worth perhaps another ¼ per cent of GNP.[27] But next year there is likely to be an additional deflationary stimulus coming from abroad as either United States growth slows in the face of fiscal tightening, or, more likely, the dollar depreciates as a result of sympathetic monetary loosening by the Federal Reserve. Against these adverse movements in competitiveness must be weighed any beneficial effects on the terms of trade and thence onto the wedge between producer and consumer prices. However, the beneficial effects on the supply-side are likely to be relatively muted because empirical evidence[28] suggests that the dollar price of raw materials responds to movements in the dollar with an elasticity of close to unity. Thus the ECU price of raw materials is likely to be relatively unaffected by the dollar depreciation. Since the share of American goods in the European consumers' basket is also very small the total effect of the dollar depreciation on the wedge will also be extremely small. Against this background what policy options are open to the Community?

## 3.1 THE IMPORTANCE OF EUROPEAN CO-OPERATION

The most recent report[29] of the CEPS macroeconomic group emphasised the very limited role for (fiscal) policy co-ordination amongst the major trading blocks because of the relatively small trade linkages, but argued

that a co-operative approach within the Community greatly enhanced the effectiveness of a two-handed strategy of fiscal expansion aimed at stimulating supply at the same time as demand was increased. Left to themselves member countries might not find it attractive to pursue such a strategy, or else not to pursue it with such vigour, because of the associated worsening of their external positions. Co-ordinated expansion, by relaxing the external constraint, would increase the incentive for member countries to expand, to the benefit of all. At the present juncture uncoordinated policy makers, coupled with an excessive regard to budgetary and current account positions, runs the risk of converting a relatively small adverse shock into a much larger final effect on demand and activity. (Readers familiar with the argument can skip to Section 3.2).

3.1.1 An Illustrative Exercise

To see how this might happen suppose there are just three countries in the world: France; Germany; and the United States. Trade flows between France and Germany (Europe) on the one hand and the United States on the other are small with a very small European (American) marginal propensity to import American (European) goods. However, trade links within Europe are large with a rather high marginal propensity in France (Germany) to import German (French) goods. To make matters concrete, let us assume that of an additional 100 dollars of spending in the United States 5 dollars goes on French goods and 5 dollars on German goods. Similarly, of an extra 100 ECUs of spending in France (or Germany), only 5 ECUs goes on American goods. By contrast each extra 100 ECUs of spending in France increases imports from Germany by 30 ECUs and vice versa (for some actual data on the composition of trade flows between the major countries see Table 7). Let us also assume that the monetary authorities maintain the (nominal) exchange rate, that financial markets are highly integrated, and that

variations in European activity and fiscal position have only a small effect on the level of interest rates. Also assume that falls in demand are translated into falls in activity rather than a decline in domestic prices which is probably appropriate in at least the short run. Finally, assume that an increase in (post-tax) incomes of 100 ECUs produces a rise in consumption of 80 ECUs, while the rate of income tax is 30 per cent.

Now consider what happens if there is an exogenous fall in demand in France and Germany of ½ per cent of their GDP due in equal measure to, say, a decline in consumption and a fall in exports to the United States. Then the reduction in demand reduces incomes and consumption in each country as well as imports from the other. This reduction in exports from France to Germany and vice versa results in further falls in activity in each country and so on. Because there is minimal leakage of the reduction in demand back onto American exports, the European economy functions very like a closed economy and the overall reduction in activity will be roughly twice the original deflationary stimulus, or around 1 per cent of GDP (see Appendix for details of these calculations). This multiplier of two also measures the effectiveness - in the sense of "bang per ECU" - of any co-ordinated countercyclical fiscal expansion.

However, if policy-makers in each European country act in isolation they will ignore the beneficial effects on activity and welfare in their partner. (Note that this is *not* the same as saying their ignore the international repercussions of their decisions, rather they simply ignore effects on foreign activity in evaluating the benefits of fiscal expansion.) In the present example they will evaluate the "bang per ECU" for unilateral fiscal expansion at around one and a half. For a given cost of fiscal action, e.g. in terms of the future debt burden, both countries will therefore be inclined to reflate too little in response to the

deflationary shock. This is, of course, the standard argument for co-ordination in policy-making - that it internalises (non-pecuniary) externalities that are otherwise ignored - which was analysed at length in the group's last report.

Now suppose Germany and France in the face of the ¼ per cent GDP deterioration in their current accounts[30] respond by cutting back on demand in order to restore the status quo ante. Since 35 out of every extra 100 ECUs of spending leaks abroad it would look to each country acting on its own as though a ¾ per cent reduction in domestic demand would be called for. However, the cut in demand in France exacerbates the current account position in Germany and vice versa. Given that only 5 of those 35 ECUs leaks abroad to the United States, a massive 5 per cent reduction in domestic demand in the two European countries will actually be needed. This is simply an illustration of the point made above that with very small marginal import propensities between Europe and the United States, increased growth in Europe can do very little to solve the United States current account problem.

However, it is not only external positions that are affected, but also the budgetary position as lower activity reduces taxes and raises budget deficits in Europe. Suppose the governments of France and Germany instead of acting to stabilise demand, or even merely doing nothing, actively try to close the widening budget gap by raising taxes or reducing government expenditure. This further reduces activity in each country both at home and abroad. In this case the final reduction in demand turns out to be four times the original deflationary stimulus or 2 per cent of GDP.

A final hybrid case, which is of some interest, is when France attempts to maintain its current account position while Germany attempts to maintain its budgetary position. Now, with the given mix of domestic and foreign

(6)

shocks, the resulting falls in output are 2¾ per cent in France and 2½ per cent in Germany.

Of course, these figures are only illustrative and the analysis ignores important features. For instance the fall in activity could be expected to lead to a slackening in wage pressure and a reduction in inflation. This in turn would promote lower interest rates and higher investment as well as an improvement in competitiveness. Note, however, that while an improvement in French competitiveness vis-a-vis German products may enhance French activity it will tend to reduce Germany activity. Europe as a whole can only benefit by gaining competitiveness against the United States, and the scope for this may be limited if marginal import propensities and the price elasticity of exports and imports are relatively low as suggested above. Most of the compensating increase in demand therefore needs to be generated within Europe. Further the exercise also ignores the fact that reductions in demand and profitability are likely to have an adverse effect on investment which will exacerbate things further. A fall in interest rates may do little to encourage new investment if firms cannot be confident the demand for the output from that investment will be there.

What the exercise *does* show is how easily a small initial disturbance can be magnified to produce a large cumulative effect if countries that are relatively well-integrated in terms of trade flows act independently, particularly if policy moves in a destabilising manner in order to meet fixed budget or current account targets. ***There is a real danger that this may happen within Europe***. Policy decisions taken in isolation may seem sensible and rational, from the perspective of that country, but when looked at from the perspective of the Community as a whole may prove considerably less appropriate.

## 3.2 WHAT ARE THE CONSTRAINTS ON FISCAL ACTION?

The true *internal* (budgetary) constraint is simply a solvency requirement that the present value of the government's future revenues, including the revenues from seigniorage and the operating surpluses of nationalised industries, should be equal to the present value of the government's current and capital spending programme plus its outstanding liabilities.[31] Note that this solvency constraint imposes no particular requirement on the year-to-year movements in actual budget deficits.

During recessions, because of limited access to credit markets, many private agents are likely to experience a binding liquidity constraint. There is a presumption that the government, with its privileged status in international financial markets, should in such circumstances act as a "lender of first resort" by borrowing in the stead of the constrained private agents and using the proceeds to relax private sector budget constraints e.g. via tax reductions, etc. It cannot be over-emphasised that this strategy need not conflict with "responsible" fiscal policy in the medium term, provided that relatively smaller budget deficits are maintained during booms. Indeed countercyclical fiscal policy of this type is only likely to be successful so long as the government maintains a reputation for fiscal probity, otherwise it is likely to have an adverse and potentially self-defeating effect on the financial markets. But for governments that *do* have that credibility, there should be no fear of temporary increases in the budget deficit during recessions.

A simple indication of the degree of room for manoeuvre on the fiscal front can be obtained by comparing the goverment's primary surplus, i.e. the surplus excluding net interest payments, with the primary surplus it would need to run to maintain the debt-income ratio constant without resorting to monetary creation. This represents a non-inflationary,

indefinitely sustainable, fiscal position and so provides a natural benchmark, although, of course, a government may wish to move to a lower (higher) debt-income ratio in equilibrium which would necessitate a period of higher (lower) primary surpluses. Because national income is growing over time it is not necessary that the primary surplus match the government's nominal debt interest payments to ensure the debt-income ratio remains stable. Rather it has to match the real interest payments on the debt, corrected for the growth in the denominator of the debt-income ratio, namely income. Hence what matters in calculating the indefinitely sustainable primary surplus is the gap between the real interest rate and the rate of growth of the economy. Table 8 provides estimates of this sustainable primary surplus measure, calculated on the conservative assumption that the real interest rate continues to exceed the growth rate by 2 percentage points indefinitely, together with estimates of the actual primary surplus in the recent past. Table 9 gives the associated figures for the net public debt-income ratio in each country. Table 8 reveals that the United States, France, and Italy showed the biggest gaps in 1986 between the actual primary surplus and that required to stabilise the debt-income ratio, while Japan, Germany and the United Kingdom (especially) had more room for manoeuvre. It will be useful to bear these figures in mind when considering the effective constraints on policy within the Community. It must be emphasised that the required primary surplus has no normative significance and there is no reason why the debt-income ratio should be kept constant from year-to-year. The figures do, however, give an idea of the sort of permanent adjustment to the government's fiscal plans that would be necessary to ensure solvency at the current debt-income ratio.

In the same way the true ***external*** constraint for a country is just a solvency condition that the present value of future trade deficits equal the country's initial net foreign asset position rather than any requirement that the current account balance from period to period. The same intertemporal consumption smoothing arguments that underlie the case for consumers smoothing expenditure over time by borrowing and lending, and for the government to act as an agent for the private sector by borrowing on their behalf when private agents cannot, operate here as well.

Thus if the demand for exports falls temporarily or there is a temporary reduction in supply e.g. due to a strike, a country should be quite happy to run a larger trade deficit/smaller surplus in order to avoid having to reduce domestic consumption (private or public) temporarily. By the same token if there is an investment boom, due to say an improvement in expected profitability, a worsening of the trade balance is quite appropriate. Indeed the argument is even stronger here because provided the investment is sufficiently profitable, in the sense of offering a rate of return at least as great as the market rate, it could be financed through trade deficits indefinitely because the country is continually acquiring assets to match its increased foreign liabilities. By contrast permanent changes in export demand, or in potential output, will need to be accompanied by permanent changes in consumption and therefore do not necessitate movements in the current account.

Bearing these principles in mind, therefore, let us consider the perceived constraints on policy action in the four main Community economies.

3.2.1 France

French output growth has been one of the lowest in the Community in recent times, averaging less than 1½ per cent since 1982. Because of this sluggish growth, the public debt-income ratio has risen from 11.3 per cent in 1982 to 20.4 per cent today despite a reasonably modest government financial deficit that has remained at around 2¾ per cent of GDP. While the calculations of Table 8 indicate that the debt-income ratio will continue to rise with the existing fiscal stance, the fact that the debt-income ratio is still at very low levels compared to other industrialised countries suggests that the fiscal elbow room is there for postponing the planned reductions in government spending and accelerating the planned tax reductions somewhat in the face of a deflationary demand shock.

While the budgetary position is relatively good, the external position is more worrying. Despite continued wage moderation and an associated steady improvement in relative unit labour costs, a current account deficit has shown a repeated tendency to develop. Therefore external rather than internal considerations will provide the brake on French countercyclical measures. In particular the authorities are likely to be rather circumspect about pursuing a more expansionary domestic economic policy in view of the experience of 1981-82. Then a unilateral demand-led expansion quickly led to a deterioration of the current account, pressure on the franc, and ultimately a reversal of fiscal policy rather than quit the EMS. However, a very good argument can be made that the cause of the difficulties lay less with the fiscal expansion itself, but rather with the nature of the policies that were simultaneously enacted in the labour market - a sharp increase in the minimum wage, a shorter workweek, and the creation of a climate which enhanced the bargaining power of labour - and

which had an adverse effect on the supply-side of the economy.[32] A supply-side friendly fiscal expansion need not run into the same difficulties.

3.2.2 Germany

In the case of Germany there is no danger that expansion will be limited by external factors. The current balance in 1987 was still a massive 3.9 per cent of GDP. This figure does, however, hide the fact that the real trade balance deteriorated markedly in 1987 as a result of the 10 per cent loss in competitiveness in 1986 which was offset by beneficial terms of trade movements. This is just the obverse of the fact that the real dollar depreciation has done very little to reduce the United States current account deficit so far. Thus in 1986 and 1987 domestic demand growth has been outstripping output growth by 1.2 per cent each year as Germany has provided an external stimulus to her trading partners. Yet output growth is so sluggish that there would appear to be room for even faster growth of domestic demand without risking renewed inflation.

As Tables 1, 8 and 9 make clear, fiscal policy in the last four years has been directed towards consolidating the public finances and halting the rise in the debt-income ratio that took place at the start of the decade. Although still rising, its rate of increase is now more modest, and in any case stands at a relatively low level compared to other major industrialised countries. It was hoped that this consolidation would have beneficial effects on expectations in financial markets and thence onto investment. This does not seem to have materialised since private investment has remained relatively sluggish, averaging under 1½ per cent growth per annum since 1984.

More recently the fiscal stance has become rather less tight and the 1986 and 1988 tax cuts, together worth about 26 billion marks, have added

about 1¼ per cent to demand. However, as the Tables show, the relaxatory movement is relatively modest, and with a small primary surplus and a low debt-income ratio, there is still ample elbow room for fiscal action. Furthermore, having invested a considerable amount of capital in acquiring a reputation for "sound" budgetary and financial policies, the authorities are in a particularly good position to undertake a credible program of counter-cyclical fiscal measures which will not have adverse expectational effects on the financial markets.

The great danger, however, is that slow growth, falling tax revenues and a rising budget deficit will lead to a procyclical *tightening* of the public finances. Indeed the government has already announced its intention to raise excise taxes and reduce subsidies by 10 billion marks in fiscal year 1989 to offset the fall in Bundesbank profits (which appears in the relevant definition of the budget deficit) due to the decline in the dollar. Such a procyclical tightening could simply lead to a vicious circle whereby low demand expectations lead to low investment, low activity and tax revenues, and necessitate yet higher tax rates with further adverse effects on both demand and supply. At the same time slow German growth would worsen the external positions of other community countries, such as France, and limit the scope for expansionary policies there.

3.2.3 Italy

Output growth in Italy has been a respectable 2¾ per cent per annum over the last three years sustained primarily by domestic (especially consumer) demand rather than net exports. As a result the current account has shown a tendency to weaken in the last year as Italy has provided some modest net stimulus to the rest of the community. Indeed evidence of overheating had already led to tax increases in August, 1987, prior to the crash.

Yet the major problems lie less on the external side than with the public finances. With a comparatively high, and growing, net debt-income ratio of more than 100 per cent and a 4 point gap between the primary surplus and the primary surplus required to stabilise, let alone reduce, the debt-income ratio it is clear that there is very little fiscal elbow room available to the authorities. Furthermore, while it is hoped that the recent and planned (but presently unspecified in nature) tax increases will reduce the budget deficit by more than 1 per cent of GDP, this may prove difficult to achieve if there is a pronounced slowdown in the rest of the Community, to add to the domestic deflationary stimuli coming from the tax increases and any effects of the stock market collapse.

The necessary fiscal retrenchment will thus be much easier to achieve if activity is maintained by a strong growth in net exports. In the absence of that growth there will be little scope for further fiscal action to sustain activity. The only alternative would be a monetary relaxation and a devaluation of the lira within the EMS. Aside from the fact that such a realignment would probably not be acceptable under the rules of the EMS, it would in any case merely serve to impart a further deflationary shock to the rest of the Community and intensify inflationary pressures at home. This would very much be a second-best outcome therefore.

3.2.4 United Kingdom

The United Kingdom has been amongst the fastest growing countries in the community, averaging the historically high rate of nearly 3¾ per cent since 1985 with especially fast growth of 4½ per cent in 1987. This has been sustained by some fiscal relaxation in the form of tax cuts on the demand side coupled with extremely rapid productivity growth on the supply side. Rapid demand growth will be sustained through 1988 as a result of tax cuts in the March Budget worth 1 per cent of GDP and a continued

revival in private investment. Fears of overheating waned somewhat in the wake of the crash, but have been growing again as it has become clear that growth has not faltered significantly.

These fears of overheating are primarily based on two pieces of evidence, one valid and one invalid. The valid evidence of overheating comes from data on wage settlements which are averaging around 8 per cent in manufacturing compared to an inflation rate of around 4 per cent. This need not presage a future acceleration in inflation provided that the recent record on productivity growth is maintained. What *is* worrying is that productivity growth is being turned into higher wages rather than more jobs, which is necessary if unemployment is to continue falling and the high levels of output growth are to be maintained. This suggests the desirability of targeting fiscal measures in a manner likely to lessen wage pressure e.g. by selective cuts in labour taxes in regions where unemployment is highest or directed especially at the long-term unemployed, rather than in the form of general direct tax cuts whose primary short-term effect is only on the level of demand.

The other indicator of potential overheating is the current account. After a number of years of healthy surpluses reflecting both low levels of domestic activity and earnings from North Sea oil this has started slipping into deficit as British growth has outstripped her trading partners. Forecasts for the deficit currently range from 1½ per cent to 3 per cent of GDP for 1988. However, unlike previous balance of payments crises in the sixties and seventies, the present deterioration in the current account is largely a cyclical rather than structural feature reflecting the relatively rapid growth of the economy and slow growth in the rest of Europe. With the recent excellent performance on the productivity front and a large stock of foreign assets accumulated during peak years of oil production,

the United Kingdom is in a good position to run a significant current account deficit, especially since investment is booming, and thus impart a demand stimulus to the rest of the the Community.

Past experience of repeated balance of payments deficits and sterling crises may well lead, or financial market reaction force, the government to pursue a more restrictive fiscal policy in 1989. Yet as can be seen from Tables 8 and 9 with a falling debt-income ratio and a significant primary surplus there is still a considerable amount of fiscal elbow room. It will be a great pity if the opportunity to continue reducing and reforming taxes to the benefit of both demand and supply, thus maintaining growth both at home and in the rest of Europe, is missed because of unwarranted fears about the external position.

### 3.3 MONETARY AND EXCHANGE RATE POLICY

The immediate response of the major central banks to the stock market crash was to cut interest rates (Table 10) and pump liquidity into the system thus avoiding any financial collapse. However, more recently the direction of interest rate movements has tended to be in the other direction as inflation fears have replaced fears of recession. In fact the general level of interest rates is now little different from that prior to the crash. However, fiscal retrenchment in the United States, when it comes, is likely to be associated with monetary relaxation. With an unchanged monetary stance in Europe the result will, in the absence of any concerted intervention, be a further decline in the dollar against the European currencies, with further consequential adverse effects on the demand for Community output. We argued above that suitably accommodatory fiscal policies - taking cogniscance of countries initial positions[33] - can negate this, without too much difficulty. However, an obvious question is

whether a more expansionary European monetary policy would be a better way to proceed.

Our answer to this is No. The reasons are two fold. First, the use of fiscal policy as the primary stabilisation tool would enable governments to simultaneously attack problems on the supply side of the economy by reducing labour taxes and undertaking worthwhile public sector investment projects. It could be countered that relaxing monetary policy instead, while maintaining a tight budgetary stance, would put downward pressure on real interest rates and encourage investment thus also benefitting the supply side. However the effect on real interest rates should be relatively mild since these are primarily determined in world, rather than domestic, capital markets. Further the impact on investment could be very limited if firms are not confident that the demand for the output of the investment will be there. Finally, any potential financial crowding-out of investment can be avoided by ensuring that any fiscal package contains suitable inducements for investment.

The second reason is that the primary consequence of an aggressively expansionary monetary stance would be to mitigate the depreciation of the dollar. As Section 2 made clear, some further real depreciation of the dollar against the European currencies is required as part of the global adjustment process. Such a real depreciation can be brought about either through an adjustment of the nominal exchange rate, or a period of differential inflation (or some combination of the two). Now inflation, as measured by the GNP deflator, in the United States averaged around 3 per cent in 1987 and was only about ½ percentage points below the Community average (and well above the zero rate in Japan). Bringing about the real depreciation through differential inflation would therefore require either a marked deceleration of inflation in the United States, which could

probably only be brought about by provoking a recession, or a period of significantly faster inflation in Europe and elsewhere, which given the heavy costs of disinflation that have already been incurred hardly looks attractive. It therefore seems preferable for the necessary real exchange rate adjustment to be brought about relatively painlessly through movements in nominal exchange rates rather than through potentially painful adjustment in domestic price levels.

We should emphasise that we are *not* arguing in favour of a marked tightening of European monetary policy. European competitiveness needs to improve somewhat against Japan and the NICs at the same time as it deteriorates against the United States, so monetary and exchange rate policy needs to pursue a middle course between these two ends.

There is an important moral here for whether there should be renewed efforts to stabilise the nominal value of the dollar at its present level through concerted intervention. Greater stability of (real) exchange rates whether through fixed nominal rates or target zones ***is*** a worthwhile ultimate policy goal. Exchange rate volatility raises uncertainty and discourages trade and specialisation ***but attempting to hold exchange rates at unsustainable levels is both costly and unlikely to succeed***. Theory suggests - and experience has shown - that stable exchange rates can only be maintained so long as countries are willing to subordinate domestic policy objectives to external ones when the two are in conflict. It requires two countries to stabilise an exchange rate and so long as the United States pursues a policy of neglect - whether benign or malign - towards the dollar, efforts to stabilise the dollar exchange rate will be doomed to failure. ***It is better that the authorities allow the dollar to find its own level, postponing attempts at stabilising exchange rates until after the adjustment processes are complete.***

This depreciation of the dollar is likely also to lead to pressures for realignments within the EMS as dollar depreciations have usually been associated with upward pressure on the mark relative to other member countries' currencies.[34] This would probably best be accommodated by some mild relaxation of German monetary policy relative to that of other EMS currencies rather than another realignment which would lead to an additional deterioration in German competitiveness and a further deflationary shock to an economy which is already growing slowly (although, of course, the other members of the Community would benefit from the gain in their competitiveness).

The practical conduct of monetary policy is likely to become more difficult than usual in the coming months. As Table 10 shows that the different monetary aggregates within countries have often behaved in quite disparate fashion. Thus in Germany the narrow aggregates have grown rapidly while M3 has grown much more slowly. In France and the United Kingdom the opposite is true. Conflicting signals from different monetary aggregates are a perennial problem for the central banks, but it is a problem that is likely to worsen rather than improve in the near future. Financial innovation and the development of new financial instruments has already encouraged rapid growth of the broad aggregates in many countries and this is likely to be augmented by increased demands for liquidity in the wake of the upheavals in stock markets. Further fluctuations in the demand for liquidity are likely if the volatility of financial markets continues. This increased demand for liquidity is simply a velocity shock and should be accommodated since the increased monetary growth need not foreshadow any acceleration in nominal GNP growth or inflation. This might suggest that it could be better to focus on narrower monetary aggregates which ought to be largely immune from such portfolio shifts. Here too,

however, there are problems - as the Bundesbank has discovered - because the successful recent disinflation has been associated with an increased demand for non-interest bearing money as nominal interest rates have come down. Again this increase in demand should be accommodated as it represents a fall in velocity and carries no inflationary implications. In the light of this, policy makers, more than ever, should adopt a pragmatic approach and monitor a wide range of indicators, both financial and real, of the likely growth of nominal GDP and the other objectives of policy, and not focus too closely on movements in the monetary aggregates.

## 4. THREE SCENARIOS

It seems that the stock market crash did not represent a major change in fundamentals and its direct effect on the OECD economies has been rather small. However, there is a danger that complacency will delay the necessary adjustments to global economic policies. Despite pleas for fiscal expansion in Europe and Japan, faster growth in these countries can do relatively little to reduce the size of the United States current account deficit, although, paradoxically, a supply-friendly fiscal expansion is precisely what is in Europe's own best interests. A real depreciation of the dollar is also required and it is likely that further depreciation may yet be necesary. The real depreciation that has already ocurred, coupled with the post-crash monetary relaxation, has ensured that the United States did not slip into recession, but has imparted a further small deflationary shock into the European economies, which will be magnified when the much delayed fiscal retrenchment occurs in the United States. We can sketch out three possible scenarios.

Under the "optimistic" scenario, Germany eschews fears about growth in government debt, and France and the United Kingdom stop worrying about a worsening of their current accounts and undertake fiscal measures that tackle supply-side problems as well as sustaining demand. Cuts in labour taxes, worthwhile public investment projects, and temporary subsidies to private investment are a good way of doing this. In addition by credibly comitting themselves to sustaining demand any collapse in private investment is avoided. The dollar is allowed to fall to find its own equilibrium level while the Far East currencies appreciate relative to the EMS. As a result the imbalance in current accounts disappears and protectionist pressures abate.

However there is many a slip twixt cup and lip. What happens if things do not develop in this fashion? If it does not come voluntarily, then fiscal adjustment in the United States will probably be forced on the authorities by the financial markets. Rising bond yields or a plumetting dollar risk renewing the financial turbulence seen at the end of 1987, but perhaps with more profound consequences for the real economy. Whether the fiscal adjustment takes place in an orderly manner or in an atmosphere of crisis, some further real depreciation of the dollar will be required. Members of the Community, individually boxed in by budgetary or current account concerns, may feel there is little room for generating more demand domestically through fiscal action. On the one hand they could try to stabilise the dollar and maintain competitiveness through monetary relaxation. If for mercantilist reasons the Far East producers follow the same policies, the result would be a global loosening of monetary policy and a fall in real interest rates which would at least do something to maintain the level of world activity. However, it would do little to correct trade imbalances. In due course price adjustment through deflation in the United States and inflation elsewhere might do the trick in bringing about the necessary change in real exchange rates, but in the meantime continuing penetration of the American market by foreign producers and the associated squeeze on the American tradeable sector are likely to exacerbate protectionist pressures. The protectionist lobby is already fairly influential within the Democratic party and if American producers see themselves as barred from entering foreign markets a reciprocal slide into protectionism is all too easily possible. This systemic interaction between macroeconomic policies and the trade regime represents the single greatest threat on the horizon.

Alternatively European policymakers might acquiesce in a renewed decline of the dollar. This would at least moderate protectionist pressures by accelerating correction of current account imbalances. However, in the absence of fiscal action within Europe, growth would slow, further tightening the budgetary and current account constraints facing member countries. Now there is the danger that German worries over the budget deficit and French and British concerns about the current account result in a procyclical fiscal contraction that amplifies the small initial deflationary shock and drags the rest of the Community into a recession, raising unemployment to yet higher levels. Recent European experience suggests that once unemployment has risen it may be difficult to get it down.

Neither of these "pessimistic" scenarios are very pleasant to contemplate. One naturally hopes that the "optimistic" scenario is the most likely. However, the downside risk remains.

FOOTNOTES

1 W.H. Buiter ("A Guide to Public Sector Debt and Deficits", ***Economic Policy***, No.1, 1985) points out that there can be no such thing as a model-free measure of fiscal impact. It would only make sense to stabilise such a measure if the automatic stabilisers within the tax and benefit system happened to provide an optimal response to shocks impinging on the economy.

2 An interesting question is whether they could have been sterilised without a significant change in interest rates. If the need for the intervention arises from a portfolio shift by investors away from US towards domestic bonds - as in the present case - then there is no reason why the authorities cannot satisfy the increased demand for domestic bonds by undertaking a suitable open market operation which would at the same time offset the domestic monetary implications of the reserve flows.

3 See e.g. R.J. Shiller. "Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?", ***American Economic Review,*** May 1981 and J.Y. Campbell and R.J. Shiller, "Cointegration and Tests of Present Value Models", ***Journal of Political Economy***, October 1987.

4 See e.g. T. Marsh and R. Merton, "Dividend Variability and Variance Bounds Tests for the Rationality of Stock Market Prices", ***American Economic Review***, June 1986.

5 An autoregression of the UK profit rate from 1922 to the present (excluding the war years) yields a coefficient of 0.75 on the lagged profit rate and is significantly different from unity (t=3.1). The implication is that typically it takes three years for a shock to the profit rate to get halfway to being eliminated. Similarly, an

autoregression of the UK (ex post) short real interest rate over the same period yields a coefficient of 0.49 on the lagged real interest rate, again significantly different from unity (t=5.07), and implying even faster return to the mean.

6 Of course the market's assessment of the effect on fundamentals of factors such as these could have been greatly exaggerated, in which case observed behaviour may be consistent with a fundamentalist explanation, albeit with irrational expectations. One does not have to be a true believer in the rational expectations hypothesis to regard this as grasping at straws, however.

7 On October 15th the price of December puts was 10.5. The following day it had risen to 16.9. By October 19th, after the crash had begun, it had risen to 70. Application of the Black-Scholes option pricing formula gives implied estimates of market volatility of 23%, 32.2% and 132.2%.

8 R. Shiller, "Investor Behaviour in the October 1987 Stock Market Crash: Survey Evidence", National Bureau of Economic Research, Working Paper No. 2446.

9 We are here using the finance theorist's notion of efficiency, namely that there are no unrealised abitrage opportunities. Note that this is *not* the same as requiring that the value of an asset is determined solely by its fundamentals.

10 Suppose a share pays a constant dividend, D, per period, and the price of the share, P, is given by:

$$\begin{cases} P_{t+1} = \lambda_t P_t & \text{with probability } \varphi \\ P_{t+1} = P_0 & \text{with probability } (1-\varphi) \end{cases}$$

i.e. the bubble continues with a probability of $\varphi$ and bursts with a

probability of $(1-\varphi)$. Then the total expected return on the share at the start of period t is given by

$$(D + E[P_{t+1}] - P_t)/P_t = \{[D + (1-\varphi)P_0]/P_t\} + \varphi\lambda_t - 1$$

If investors are indifferent to risk this must be equal to the return on a competing safe asset, R, i.e. $\lambda_t$ must satisfy

$$\lambda_t = \{(1+R) - [D + (1-\varphi)P_0]/P_t\}/\varphi$$

If the safe interest rate is ½% per month and the initial dividend yield $(D/P_0)$ is ¼% per month, then a rise in the share price of 30% over 9 months is consistent with a value of $\varphi$=0.7.

11 There is a large literature on rational bubbles and the associated phenomena of "sunspot" equilibria in which asset prices can depend on totally extraneous and irrelevant variables. See e.g, C. Azariadis, "Self-Fulfilling Prophecies", *Journal of Economic Theory*, 1981, and J. Tirole, "Asset Bubbles and Overlapping Generations", *Econometrica*, September 1985.

12 See M. King and S. Wadhwani, "Transmission of Volatility Between Markets", mimeo, London School of Economics, 1988.

13 See R. Hall, "Stochastic Implications of the Life-Cycle Permanent Income Hypothesis: Theory and Evidence", *Journal of Political Economy*, 1978.

14 For a recent study along these lines see M. Catinat et al., "The Determinants of Investment", *European Economy*, March 1987.

15 The presence of bubbles may be one reason why the "Q" model does not fare well empricially.

16 In the benchmark case where the Modigliani-Miller theorem holds and the firm's financial structure is irrelevant to its investment decisions, then the fall in the cost of the equity finance should merely lead to a

financial restructuring of the firm and capital formation will be unaffected. For an argument that debt is generally the marginal source of finance, see J. Stiglitz, "Taxation, Corporate Financial Policy and the Cost of Capital", ***Journal of Political Economy***, 1973.

17 Indeed M. Friedman and A. Schwartz, ***A Monetary History of the United States***, attribute the depression entirely to the perverse response of the Federal Reserve.

18 Of course one could argue that if investors expected the monetary authorities to make the same mistake again, then the downward revaluation of share prices of 19th October *could* reflect a change in fundamentals. In that case the crash would be in the nature of self-fulfilling prophecy. However, such a belief would fly in the face of both the conventional wisdom of the role of the central bank and recent behaviour by the monetary authorities in the face of banking crises e.g. the secondary banking crisis in the United Kingdom in 1973. Furthermore there does not seem to have been any suggestion prior to the crash that the monetary authorities would fail to act as a "lender of last resort" to ensure the liquidity of the banking system, so the argument seems somewhat strained.

19 The change in the debt-national income ratio, b, is given by $d + (r-n)b$, where d is the primary deficit as a proportion of national income, r is the real interest rate and n the rate of growth of real national income.

20 ***World Financial Markets***, Morgan Guaranty Trust Company, November/ December 1987.

21 J. Dreze, C Wyplosz, C. Bean, F. Giavazzi and H. Giersch, "The Two-Handed Growth Strategy for Europe: Autonomy through Flexible Co-operation", CEPS, Brussels, 1987.

22 R. Bryant, D. Henderson, G. Holtham, P. Hooper and S. Symansky (eds), *Empirical Macroeconomics for Interdependent Economics*, Brookings Institution, Washington, reported in G. Holtham and A. Hughes-Hallet, "International Policy Cooperation and Model Uncertainty", Centre for Economic Policy Research, Discussion Paper No.190, 1987.

23 See, especially, R. Baldwin and P. Krugman, "Persistent Trade Effects of Large Exchange Rate Shocks", National Bureau of Economic Research Working Paper No. 2017, 1987.

24 This is not quite correct because the firm can re-enter after exiting on payment of the appropriate entry cost. Thus suppose N is the fixed cost of entering (or re-entering) and let $V_I$ ($V_0$) be the expected present value to the firm of being in (out) of the market, and suppose profits $\pi$ follow a serially uncorrelated process. Then the firm will enter if $\pi > N + \delta(V_0-V_I)$ and exit if $\pi < \delta(V_0-V_I)$ where $\delta$ is an appropriate discount factor.

25 This draws on presently unpublished work of A. Dixit, reported by P. Krugman, "An Imperfectly Integrated World", Robbins Memorial Lectures, London School of Economics, 1988.

26 This view has, of course, already been voiced widely e.g. by Krugman, op.cit., and R. Dornbusch, "The EMS, the Dollar and the Yen", Centre for Economic Policy Research, Discussion Paper No. 216, 1988.

27 This figure is based on simulations with the INTERLINK of the effects of a 10% dollar depreciation model reported in *OECD Economic Outlook*, December 1987. To the extent that hysteresis effects of the sort discussed in Section 2 are important the simulations may overstate the effects on trade prices and volumes.

28 F. Giavazzi, "The Dollar and Materials Prices", mimeo, 1988.

29 J. Dreze et al., op.cit.

30 If the drop in exports to the United States is due to an appreciation of the dollar - as in the present instance - the current account deterioration in nominal terms, which is presumably what matters, will be much less marked. In that case the numbers in the illustrative exercise will need to be appropriately adjusted downwards.

31 For an elaboration of these principles see W.H. Buiter, "A Guide to Public Sector Deficits and Debt", ***Economic Policy***, November 1985.

32 See J. Sachs and C. Wyplosz, "The Economic Consequences of President Mitterrand", ***Economic Policy***, April 1986.

33 J. Dreze et al., op.cit., contains an extensive discussion of the appropriate distribution of the burden of fiscal action across the Community taking account of differing initial positions and constraints.

34 See F. Giavazzi and A. Giovannini, "The EMS and the Dollar", ***Economic Policy***, April 1986.

## APPENDIX: THE IMPORTANCE OF INTRA-EUROPEAN CO-ORDINATION

Let the demand for output (Y) in the United States (US), France (F), and Germany (G) be given by:

$$(1) \qquad Y^{US} = c(1-t)Y^{US} + m^*(Y^F+Y^G) - 2m^*Y^{US} + Z^{US} + G^{US}$$

$$(2) \qquad Y^F = c(1-t)Y^F + mY^G + m^*Y^{US} - (m+m^*)Y^F + Z^F + G^F$$

$$(3) \qquad Y^G = c(1-t)Y^G + mY^F + m^*Y^{US} - (m+m^*)Y^G + Z^G + G^G,$$

where $c(=0.8)$ is the common marginal propensity to consume

$t(=0.3)$ is the common marginal tax rate

$m(=0.3)$ is the marginal propensity of France (Germany) to import from Germany (France)

$m^*(=0.05)$ is the marginal propensity of the United States to import from each European country and vice versa.

$Z = Z_D + Z_T$ is a shift variable comprising an autonomous domestic component ($Z_D$) and a foreign component ($Z_T$) and G is government expenditure. The Z variables also capture the effects of changes in interest rates and real exchange rates, which have been formally suppressed in order to focus on the trade linkages.

Simple algebra then establishes that:

$$(4) \qquad Y^F = [(s+m+m^*)(Z^F+G^F)+m(Z^G+G^G)+(s+2m+m^*)m^*Y^{US}]/[(s+m+m^*)^2-m^2]$$

$$(5) \qquad Y^G = [(s+m+m^*)(Z^G+G^G)+m(Z^F+G^F)+(s+2m+m^*)m^*Y^{US}]/[(s+m+m^*)^2-m^2]$$

where $s = 1-c(1-t)$ $(=0.44)$ is the economy's marginal propensity to save.

For simplicity assume that United States output is held fixed so that any spillover onto United States exports from activity in Europe is

neutralised by appropriate policy action. Then a common shock $\Delta Z = \Delta Z^F = \Delta Z^G$ produces a change in demand of:

$$(6) \qquad \Delta Y^F = \Delta Y^G = \{(s+2m+m^*)/([(s+m+m^*)^2-m^2]\}\Delta Z = 2.04\Delta Z.$$

By contrast the domestic multiplier on a unilateral fiscal action is simply $\{(s+m+m^*)/[(s+m+m^*)^2-m^2]\} = 1.48$

The (real) trade balance for France and Germany is:

$$(7) \qquad TB^F = m(Y^G-Y^F) + m^*(Y^{US}-Y^F) + Z_T^F$$

$$(8) \qquad TB^G = m(Y^F-Y^G) + m^*(Y^{US}-Y^G) + Z_T^G$$

where $Z_T$ denotes those elements of Z associated with foreign trade. Thus in the face of a common external shock $\Delta Z_T = \Delta Z_T^F = \Delta Z_T^G$, and given the symmetric structure of France and Germany, it follows that, if the trade position is to be maintained:

$$(9) \qquad \Delta Y^F = \Delta Y^G = \Delta Z_T/m^* = 20\Delta Z_T.$$

The budget deficit (BD) for France and Germany is:

$$(10) \qquad BD^F = G^F - tY^F$$

$$(11) \qquad BD^G = G^G - tY^G,$$

where G is government spending. Maintaining the budgetary position by cutting government spending requires that $\Delta G^F = t\Delta Y^F$ and $\Delta G^G = t\Delta Y^G$. Simple algebra again establishes that for a common domestic or foreign shock, $\Delta Z$, the resulting change in output is given by

$$(12) \qquad \Delta Y^F = \Delta Y^G = \{(s'+2m+m^*)/[(s'+m+m^*)^2 - m^2]\}\Delta Z = 4\Delta Z$$

where $s' = 1-c$ (=0.2).

Finally, suppose France maintains its current account position while Germany maintains its budgetary position. Slightly more complicated algebra shows that if the common shock is entirely domestically generated ($\Delta Z_D = \Delta Z_D^F = \Delta Z_D^G$) then:

$$(13) \qquad \Delta Y^F = \{m/[(s'+m+m^*)(m+m^*) - m^2]\}\Delta Z_D = 2.93\Delta Z_D$$

$$(14) \qquad \Delta Y^G = \{(m+m^*)/[(s'+m+m^*)(m+m^*) - m^2]\}\Delta Z_D = 3.41\Delta Z_D.$$

By contrast if the common shock comes entirely from abroad ($\Delta Z_T = \Delta Z_T^F = \Delta Z_T^G$) the corresponding expressions are:

$$(15) \qquad \Delta Y^F = \{(s'+2m+m^*)/[(s'+m+m^*)(m+m^*) - m^2]\}\Delta Z_T = 8.29\Delta Z_T$$

$$(16) \qquad \Delta Y^G = \{(2m+m^*)/[(s'+m+m^*)(m+m^*) - m^2]\}\Delta Z_T = 6.34\Delta Z_T$$

When the shock originates both at home and abroad, these two sets of expressions can just be combined with appropriate weights.

TABLE 1

Fiscal surpluses (% of GNP/GDP) and private savings ratios

| | 1980 | 1982 | 1984 | 1986 | 1987 |
|---|---|---|---|---|---|
| United States | | | | | |
| Budget surplus | -1.3 | -3.5 | -2.8 | -3.5 | -2.4 |
| Federal budget surplus | -2.3 | -4.6 | -4.5 | -4.8 | -3.4 |
| Structural budget surplus[a] | -0.5 | -0.9 | -1.7 | -2.9 | -2.0 |
| Private savings ratio[b] | 17.8 | 18.1 | 15.9 | 15.9 | 14.2 |
| Japan | | | | | |
| Budget surplus | -4.4 | -3.6 | -2.1 | -1.1 | -0.2 |
| Structural budget surplus[a] | 0.2 | 1.5 | 3.0 | 4.2 | 4.9 |
| Private savings ratio[b] | 28.9 | 28.1 | 27.7 | 27.8 | 28.5 |
| France | | | | | |
| Budget surplus | 0.0 | -2.8 | -2.7 | -2.9 | -2.3 |
| Structural budget surplus[a] | 1.6 | 0.2 | 0.7 | 1.3 | 2.0 |
| Private savings ratio[b] | 18.0 | 18.7 | 18.4 | 19.2 | 18.3 |
| Germany | | | | | |
| Budget surplus | -2.9 | -3.3 | -1.9 | -1.7 | -1.7 |
| Structural budget surplus[a] | -0.2 | 1.4 | 4.0 | 4.3 | 4.0 |
| Private savings ratio[b] | 20.1 | 21.5 | 21.0 | 22.5 | 19.7 |
| Italy | | | | | |
| Budget surplus | -8.5 | -11.3 | -11.7 | -11.6 | -10.6 |
| Structural budget surplus[a] | 1.1 | -2.3 | 0.3 | -0.1 | 0.3 |
| Private savings ratio[b] | 27.1 | 28.6 | 28.7 | 28.5 | 26.7 |
| United Kingdom | | | | | |
| Budget surplus | -3.5 | -2.5 | -3.9 | -2.7 | -1.4 |
| Structural budget surplus[a] | 2.1 | 6.5 | 5.2 | 5.3 | 5.6 |
| Private savings ratio[b] | 20.6 | 18.4 | 19.8 | 17.7 | 17.2 |

Notes

[a] Cumulated change in OECD measure of structural budget surplus (1979=0)
[b] Sum of private investment rate, government financial deficit and current account surplus.

Sources

*OECD Economic Outlook*, *IMF Financial Statistics*, and *European Economy*.

TABLE 2

Current balances (% of gdp/gnp) and effective exchange rates (1970=100)

| | 1980 | 1982 | 1984 | 1986 | 1987 |
|---|---|---|---|---|---|
| United States | | | | | |
| Current balance | 0.1 | -0.3 | -2.8 | -3.3 | -3.6 |
| Effective exchange rate | 80.1 | 94.5 | 103.6 | 87.6 | 77.8 |
| Japan | | | | | |
| Current balance | -1.0 | 0.6 | 2.8 | 4.4 | 3.6 |
| Effective exchange rate | 139.2 | 146.8 | 169.7 | 227.6 | 249.0 |
| France | | | | | |
| Current balance | -0.6 | -2.2 | -0.2 | 0.4 | -0.5 |
| Effective exchange rate | 94.8 | 83.4 | 76.8 | 80.3 | 80.2 |
| Germany | | | | | |
| Current balance | -1.9 | 0.6 | 1.3 | 4.2 | 3.9 |
| Effective exchange rate | 155.7 | 159.3 | 167.7 | 185.9 | 196.9 |
| Italy | | | | | |
| Current balance | -2.2 | -1.5 | -0.5 | 0.5 | -0.1 |
| Effective exchange rate | 49.6 | 42.6 | 40.2 | 39.4 | 39.5 |
| United Kingdom | | | | | |
| Current balance | 1.3 | 1.5 | 0.5 | 0.0 | -0.4 |
| Effective exchange rate | 72.5 | 71.9 | 64.6 | 59.8 | 58.9 |

Source

*OECD Economic Outlook*

TABLE 3

Stock market movements

Percentage change in index end-December 1987 from:

| | End-September 1987 | End-December 1986 |
|---|---|---|
| United States | -27 | -4 |
| Japan | -13 | +16 |
| France | -30 | -29 |
| Germany | -35 | -39 |
| Italy | -24 | -32 |
| United Kingdom | -31 | 0 |
| Hong Kong | -50 | -21 |

Source

Morgan Guaranty, ***World Financial Markets***.

TABLE 4

Survey-based industrial confidence indicator

| | 1987 | | | | 1988 | | |
|---|---|---|---|---|---|---|---|
| | Q3 | Oct | Nov | Dec | Jan | Feb | Mar |
| France | -6 | -2 | -4 | -1 | 0 | -1 | -2 |
| Germany | -12 | -9 | -8 | -9 | -11 | -10 | -8 |
| Italy | -1 | 2 | 0 | 1 | 1 | 1 | 2 |
| United Kingdom | 14 | 19 | 20 | 17 | 21 | 18 | 17 |
| EC | -3 | 0 | 0 | 0 | 1 | 0 | 0 |

Note

Derived from survey questions on production, orders, stocks and prices. A positive movement indicates an improvement in confidence.

Source

***European Economy***, Supplement B.

TABLE 5

Current account of Asian NICs ($ billion)

| | 1985 | 1986 | 1987 |
|---|---|---|---|
| Korea | -0.9 | 4.6 | 9.8 |
| Taiwan | 9.2 | 16.2 | 18.2 |
| Hong Kong | 1.7 | 1.6 | 1.8 |
| Singapore | 0.0 | 0.5 | 0.2 |

Source

OECD *Economic Outlook*.

TABLE 6

Real exchange rates of major OECD countries and the Asian NICs
(1980-82 Average = 100)

| | 1981 | 1983 | 1985 | 1987 |
|---|---|---|---|---|
| United States | 99.8 | 114.9 | 123.3 | 96.5 |
| Japan | 104.7 | 100.4 | 104.2 | 132.0 |
| Germany | 96.2 | 100.6 | 95.7 | 108.6 |
| Korea | 100.3 | 97.6 | 89.2 | 75.1 |
| Taiwan | 101.8 | 94.6 | 94.6 | 92.6 |
| Hong Kong | 98.7 | 95.0 | 103.5 | 89.6 |
| Singapore | 102.0 | 101.8 | 95.7 | 74.1 |

Source

Morgan Guarantee, ***World Financial Markets***

TABLE 7

Structure of community trade in 1986

| | Exports (% of GNP) | | | Imports (% of GNP) | | |
|---|---|---|---|---|---|---|
| | To rest of Europe | To North America | To rest of World | To rest of Europe | To North America | To rest of World |
| Germany | 18.9 | 3.1 | 5.1 | 14.8 | 1.4 | 5.0 |
| France | 11.2 | 1.4 | 4.2 | 12.9 | 1.2 | 3.9 |
| Italy | 10.6 | 1.9 | 3.7 | 11.1 | 1.1 | 4.5 |
| United Kingdom | 11.1 | 3.2 | 5.0 | 14.7 | 2.9 | 5.3 |

Source

***European Economy***, November 1987.

Note

Europe includes non-Community Europe.

TABLE 8

General government primary and required primary surpluses

| | 1980 | 1982 | 1984 | 1986 | Required Primary Surplus |
|---|---|---|---|---|---|
| United States | 1.0 | -0.7 | 0.4 | -1.1 | 0.6 |
| Japan | -3.0 | -1.7 | -0.1 | 0.5 | 0.5 |
| France | 1.4 | -1.1 | -1.0 | -1.3 | 0.4 |
| Germany | -1.7 | -1.5 | -0.2 | 0.1 | 0.5 |
| Italy | 1.9 | 2.7 | 0.0 | -2.6 | 2.1 |
| United Kingdom | 3.1 | 3.7 | 1.3 | 1.7 | 0.9 |

Source

World Bank, ***World Development Report***, October 1987 and author's calculations.

Note

The required primary surplus is the primary surplus required to keep the debt-income ratio constant without seigniorage. It is constructed assuming a gap between the real interest rate and the growth rate of 2 pecentage points.

TABLE 9

Net debt of general government (% of GNP/GDP)

| | 1980 | 1982 | 1984 | 1986 | 1987 |
|---|---|---|---|---|---|
| United States | 19.5 | 21.4 | 24.1 | 28.8 | 29.9 |
| Japan | 17.3 | 23.2 | 26.9 | 26.2 | 26.6 |
| France | 9.1 | 11.3 | 15.2 | 18.5 | 20.4 |
| Germany | 14.3 | 19.8 | 21.7 | 22.2 | 23.0 |
| Italy | 61.8 | 73.4 | 87.8 | 99.2 | 103.9 |
| United Kingdom | 48.0 | 46.4 | 48.5 | 46.9 | 46.1 |

Source

OECD, ***Economic Outlook***, June 1987.

TABLE 10

Short and long interest rates

| | 1987 | | 1988 | | |
|---|---|---|---|---|---|
| | Sept | Nov | Jan | Mar | May |
| United States | | | | | |
| Short | 6.9 | 5.4 | 5.8 | 5.9 | 6.7 |
| Long | 9.6 | 9.2 | 8.3 | 9.4 | 9.5 |
| Japan | | | | | |
| Short | 3.9 | 3.9 | 3.9 | 3.8 | 3.8 |
| Long | 5.7 | 5.1 | 4.7 | 4.5 | 4.7 |
| France | | | | | |
| Short | 7.9 | 8.6 | 8.1 | 8.3 | 7.6 |
| Long | 10.5 | 9.8 | 9.5 | 9.5 | 9.1 |
| Germany | | | | | |
| Short | 4.0 | 3.7 | 3.3 | 3.4 | 3.5 |
| Long | 6.8 | 6.2 | 6.2 | 6.2 | 6.6 |
| United Kingdom | | | | | |
| Short | 10.3 | 8.9 | 8.7 | 8.7 | 7.7 |
| Long | 10.7 | 9.6 | 9.8 | 9.4 | 9.5 |

Source

Goldman Sachs, *International Economics Analyst*, June.

TABLE 11

Monetary and nominal income growth

| | Growth over last year | | |
|---|---|---|---|
| | Narrow[a] | Broad[b] | Nominal GNP (1987) |
| United States | 3.4 | 6.1 | 6.0 |
| Japan | 8.9 | 11.4 | 4.1 |
| France | 0.4 | 7.3 | 4.7 |
| Germany | 9.8 | 6.3 | 3.8 |
| United Kingdom | 6.2 | 15.8 | 9.2 |

Source

Goldman Sachs, *International Economics Analyst*, June.

Notes

a M1 except M0 in United Kingdom.
b M3 in United States, Germany and United Kingdom
M2 in France, M2 + CDS in Japan.

FIGURE 1 : STOCK AND BOND PRICES (JAN 1984=100)

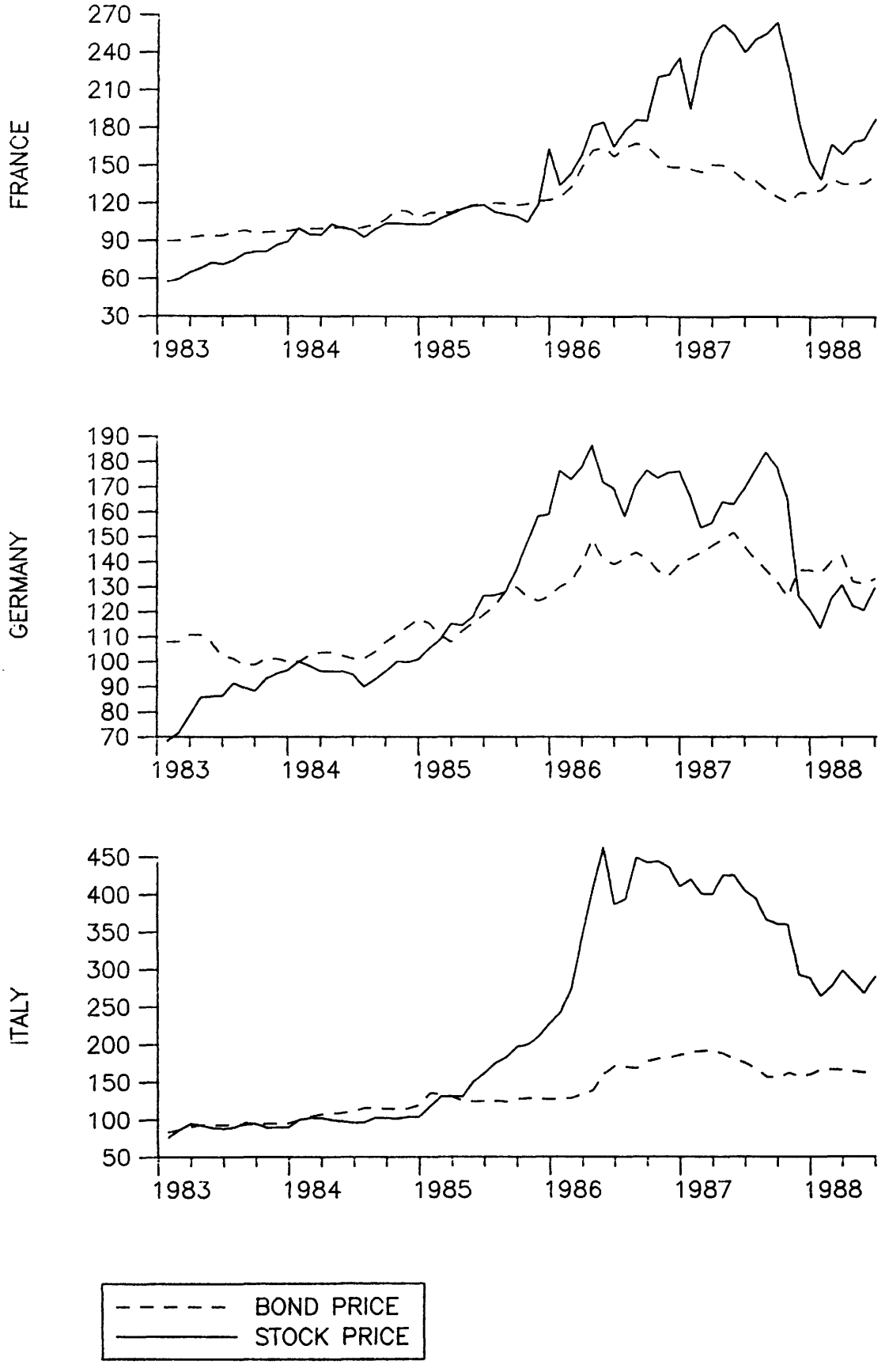

FIGURE 1(CONT.) : STOCK AND BOND PRICES (JAN 1984=100)

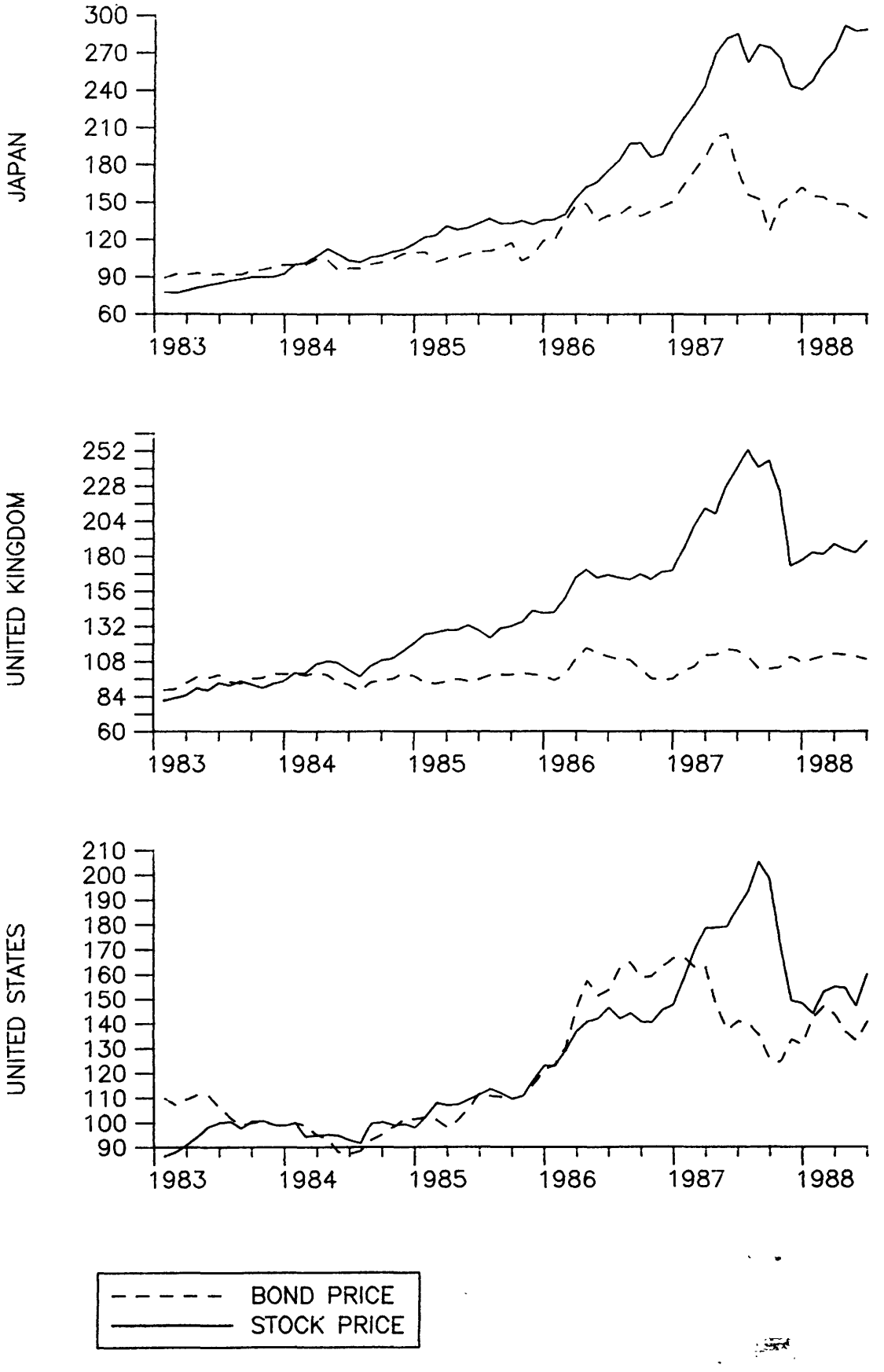

FIGURE 2: Growth Rate of US Non-Durable and Services Consumption Expenditure

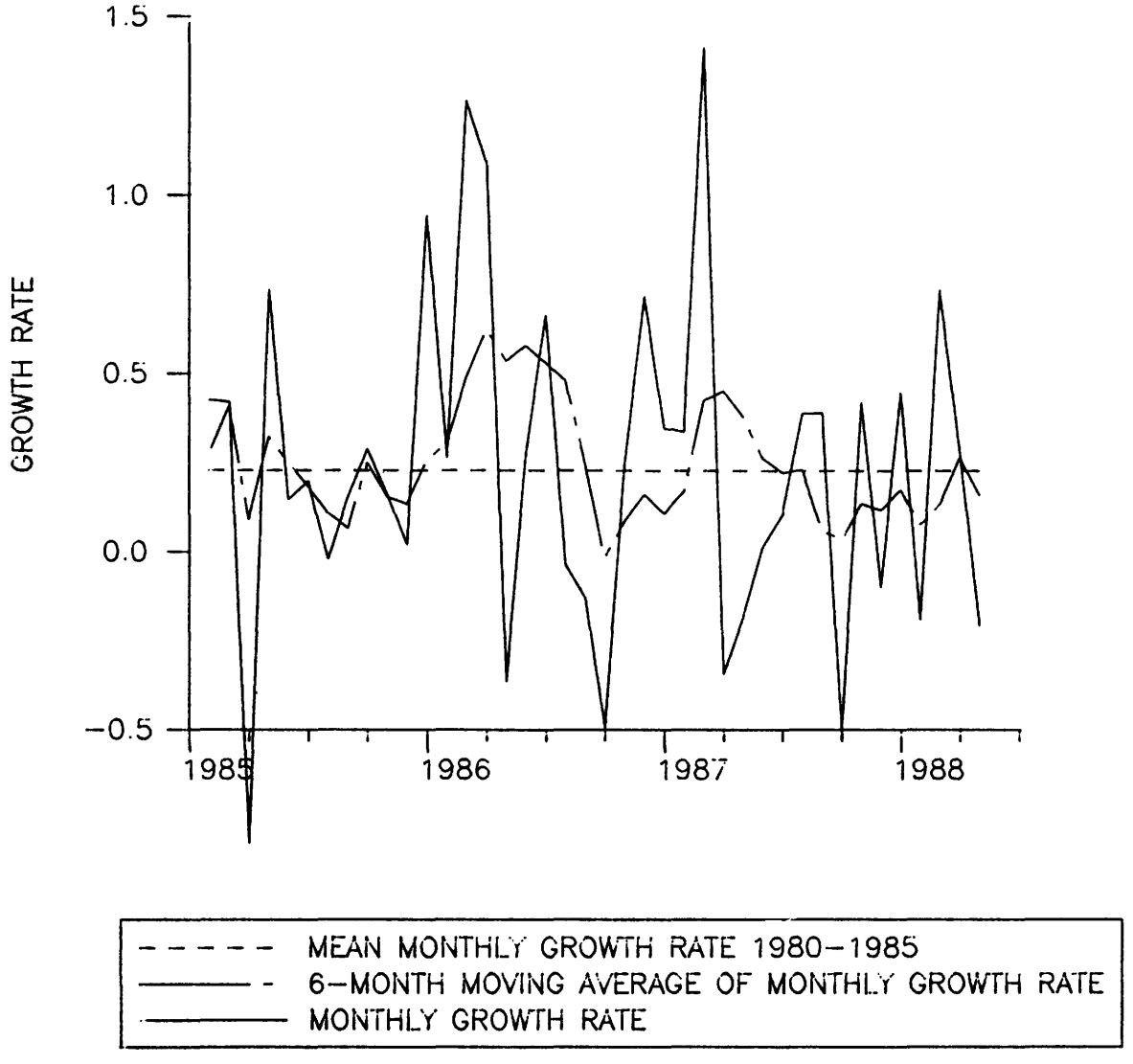

FIGURE 3: US COMPETITIVENESS MEASURES

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